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Political Budget Cycles: Conditioning Factors and New Evidence

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Abstract*:*

This chapter reviews the literature on political budget cycles (PBCs), focusing on studies that analyze the conditionality of opportunistic effects. First, factors that affect incentives of politicians to embark on pre-electoral policy manipulations are highlighted, and then factors that influence the capability of those manipulations to generate additional votes are discussed. Finally, the effects of personal characteristics of leaders on PBCs are explored. To complement the review, an empirical investigation of electoral effects on central governments' deficit, expenditure and revenue series, under various political arrangements, is implemented on a large panel covering 78 countries and 42 years of data (1975 to 2016). Empirical results confirm that PBCs are more likely to occur under certain politico-institutional circumstances, including predetermined elections, disputed elections, majoritarian electoral rules, larger private benefits from holding office, weak constraints on executives, a high proportion of uninformed voters, and new democracies.

Keywords*:* political budget cycles; political business cycles; fiscal policy; conditionality; rhythms

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1. Introduction

The assumption of public officials as benevolent dictators whose only interest is to maximize social welfare has long been abandoned. In fact, many political economists would agree that politicians are self-interested -- they care about winning the elections or extracting tangible rents for themselves -- and thus, when in office, manipulate economic policies to further these goals. The theoretical argument is rather straightforward: voters tend to like low taxes and high spending in public goods, and prefer candidates who they expect will deliver them greater wellbeing in the post-electoral period. Re-election motives can thus induce politicians to adopt voter-friendly policies before the elections (which often entail distortionary effects), leading to fluctuations in the government budget that track the electoral calendar in timing. Such fluctuations are commonly termed in the literature as 'political budget cycles' (PBCs).

The theory underlying the existence of PBCs was originally formulated in the mid-1970s. The most popular politico-economic approach to macroeconomic policy is the 'political business cycle' model of Nordhaus (1975).[1] According to this model, governments take advantage of an exploitable Phillips curve to buy votes from naïve and myopic voters. In particular, they conduct stimulatory policies before each election to improve real macroeconomic outcomes (e.g. income, employment and growth) and eliminate the resulting inflation with a shift to contractionary policies after the election. Myopic voters reward this behavior because the election takes place when the economy is temporarily doing well. Empirical efforts to find electoral cycles in inflation and real outcomes, however, were largely unsuccessful. As noted by Alesina et al. (1997), this is partly because the assumption that the electorate is incapable of learning and prone to systematic mistakes in expectations is not satisfactory from a conceptual point of view.

[1] For a survey of the literature on 'political business cycles' see Dubois (2016).

A second generation of theories, recognizing the empirical shortcomings of Nordhaus' approach and inspired by the rational expectation revolution of the 1970s, illustrate how voters' rationality can limit policymakers' ability to influence the state of the economy. According to these theories, however, even when voters are rational, electoral budgetary cycles can still occur due to the presence of information asymmetries between policymakers and voters. For instance, Rogoff and Sibert (1988) assume that each politician has a competence type (high or low) which is private information (for the politician). Voters want to elect the candidate who maximizes their expected utility and form expectations about his competence by observing fiscal policy instruments. Before the election, the high-type incumbent attempts to signal or feign his competence by engaging in expansionary fiscal policy, which is less 'costly' to him than it is for the low-type. This results in the creation of budget deficits at election timing. Following the 'competence' argument, Rogoff (1990) proposes a related model that exploits the existence of electoral cycles in the composition (rather than the level) of government spending: the incumbent here tries instead to signal or feign his competence by shifting outlays towards the more 'visible' current consumption and away from public investment.

In an alternative model of the second generation PBC theories, Shi and Svensson (2006) assume that all politicians, regardless of their type or ability, have an incentive to boost the supply of public goods before the election. By doing so, they hope that voters would attribute the boost to their competence. The key features of their model are that 1) politicians' incentives to influence voters' perception increase in the amount of rents they obtain when in power, and 2) the return for the incumbent to conduct pre-electoral manipulations increases in the proportion of uninformed voters who fail to distinguish pre-electoral manipulations from politicians' competence. Thus, the size of PBCs depends on the amount of private rents extractable and the share of informed voters, resulting in stronger electoral cycles in developing countries.

In a more recent theoretical formulation, Drazen and Eslava (2010) explain the existence of electoral cycles in countries with sophisticated, well-informed voters, who are averse to high overall government spending; that is, the case of established developed democracies. The main departure from the earlier approaches is that imperfect information about the incumbent is about his preferences over the composition of the budget rather than about his competence. Specifically, according to this model, citizens value government spending on some goods but not others, and rational, forward-looking voters use the composition of public expenditure to make inferences about the incumbent's preferences. Electoral manipulation thus takes the form of shifting spending towards the goods that voters prefer in the attempt to convince them that the incumbent shares their spending priorities.

Turning to the empirical literature, a vast number of papers have investigated the existence of PBCs, using various cross-country data and local-government data within a country. Though more favorable to the predictions of the second generation of theories, the empirical studies have hardly been conclusive. However, a consensus has recently been reached that the emergence of PBCs is context-conditional. Indeed, as pointed out by Franzese (2002), electoral cycles in economic policies tend to generate the greatest theoretical interest and to receive strongest empirical support when researchers recognize their context conditionality; that is, the dependence of the magnitude, regularity, and content of PBCs on international and domestic politico-economic and institutional conditions. It is thus critical to identify the contextual factors influencing politicians' incentives to embark on pre-electoral policy manipulations and those influencing their capacity to increase their re-election prospects through such manipulations.

Having acknowledged some theoretical underpinnings of PBCs and the relevance of context conditionality in the empirical research on PBCs, this chapter's main objectives are, first, to provide a comprehensive review of the empirical literature, and, second, to revisit the validity of some of the key conditional factors using an extension of the Veiga et al. (2017) dataset, which is based on the IMF's Government Financial Statistics (GFS) fiscal data.[2] To clarify at the outset, however, since there is a vast amount of works accumulated in the literature, our aim is not to be exhaustive; rather we attempt to give some structure to the past papers in our review. We believe that conducting our own empirical analysis helps organize the review on the relevance of some of the key conditioning factors. Additionally, since an increasing number of recent works on PBCs highlight the relevance of personal characteristics of incumbents such as education, gender, age, social class and ethnicity, this chapter also provides the review of this emerging strand of literature, which complements the review of works considering factors such as politico-economic conditions and institutions.

2. Review of conditionality of PBCs

This section reviews various politico-economic and institutional factors that are regarded as key conditions in the literature for the occurrence of PBCs. To organize our review, we first highlight factors that affect incentives of politicians to embark on pre-electoral policy manipulations, and then turn to factors that influence capability of those manipulations to generate additional votes. While they are clearly intertwined, this way of categorizing conditional factors still makes sense because some factors predominantly prompt incumbents to resort to manipulative policies to increase the probability of winning (e.g., the possibility of earning economic rents while in office), whereas other factors rather determine the effectiveness of such policies to be effective (e.g., the presence/absence of informed voters).

[2] Veiga et al. (2017) use a dataset which covers 69 countries from 1975 to 2010. We updated their dataset by utilising recent data from GFS up to 2016.

2.1 Factors affecting incumbents' incentives and ability to act opportunistically

Predictability of the timing of elections and electoral competitiveness

When the election date is known well in advance, incumbent governments have more time and far greater opportunity to manipulate fiscal policy in order to get re-elected, than when there are snap elections, with a short lag between elections being called and being held.[3] The predictability of election timing can thus be seen as a pre-condition for electoral manipulations. This is consistent with various papers' findings that PBCs are more prevalent in election years when focusing on the sub-sample of pre-determined elections, defined as elections held in the last year of a constitutionally fixed term (e.g., Shi and Svensson, 2006; Vergne, 2009; Efthyvoulou, 2012; Veiga et al., 2017).

Arguably, the incentives of politicians to manipulate fiscal policy for re-election purposes may depend on the expected outcome of the upcoming elections both in terms of the probability of winning the election and the potential changes in government ideology. The hypothesis that electoral competitiveness increases the uncertainty over the electoral outcome, and thus affects politicians' incentives to generate PBCs was first introduced by Frey and Schneider (1978a, 1978b). Strong empirical support for this idea has been found both for central (Efthyvoulou, 2012; Eibl and Lynge-Mangueira, 2017) and local governments (Aidt et al., 2011).

Ideology

A number of studies highlight the interactive relationship between opportunistic and partisan cycles in fiscal policies.[4] While opportunism and partisanship are often perceived as

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[3] For example, capital spending needs to go through multiple stages of project appraisal and selection, even before the implementation stage is reached.

[4] The partisan cycle theories (Hibbs, 1977; Alesina, 1987) assert that left-wing and right-wing governments choose different fiscal policies when in office, that reflect the interests and preferences of their class-defined core political constituencies (working class and capital

competing arguments in the literature, the two hypotheses may be, in fact, different sides of the same coin. Specifically, left-wing and right-wing politicians may enact different policies when in office not only because they care about the well-being of certain groups of society, but also because by doing so they can preserve their voters' loyalty and secure favorable electoral outcomes (Persson and Tabellini, 2000). In line with this claim, Frey and Schneider (1978a, 1978b, 1979) develop a theory combining office-seeking and partisan motivations to argue that governments respond to their popularity level when making economic policy decisions. Their model assumes that the incumbent politician employs a 'sacrificing' strategy that differentiates between two states: in the state of popularity surplus, the politician pursues his ideological goals; in the state of popularity deficit, he engages in expansionary fiscal policies, especially as the elections come nearer. Frey and Schneider (1978a, 1978b, 1979) and Schultz (1995) find strong support for this theory when they look at German, UK and US policy tools. On similar lines, Efthyvoulou (2011) shows that external economic constraints imposed on the ability of politicians to ingratiate themselves with partisans (such as globalization and the process of European integration) can strengthen their incentives to engineer PBCs; that is, to behave in a non-partisan manner and pursue (common) election-driven policies that are easy to employ in the short-run.

Larger expectations of a change in government ideology may also trigger opportunistic measures as partisan differences increase the utility loss from losing the election to an opponent with a different ideology (Alesina and Tabellini, 1990). Hence, spending and deficits increase

owners, respectively). The existing empirical evidence strongly supports partisan effects on the size of the government, and moderately supports partisan effects in some specific policy areas; such as, social and welfare spending. In many cases, however, the evidence seems to suggest that partisan governments' resource to these policies, and the emergence of partisan fiscal cycles, depend heavily on their international and domestic politico-economic context (see Clark, 2003; Bove et al., 2017), like in the case of PBCs.

before elections when politicians expect to lose the election, constraining in this way the options of the new elected candidate. Likewise, Persson and Svensson (1989)'s model of strategic debt predicts that a conservative (liberal) government accumulates more (less) debt when it knows it will be succeeded by a liberal (conservative) government, in order to force its successor to spend less (more).

A number of studies also investigate whether government ideology alone (and not the occurrence of partisan fiscal cycles) may affect the size of PBCs. Focusing on American states, Rose (2006) concludes that the partisan composition of American state governments does not significantly affect the magnitude of the PBCs. For Portuguese municipalities, evidence seems to suggest that left-wing mayors generate larger PBCs than right-wing mayors (Veiga and Veiga, 2007).

Constitutional features

A sizeable theoretical and empirical literature deals with constitution-dependent PBCs. Persson and Tabellini have made key contributions to this literature by exploring the role of different electoral rules (majoritarian versus proportional rules in legislative elections) and different forms of government (parliamentary versus presidential regimes) in shaping PBCs.

According to Persson and Tabellini (2000, 2002, 2003), majoritarian systems are associated with stronger individual accountability than proportional systems, where politicians are more collectively accountable. This happens because, under majoritarian systems, the electoral outcome is more sensitive to marginal changes in votes (due to small voting districts and plurality rule) and there is also voting for individual candidates rather than party lists. Thus, elected officials have stronger incentives to please (or at least to appear competent to) their voters in the imminence of elections, resulting in large tax and spending fluctuations around elections. Moreover, the authors stress that, under proportional rules, politicians seek support from larger groups within the electorate, creating stronger incentives to garner votes via broad policy programs, such as welfare spending -- as opposed to majoritarian electoral rules where politicians have stronger incentives to target policies towards particular constituencies. Based on the latter, one should also expect different electoral cycles in the composition of spending (broad versus narrow programs), depending on the electoral rule.

When it comes to the form of government, Persson and Tabellini (2000, 2002, 2003) point out that an important difference between presidential and parliamentary forms of government is the individual versus collective nature of the executive. Presidential regimes are characterized by separate and direct elections for the executive and legislative branches. Hence, while the executive cannot be brought down by the legislature (like in a parliamentary regime), he is directly accountable to the voters. If the strength of PBCs depends on electoral accountability (and checks and balances play a less important role), one should expect stronger electoral cycles under presidential regimes.

Persson and Tabellini (2003) test these predictions using data from 60 countries over the 1960-1998 period. Consistent with the view that majoritarian systems promote accountability while proportional systems promote representation, the authors find that electoral cycles in overall spending and taxes are more pronounced under majoritarian systems, and that election-driven expansions in welfare-state spending are only observable in proportional systems. At the same time, the authors provide evidence of post-electoral effects in overall spending and taxes in presidential countries, and no effects in parliamentary regimes. A possible interpretation of this finding is that, under presidential regimes, the executive has limited ability to pass deliberate fiscal expansions or tax cuts before elections (due to greater separation of powers), but he can postpone unpopular fiscal adjustments until after the elections (due to veto powers).

Chang (2008) provides further support for the existence of electoral rule effects on the composition of spending around elections, in line with Persson and Tabellini's arguments.

Specifically, focusing on OECD countries, the author shows that before elections, incumbents increase social welfare spending under proportional representation, while they raise district-specific spending (including infrastructure investments such as construction and transport spending) under majoritarian rules. On the other, Brender and Drazen (2005) find that constitution-dependent PBCs exist only in new democracies; that is, in the group of countries where the electoral fiscal cycle exists to begin with.

Rent extraction, recandidacy and term limits

Several recent papers propose that the institutional environment is an equally important contextual feature for PBCs, as it can influence politicians' rents of remaining in power. That is, to the extent that institutions leave politicians unconstrained rents that can be extracted in the post-electoral period increase, encouraging politicians to engage in pre-electoral manipulations. For instance, Shi and Svensson (2006), motivated by their own theoretical model, employ cross-country data on government corruption, and find that this institutional outcome helps explain the variation in the size of PBCs between developed and developing countries.

According to rational PBC theories, one would expect incumbents who do not run for re-election to be unwilling to incur the costs of signaling competency and thus, not to behave opportunistically. Using data for Portuguese municipalities, Aidt et al. (2011) find empirical support for this hypothesis. By reducing rents from holding office, term limits may also decrease politicians' incentives to trigger PBCs (Smart and Sturm, 2013). Empirical studies on the impact of term limits on PBCs mainly focus on local and state governments, and most papers conclude that PBCs are lower in jurisdictions with term limit laws (List and Sturm, 2006; Klein and Sakurai, 2015; Padovano and Petrarca, 2014; Lopes da Fonseca, 2016; Veiga and Veiga, forthcoming).

Fiscal rules and other constraints on the executive

Budget balance requirements are likely to constraint policymakers' ability to strategically manipulate fiscal policy for electoral gains. Supportive evidence for the idea that stringent balanced budget rules dampen PBCs is found for American states (Rose, 2006). However, less effective rules, such as the European Stability and Growth Pact, do not seem to withhold policymakers from pursuing expansionary fiscal policies before elections (Mink and de Haan, 2006; Efthyvoulou, 2012). Other institutionalized constraints on the decision-power of executives, e.g. checks and balances between the parts involved in the decision-making process, may also influence PBCs. Eibl and Lynge-Mangueira (2017), using a large panel of countries, conclude that political constraints on incumbents limit their ability to generate PBCs.

2.2 Factors affecting the capacity of opportunistic behavior to yield additional votes

Voter informedness and fiscal policy transparency

Besides government corruption (as mentioned above), Shi and Svensson (2006) also consider the informedness of voters a conditional factor for PBCs. The idea is that, to the extent that voters are less informed and thus less able to distinguish pre-electoral manipulations from politicians' competence, the incumbents benefit more from conducting pre-electoral manipulations. Empirically, using the prevalence of information dissemination (radio, in particular) and the degree of media freedom as a proxy, they find that voter informedness has a significant impact on the occurrence of PBCs.[5] Similarly, Alt and Lassen (2006a, 2006b) and Klomp and de Haan (2013) argue that, besides the ability of the electorate to gather information about economic policy and incumbents' competence, the availability of such information, as

[5] Further, using a panel of 93 democracies, Shelton (2014) finds empirical evidence that media freedom is relevant to mitigate PBCs.

captured by fiscal transparency, can affect the size of PBCs. Consistent with this argument, the authors show that countries with high fiscal transparency are associated with dampened PBCs.

Using a large panel dataset covering around 70 countries and data from 1975 to 2010, Veiga et al. (2017) compare the relative importance of several conditional factors for PBCs, and provide empirical evidence that the degree to which voters are informed about fiscal policy is the most important conditioning factor of PBCs on the budget deficit.[6] Going a step further, they show that what is particularly important is the degree of media freedom, rather than the mere availability of means of information dissemination (including radios, newspapers, TV and access to the internet). In addition, they point out that media freedom is closely associated with fiscal transparency, implying the importance of the latter as a conditional factor for PBCs.[7] At the local level, there is also evidence that media freedom reduces electoral manipulations (Akhmedov and Zhuravskaya, 2004) and that the disclosure of governments' balance sheets before elections mitigates PBCs, particularly in areas with relatively many newspapers readers (Repetto, forthcoming).

Maturity of democracies

Another factor that affects the effectiveness of electoral manipulations is the maturity of democracies. Brender and Drazen (2005) show that PBCs are more prominent in new, rather than in established democracies. The idea is that, if voters are relatively inexperienced with electoral manipulations in the early days of democracies, opportunistic measures have greater

[6] They compare the importance of voter informedness with other conditional elements, such as the predictability of the timing of elections, electoral competitiveness, electoral rules and the maturity of democracies.

[7] To elaborate, Veiga et al. (2017) do not directly include fiscal transparency in their formal comparison of different conditions for PBCs due to the limited availability of its proxy. However, they show that correlation between media freedom and fiscal transparency is rather high.

chances of improving incumbents' re-election chances. In line with the view that budget deficits are little affected during elections under established democracies, some authors examine the existence of electoral effects in the composition of fiscal policy. Katsimi and Sarantides (2012), focusing on established democracies (19 OECD countries) over the 1972-1999 period, show that before elections, current expenditures increase at the expense of capital expenditures (so that total spending is kept constant) and deficits also remain unaffected, though direct taxes fall. The relationship between elections and change in the composition of government spending is studied by Brender and Drazen (2013) in a panel of 71 democracies from 1972 to 2009. Their results suggest that under established democracies (but not in new democracies), election years are associated with larger changes in expenditure composition than in other years.[8,9]

Party age might be the underlying mechanism for the existence of more pronounced PBCs in younger democracies. Hanusch and Keefer (2014) argue that older parties are better at providing voters with information about the policy positions and competence of candidates and, therefore, more likely to mitigate information asymmetries that trigger electoral measures.

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[8] A few papers test for PBC on the composition of spending on panels of developing countries, including Schuknecht (2000), Block (2002), and Vergne (2009). They focus on the choice between capital and current expenditures. According to Schuknecht (2000) public works are more easily used to woo the electorate in developing countries than current expenditures that are frequently based on long term commitments. Block (2002) argues that the asymmetry of information regarding competence is more plausible in developing countries, and that the share of capital expenditures in total expenditures decreases during the election year. Vergne (2009) reports evidence of a shift from current expenditures to capital expenditures in pre-election periods

[9] Moreover, a number of papers investigate the electoral effects of fiscal policy composition by looking at data for state and local elections, instead of concentrating solely on national elections (e.g. Blais and Nadeau, 1992; Khemani, 2004; Veiga and Veiga, 2007; Drazen and Eslava, 2010).

Using a large panel of countries, they show that younger parties are more likely to rely on increases in expenditures before elections to enhance electoral support.

Salience of non-economic voting

Efthyvoulou (2012) poses the argument that economic matters are not always at the top of the public's political agenda and voters' evaluation of the government performance may also depend on non-economic matters for which the government is responsible (such as fighting terrorism and crime). As a result, the level of non-economic voting may also affect both the incentives and the capacity of politicians to engineer PBCs. In line with this argument, the author shows that the higher the weight voters assign to non-economic issues prior to elections, the weaker PBCs are, since fewer voters can be influenced by an electoral boom in targeted welfare spending. In a similar vein, Bove et al. (2017) show that politicians may use the tradeoff between social and military expenditure to advance their electoral aims. In particular, the authors find that politicians tend to sacrifice military spending (which is highly associated with non-economic priorities) at election times in order to enable increases in social spending, with more direct and immediate impact on electoral outcomes. This so-called "butter-vs-guns tradeoff", however, is smaller for countries involved in conflicts, where national security plays an important role in voter choice.

3. Empirical analysis on the relevance of key conditional factors

The above review highlights a number of key conditional factors relevant for the creation of PBCs, both in terms of an election-driven increase in budget cycles, and a change in fiscal policy composition. In this section, we revisit the roles of those factors by conducting an empirical analysis of our own. The starting point of analysis is the study by Veiga et al. (2017), which investigates several conditioning factors of PBCs simultaneously, to compare the relative importance of different factors. Here, instead, we investigate the roles of different factors one by one. By doing this, our aim is to give substance to the review of context conditionality presented above. It must be stressed, however, that due to data limitations, we cannot explore the importance of the full set of conditioning factors discussed in our review. Thus, we cannot exclude the possibility that some other factors matter too for a sub-group of our sampled countries, or for countries not included in our analysis.

3.1 The dataset and empirical methodology

The empirical analysis uses an extension of the dataset used in Veiga et al. (2017). For brevity, a detailed explanation of each variable and their data sources are left in the Appendix. The dataset only considers democratic regimes, which are defined as the value of *Polity2* from the *Polity IV* database being positive (the variable ranges from +10, strongly democratic to -10, strongly autocratic). We consider presidential elections for presidential systems, and legislative elections for parliamentary systems and other systems where the president is not elected by universal suffrage. We create an election-year dummy which takes the value of one in the election year and zero in other years. Fiscal variables, all expressed as percentages of GDP, consist of central governments' total expenditure, total revenue and budget deficits (given as total expenditure minus revenue), and the key expenditure components of current and capital spending.[10] Conditional factors highlighted are: 1) the predictability of the timing of

[10] While the fiscal dataset is based on the IMF's GFS, some clarification is in order. In particular, because fiscal variables in GFS underwent key methodological changes over the years, most notably a change in the accounting method from cash to accrual systems (corresponding to the transition from GFS Manual 1986 to 2001), it is important to pay attention to the comparability of the data over the sample period. This is particularly important when one wants to consider spending components following economic classifications (as we do here). For instance, the accrual concept of `consumption of fixed capital', which represents a decline in the value of government's fixed assets due to physical deterioration, obsolescence, or accidental damages, does not exist in the GFSM1986 cash system. The indication is that

elections, 2) electoral competitiveness, 3) electoral rules, 4) private gains for incumbents, 5) constraints on executives, 6) voter informedness, and 7) maturity of democracies, where the factors 1) to 5) are categorized above as those affecting incumbents' incentives and ability to act opportunistically, and 6) and 7) are as those affecting the capacity of opportunistic behavior to yield additional votes. All the estimations include the following set of control variables which may affect the state of public finances: log of real GDP per capita, output gap as a logarithmic difference between real GDP and its trend (obtained using the Hodrick-Prescott filter), percentages of the population below 15 and above 65-years old, and year dummy variables.

The dataset covers the 1975-2016 period. Given that our panel data model (shown below) is dynamic, to mitigate the endogeneity problem caused by the presence of lagged dependent variable which is correlated with country fixed effects, we only include countries with at least 10 annual observations in the sample. This criterion leaves 78 developed and developing countries which are democratic and for which data on all the fiscal variables mentioned above are available. The reasonably high availability of observations per country (24 on average) helps justify the use of fixed effects (FE) model, as opposed to, say difference/system GMM approach. To mitigate an endogeneity problem due to simultaneity in FE estimations, all control variables were lagged one period. The descriptive statistics are presented in the Appendix.

The empirical specification used to examine the election-year effect on fiscal variables can be summarized as follows:

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capital spending concepts under the cash and accrual systems are not comparable as they are, because `depreciation' of capital is not deducted from capital spending under the former system. Acknowledging this, throughout the sample period, we use a capital spending variable which includes consumption of fixed capital, while using a current spending variable which excludes it.

$$f_{it} = \sum_{j=1}^{p} \alpha_j f_{i,t-j} + \beta ELEC_{it} + \boldsymbol{X'}_{it}\boldsymbol{\delta} + y_t + \mu_i + \varepsilon_{it} \quad i = 1, \dots, N \quad t = 1, \dots, T_i \ (1)$$

where f_{it} is a fiscal variable in country i in year t and p is its number of lags included in the model (p is set to be one below), $ELEC_{it}$ is an election dummy variable, X_{it} is a vector of control variables specified above, y_t are year dummies, μ_i is the effect of country i, and ε_{it} is the error term. α, β and δ are parameters or vectors of parameters to be estimated. Next, to revisit the relevance of different conditional factors in the creation of PBCs, we extend equation (1) by including interaction terms between the election year dummy and different conditional factors:

$$f_{it} = \sum_{j=1}^{p} \alpha_j f_{i,t-j} + \beta_1 (ELEC_{it} * D_{it}) + \beta_2 \big(ELEC_{it} * (1 - D_{it})\big) + \emptyset D_{it} + \boldsymbol{X'}_{it}\boldsymbol{\delta} +$$

$$y_t + \mu_i + \varepsilon_{it} \quad (2)$$

where D_{it} is a dummy variable that proxies seven specific conditions mentioned. These are: 1) predetermined election, which assumes the value of one in each year of a constitutionally fixed term when the election is held in the last year of the term, and equals zero otherwise; 2) close election, which takes one in each year during the term (both for predetermined and non-predetermined elections) when the difference in vote shares between the major government party and opposition parties (or candidates in presidential elections) in the previous election is smaller than 10 percentage points, and 0 otherwise;[11] 3) proportional electoral rule, which takes the value of one when democracies are characterized by a proportional electoral system; 4) private benefits for politicians, which assumes the value of one when politicians' rents are above the sample median; 5) constraints on the executive, which equals one when institutionalized constraints on the decision-making powers of chief executives are higher than

[11] Since politicians engage in fiscal policy manipulations in the immediate period before the elections (based on the information that they have at that time), a better way to capture the closeness of the upcoming elections is to employ pre-electoral poll data on voting intention (see Efthyvoulou, 2012). However, information on public opinion trends can only be obtained for a limited number of countries and years in our sample.

the sample median; 6) media freedom, which takes the value of one if the degree of media freedom is higher than the sample median; finally, 7) established democracy, which takes the value of one after ten years have passed and four democratic elections have taken place after it became a democracy, and 0 otherwise.[12] In what follows, equation (2) is estimated for different attributes, D_{it}, and for different fiscal variables, f_{it}. Our interest is to compare the parameters estimated, β_1 and β_2, and make an inference as to conditional factors for PBCs.

3.2 Empirical results

Table 1 summarizes the estimation results for different fiscal variables and different conditional factors. Panel A estimates equation (1) for all democracies, without conditioning on the factors listed above. The coefficient on budget deficits (percentage of GDP) is positive and significant, implying an election-year increase in deficits in general. The coefficient of 0.40 indicates that deficits are higher by 0.40 percentage points in election years than non-

[12] Some supplementary information for the conditional dummies is in order. Regarding the electoral rule, it is often the case that proportional and majoritarian systems coexist within a country. To deal with this, the dummy for proportional electoral system takes the value of 1 in a given year when a democracy is characterized by the "pure" proportional system (i.e., not employing the majoritarian system even as a part). Thus, when the dummy variable takes the value of zero, it captures the democracy where the proportional system can still be used alongside the majoritarian system. To proxy private gains for politicians we use an adaptation of the institutional index proposed by Shi and Svensson (2006), which is constructed from four indices extracted from the International Country Risk Guide: law and order, corruption, bureaucracy quality, and investment profile. To measure constraints on executives we use, alternatively, the indicator *Xconst* from *Polity* IV (Eibl and Lynge-Mangueira, 2017) and the indicator *checks* from the Database of Political Institutions. The freedom of broadcast (from Freedom House) is used as a proxy for media freedom (see Veiga et al., 2017, for the detailed explanation of how the proxy is constructed). New, as opposed to established, democracy is simply defined as democracy which is not categorized as established democracy.

election years. Regarding what causes this rise in deficits, there is evidence that it is driven by a rise in total spending, particularly a rise in current spending. The sign on capital spending components is negative (though insignificant). This is somewhat in line with Rogoff (1990), who argues that capital expenditure, which often takes long to materialize, may not be as suitable to signal the incumbent policymaker's competence as immediately-observed current spending.

In Panel B, we investigate the relevance of the predictability of the timing of elections in PBCs. The indication of the previous literature is that PBCs are more prominent when the timing of election is predetermined. An election-year rise in deficits is statistically significant only under predetermined elections, although in our sample we cannot reject the hypothesis that the coefficients on predetermined and non-predetermined interactions are significantly different. Again, the rise in deficits under predetermined elections is driven by a rise in spending, particularly current spending. Next, Panel C examines the relevance of electoral competitiveness. The result suggests that this factor is also a relevant conditional factor for PBCs. In particular, the coefficient on deficits is larger when elections are close (0.52), corresponding to a rise in total and current spending. Finally, Panel D examines the role of electoral rules. As mentioned above, one key prediction from the literature on constitution-dependent PBCs is that majoritarian electoral systems are more susceptible to PBCs. Empirical results confirm this prediction: there is strong evidence of an increase in the deficit at electoral years under majoritarian electoral rules, and Wald tests allow for the rejection of equal coefficients. The literature also suggests that different electoral rules induce electoral cycles in different components of public spending. Specifically, proportional electoral rules induce politicians to seek support among broad coalitions of voters, while majoritarian electoral rules instead induce them to target spending towards narrow (geographical) groups of voters. One implication is thus that, under proportional rules, infrastructure spending, which is often regionspecific and capital-intensive, may not be used to generate votes. This, indeed, is consistent with the result that the coefficient on capital spending under proportional rules is significantly lower than the one under majoritarian rules (the p-value of the Wald test is 0.06).

Table 1: Conditional factors in PBCs: timing, competitiveness and electoral rules

Variables	(1) Deficits	(2) Total spend	(3) Cur spend	(4) Cap spend	(5) Total rev
A: All democracies					
elec	0.404***	0.313*	0.331**	-0.007	-0.085
	(3.004)	(1.971)	(2.070)	(-0.203)	(-0.684)
B: Timing of elections					
pred_elec	0.514***	0.340*	0.405**	-0.046	-0.162
	(3.444)	(1.700)	(2.000)	(-1.073)	(-0.917)
nonpred_elec	0.105	0.234	0.120	0.103	0.111
	(0.437)	(0.767)	(0.412)	(1.602)	(0.681)
Wald, p-value	0.129	0.783	0.444	0.0553	0.316
C: Electoral competitiveness					
close_elec	0.519***	0.485*	0.571**	-0.070	-0.037
	(2.928)	(1.897)	(2.225)	(-1.400)	(-0.160)
notclose_elec	0.270	0.106	0.033	0.076	-0.139
	(1.469)	(0.563)	(0.180)	(1.323)	(-0.959)
Wald, p-value	0.305	0.262	0.110	0.0644	0.748
D: Electoral rule					
prop_elec	0.275	0.386	0.492	-0.087*	0.159
	(1.533)	(1.150)	(1.452)	(-1.853)	(0.663)
maj_elec	0.491**	0.225*	0.150	0.078	-0.296*
	(2.630)	(1.787)	(1.346)	(1.423)	(-1.798)
Wald, p-value	0.0572	0.642	0.373	0.0687	0.368
Observations	1,863	1,863	1,863	1,863	1,863
Countries	78	78	78	78	78

Notes: Panel A estimates equation (1). Panels B to D estimate equation (2). Only coefficients on interaction terms are shown for brevity. Wald test tests the equality of coefficients across the interaction terms. Robust t-statistics in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

The level of private benefits obtained while in office is also likely to condition the occurrence of PBCs. Table 2 presents evidence supporting this hypothesis. For higher levels of rents, proxied by the institutional index (Shi and Svensson, 2006), there is evidence of an increase in the deficit, total expenditures and current expenditures during electoral years. Additionally, results suggest that, when private rents are low, capital expenditures are reduced at electoral periods. The hypothesis of equal coefficients for high and low levels of the institutional index in election years can be rejected for the deficit and capital expenditures. Note that the number of observations is smaller than in Table 1 because data for the institutional index, obtained from the ICRG, is only available since 1984.

Table 2: Conditional factors in PBCs: private gains

Variables	(1) Deficits	(2) Total spend	(3) Cur spend	(4) Cap spend	(5) Total rev
Institutional index					
Rents_high_elec	0.596***	0.493*	0.468*	0.044	-0.097
	(2.788)	(1.956)	(1.848)	(0.756)	(-0.488)
Rents_low_elec	0.132	0.080	0.153	-0.073**	-0.038
	(1.089)	(0.456)	(0.870)	(-2.469)	(-0.286)
Wald, p-value	0.0533	0.169	0.290	0.0709	0.795
Observations	1,771	1,771	1,771	1,771	1,771
Countries	73	73	73	73	73

Notes: Estimates of equation (2). Only coefficients on interaction terms are shown for brevity. Wald test tests the equality of coefficients across the interaction terms. Robust t-statistics in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Two variables are used to proxy constraints on executives that are likely to influence PBCs. First, we use the indicator *Xconst* obtained from Polity IV that measures the extent of institutionalized constraints on the decision-making powers of chief executives. Second, we use the indicator *checks and balances* from the Database of Political Institutions (DPI), which increases, e.g., if the chief executive is competitively elected or when the opposition controls the legislature. As can be seen from Table 3, regardless of the proxies used, there is strong evidence that PBCs occur only at lower levels of executive constraints. These results are in line with those obtained by Eibl and Lynge-Mangueira (2017).

Table 3: Relevance of conditional factors in PBCs: constraints on executives

Variables	(1) Deficits	(2) Total spend	(3) Cur spend	(4) Cap spend	(5) Total rev
A: Constraint on chief executive					
Const_low_elec	0.970***	0.765*	0.740*	0.065	-0.268
	(3.113)	(1.760)	(1.675)	(0.620)	(-0.662)
Const_high_elec	0.199	0.149	0.181	-0.033	-0.023
	(1.632)	(1.060)	(1.332)	(-1.126)	(-0.273)
Wald, p-value	0.0187	0.183	0.227	0.371	0.554
B: Checks and balances					
Checks_low_elec	0.507***	0.476**	0.495**	-0.003	-0.024
	(3.494)	(2.444)	(2.507)	(-0.066)	(-0.172)
Checks_high_elec	-0.058	-0.109	-0.087	-0.028	-0.021
	(-0.283)	(-0.398)	(-0.330)	(-0.841)	(-0.156)
Wald, p-value	0.0286	0.0894	0.0828	0.666	0.987
Observations	1,863	1,863	1,863	1,863	1,863
Countries	78	78	78	78	78

Notes: Panels A and B estimate equation (2). Only coefficients on interaction terms are shown for brevity. Wald test tests the equality of coefficients across the interaction terms. Robust t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 4 turns to the remaining conditions. Previous literature has shown that voters' informedness reduces PBCs. To proxy for the percentage of uniformed voters, Shi and Svensson (2006) use an index of media diffusion that considers the prevalence of information dissemination (radio, in particular) and the degree of media freedom. Since data on the number of radios per capita from the CNTS database is only available until 1999, we do not present estimates using the index of media diffusion but we focus instead on media freedom. Veiga et al. (2017) conclude that the prevalence of information devices itself is not a key driver of PBCs; the degree of media freedom is critical. Results reported in panel A of Table 4 strongly support this idea. Only at lower levels (below the median) of the overall Freedom of the Press scores from Freedom House, there is evidence of electoral manipulations of deficits, total and current spending. The Wald test for the equality of coefficients for low and high levels of media freedom allows us to reject the null hypothesis of equal coefficients. Finally, Panel B examines the role of maturity of democracies. Indeed, as emphasized by Brender and Drazen (2005), the rise in deficits is observed particularly under new democracies, rather than established democracies.

Table 4: Relevance of conditional factors in PBCs: voters' informedness

Variables	(1) Deficits	(2) Total spend	(3) Cur spend	(4) Cap spend	(5) Total rev
A: Media freedom					
Media_low_elec	0.613***	0.652**	0.649**	0.030	0.028
	(2.867)	(2.219)	(2.206)	(0.461)	(0.119)
Media_high_elec	0.196	-0.007	0.033	-0.045	-0.179
	(1.535)	(-0.045)	(0.214)	(-1.442)	(-1.650)
Wald, p-value	0.0794	0.0660	0.0803	0.299	0.445
Observations	1,854	1,854	1,854	1,854	1,854
Countries	78	78	78	78	78
B: Maturity of democracies					
new_elec	0.700***	0.416	0.527	-0.083	-0.283
	(2.985)	(1.280)	(1.575)	(-1.441)	(-0.887)
estab_elec	0.203	0.243	0.197	0.044	0.049
	(1.440)	(1.508)	(1.343)	(1.011)	(0.462)
Wald, p-value	0.0572	0.642	0.373	0.0687	0.368
Observations	1,863	1,863	1,863	1,863	1,863
Countries	78	78	78	78	78

Notes: Panels A and B estimate equation (2). Only coefficients on interaction terms are shown for brevity. Wald test tests the equality of coefficients across the interaction terms. Robust t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1

4. Further review of conditionality of PBCs: incumbents' characteristics

Recently, interest on how political leaders' characteristics affect their policy choices has increased. Following this literature, this section focuses on the conditionality of PBCs based on incumbents' characteristics, rather than on politico-economic factors considered above. Several studies highlight that politicians' preferences depend on their personal traits and, therefore, voters with similar traits are favored by the adopted policies. Among these attributes, education (Besley et al., 2011; Martínez-Bravo, 2017), gender (Chattopadhyay and Duflo, 2004; Svaleryd, 2009; Bhalotra and Clots-Figueras, 2014), age (Alesina et al., 2015), social class and ethnicity (Carnes and Lupu, 2015; Pande, 2003) have received particular attention in the literature. In this sub-section, we focus on incumbents' personal traits that may change their incentives and ability to engender PBCs.

PBCs may be contingent on incumbents' age for several reasons. Younger politicians may care more about career prospects, may have a lower discount rate, and be more energetic and productive at work. Using data for Italian municipalities, Alesina et al. (forthcoming) provide empirical support for the first hypothesis. Their results suggest that younger mayors are more likely to strategically increase investment and attract more transfers from the central government before elections because of stronger career concerns.

Several papers find that gender has an effect on policy decisions (Chattopadhyay and Duflo, 2004; Svaleryd, 2009; Bhalotra and Clots-Figueras, 2014) and corruption levels (Swamy et al., 2001; Dollar et al., 2001). Focusing on Brazilian municipalities, Brollo and Troiano (2016) conclude that female mayors are less likely to be involved in administrative irregularities and to hire temporary public employees during electoral periods. They also receive fewer campaign contributions than men, which reduces the influence of private interests, namely in terms of allocation of government contracts.

Finally, belonging to a political dynasty, a family in which several members have had elected offices, is also likely to condition public policies. Studies have shown that dynastic leaders enjoy an electoral advantage, which facilitates the enforcement of their preferred policy agenda and contributes to dynastic persistence (Dal Bó et al., 2009; Feinstein, 2010; Querubin, 2016; Rossi, 2017). Additionally, dynastic leaders receive greater returns from holding office, which gives them a higher incentive to remain in office. Focusing on Italian municipalities, Daniele and Vertier (2016) show that political power is persistent and that dynastic mayors, who are eligible to run for re-election, are more likely to increase spending, particularly capital spending, in pre-electoral periods.

5. Concluding remarks

In this chapter we review the vast literature on political budget cycles (PBCs), focusing on studies that analyze the conditionality of opportunistic effects. To complement the review, we also investigate the electoral effects on central governments' deficit, expenditure and revenue series, under various political arrangements, on a large panel of countries covering 78 countries and 42 years of data (1975 to 2016).

Empirical results confirm the consensus from the previous literature that budget cycles are not universal. Specifically, an election-year increase in budget deficits is more likely to occur under certain politico-institutional circumstances, including predetermined elections, close (disputed) elections, majoritarian electoral rules, larger private benefits from holding office, weak constraints on executives, a high proportion of uninformed voters, and new democracies. Furthermore, in line with the literature, we show that the nature of electoral cycles differs depending on the fiscal policy component examined. For instance, we often observe that an election-year increase in budget deficits is driven by current, rather than capital spending. However, when electoral rules are considered as the conditioning factor, the evidence seems to suggest that, under majoritarian electoral rules, capital spending is the main tool used by politicians to generate PBCs.

Recently, a substantial number of studies have explored the effects of personal characteristics of leaders on public policy. This chapter also reviewed this emerging strand of literature, which sheds light on the impact of gender, age, and social class of incumbents on the occurrence of PBCs. This is a promising line of research that is likely to expand as more data becomes available, most likely at the local government level. Regarding how the literature on PBCs may evolve in the future, it is also expected that insights from behavioral public policy would enrich the analysis further. Another interesting avenue for research is to focus on voters' informedness, and investigate the effects of access to the internet, and particularly social media, on electoral outcomes and PBCs.

References

Aidt, S. Toke, Veiga, Francisco José, and Veiga, Linda Gonçalves. "Election results and opportunistic policies: A new test of the rational political business cycle model." *Public Choice* 148 (2011): 21-44.

Akhmed, Akhmedov, and Zhuravskaya, Ekaterina. "Opportunistic political cycles: Test in a young democracy setting." *Quarterly Journal of Economics* 119, no. 4 (2004): 1301-38.

Alesina, Alberto. "Macroeconomic Policy in a Two-Party System as a Repeated Game." *Quarterly Journal of Economics* 102 (1987): 651-678.

Alesina, Alberto, Roubini, Nouriel, and Cohen, Gerald D. *Political cycles and the macroeconomy*. Cambridge: The MIT Press, 1997.

Alesina, Alberto, and Tabellini, Guido. "A positive theory of fiscal deficits and government debt." *Review of Economic Studies* 57 (1990): 403–414.

Alesina, Alberto, Cassidy, Traviss, and Troiano, Ugo. (forthcoming). "Old and Young politicians." *Economica*.

Alt, James E., and Lassen, David Dreyer. "Transparency, political polarization and political budget cycles in OECD countries." *American Journal of Political Science* 50, no. 3 (2006a): 530-550.

Alt, James E., and Lassen, David Dreyer. "Fiscal transparency, political parties and debt in OECD countries." *European Economic Review* 50 (2006b): 1403–1439.

Besley, Timothy, Montalvo, Jose G., Reynal-Querol, Marta. "Do educated leaders matter?" *Economic Journal* 121, no. 554 (2011): 205–227.

Bhalotra, Sonia, and Clots-Figueras, Irma. "Health and the political agency of women." *American Economic Journal: Economic Policy* 6, no. 2 (2014): 164–197.

Blais, André, and Nadeau, Richard. "The electoral budget cycle." *Public Choice* 74 (1992): 389–403.

Block, Steven A. "Political business cycles, democratization, and economic reform: The case of Africa." *Journal of Development Economics* 67, no. 1 (2002): 205–228.

Bove, Vicenzo, Efthyvoulou, Georgios, and Navas, Antonio. "Political cycles in public expenditure: butter vs guns." *Journal of Comparative Economics* 45, no. 3 (2017): 582–604.

Brender, Adi, and Drazen, Allan. "Political budget cycles in new versus established democracies." *Journal of Monetary Economics* 52 (2005): 1271–1295.

Brender, Adi, and Drazen, Allan. "Elections, leaders, and the composition of government spending." *Journal of Public Economics* 93 (2013): 18-31.

Brollo, Fernanda, and Troiano, Ugo. "What happens when a woman wins an election? Evidence from close races in Brazil." *Journal of Development Economics* 122 (2016): 28-45.

Carnes, Nicholas, and Lupu, Noam. “Rethinking the comparative perspective on class and representation: Evidence from Latin America.” *American Journal of Political Science* 59, no. 1 (2015): 1–18.

Chang, Eric C. C. “Electoral incentives and budgetary Spending: Rethinking the role of political institutions.” *Journal of Politics* 70, no. 4 (2008): 1086–1097.

Chattopadhyay, Raghabendra, and Duflo, Esther. “Women as policy makers: evidence from a randomized policy experiment in India.” *Econometrica* 72, no. 5 (2004): 1409-1443.

Clark, William Roberts. *Capitalism, not globalism: Capital mobility, central bank independence and the political control of the economy*. Ann Arbor: University of Michigan Press, 2003.

Dal Bó, Ernesto, Dal Bó, Pedro, and Snyder, Jason. “Political dynasties.” *Review of Economic Studies* 76, no. 1 (2009): 115–142.

Daniele, Gianmarco, and Vertier, Paul (2016). “Dynasties and the Political Budget Cycle.” *CESIFO Working Paper* 6231.

Dollar, David, Fisman, Raymond, and Gatti, Roberta. “Are women really the fairer sex? Corruption and women in government.” *Journal of Economic Behavior and Organization* 46 (2001): 423–429.

Drazen, Allan , and Eslava, Marcela. “Electoral manipulation via voter-friendly spending: theory and evidence.” *Journal of Development Economics* 92, no. 1 (2010): 39–52.

Dubois, Eric. “Political Business Cycles 40 Years after Nordhaus.” *Public Choice* 166, no. 1-2 (2016): 235-259.

Efthyvoulou, Georgios. “Political cycles under external economic constraints: Evidence from Cyprus.” *Journal of Economics and Business* 63, no. 6 (2011): 638–662.

Efthyvoulou, Georgios. “Political budget cycles in the European Union and the impact of political pressures.” *Public Choice* 153, no. 3 (2012): 295–327.

Eibl, Ferdinand, and Lynge-Mangueira, Halfdan. “Constraints, competition, and competitiveness: explaining the non-linear effect of democratization on political budget cycles.” *European Political Science Review* 9, no. 4 (2017): 629-656.

Feinstein, Brian D. “The dynasty advantage: Family ties in congressional elections.” *Legislative Studies Quarterly* 35, no. 4 (2010): 571–598.

Franzese, Robert J. “Electoral and partisan cycles in economic policy and outcomes.” *Annual Review of Political Science* 5 (2002): 369–421.

Frey, Bruno S., and Schneider, Friedrich. “An empirical study of politico-economic interaction in the United States.” *Review of Economics and Statistics* 60 (1978a): 174–183.

Frey, Bruno S., and Schneider, Friedrich. “A politico-economic model of the United Kingdom.” *Economic Journal* 88 (1978b): 243–253.

Frey, Bruno S., and Schneider, Friedrich. “An econometric model with an endogenous government sector.” *Public Choice* 34 (1979): 29–43.

Hanusch, Marek, and Keefer, Philip. “Younger parties, bigger spenders? Party age and political budget cycles.” *European Economic Review* 72 (2014): 1-18.

Hibbs, Douglas. “Political parties and macroeconomic policy.” *American Political Science Review* 71, no. 4 (1977): 1467-87.

Katsimi, Margarita, and Sarantides, Vassilis. “Do elections affect the composition of fiscal policy in developed, established democracies?” *Public Choice* 151 (2012): 325-362.

Khemani, Stuti. “Political cycles in a developing economy: effect of elections in Indian States.” *Journal of Development Economics* 73 (2004): 125-154.

Klein, Fabio Alvim, and Sakurai, Sergio Naruhiko. “Term Limits and Political Budget Cycles at the Local Level: Evidence from a Young Democracy.” *European Journal of Political Economy* 37 (2015): 21-36.

Klomp, Jeroen, and de Haan, Jakob. “Do political budget cycles really exist?” *Applied Economics* 45 (2013): 329–341.

List, John A., and Sturm, Daniel M. “How Elections Matter: Theory and Evidence from Environmental Policy.” *Quarterly Journal of Economics* 121, no. 4 (2006): 1249-1281.

Lopes da Fonseca, Mariana. “Candid Lame Ducks.” *CESifo Working Paper* 5773, 2016.

Martinez-Bravo, Monica. “The local political economy effects of school construction in Indonesia.” *American Economic Journal: Applied Economics* 9, no. 2 (2017): 256-89.

Mink, Mark, and de Hann, Jacob. “Are there political budget cycles in the Euro Area?” *European Union Politics* 7, no. 2 (2006): 191-211.

Nordhaus, William. “The political business cycle.” *Review of Economic Studies* 42 (1975): 169–190.

Padovano, Fabio, and Petrarca, Ilaria. “Are the Responsibility and Yardstick Competition Hypothesis Mutually Consistent?” *European Journal of Political Economy* 34 (2014): 459-477.

Pande, Rohini. “Can mandated political representation increase policy influence for disadvantaged minorities? Theory and evidence from India.” *American Economic Review* 93, no. 4 (2003): 1132–1151.

Persson, Torsten, and Svensson, Lars. “Why a stubborn conservative would run a deficit: policy with time inconsistent preferences?” *Quarterly Journal of Economics* 104 (1989): 325–346.

Persson, Torsten, and Tabellini, Guido. *Political economics: explaining economic policy*. Cambridge: MIT Press, 2000.

Persson, Torsten, and Tabellini, Guido. “Do electoral cycles differ across political systems?” *IGIER Working Paper* 232, Bocconi University, 2002.

Persson, Torsten, and Tabellini, Guido. *The economic effect of constitutions: what do the data say*. Cambridge: MIT Press, 2003.

Querubin, Pablo. “Family and politics: Dynastic incumbency advantage in the Philippines.” *Quarterly Journal of Political Science* 11, no. 2 (2016): 151-181.

Repetto, Luca. “Political budget cycles with informed voters: Evidence from Italy.” *Economic Journal* (forthcoming).

Rogoff, Kenneth. “Equilibrium political budget cycles.” *American Economic Review* 80 (1990): 21–36.

Rogoff, Kenneth, and Sibert, Anne. “Elections and macroeconomic policy cycles.” *Review of Economic Studies* 55 (1988): 1–16.

Rose, Shanna. “Do fiscal rules dampen the political business cycle?” *Public Choice* 128 (2006): *407-31.*

Rossi, Martín A. “The self-perpetuation of political power.” *Economic Journal* 127, no. 605 (2017): 455-473.

Schuknecht, Ludger. “Fiscal policy cycles and public expenditure in developing countries.” *Public Choice* 102, no. 1-2 (2000): 115-130.

Schultz, Kenneth A. “The politics of the political business cycle.” *British Journal of Political Science* 25 (1995): 79–99.

Shelton, Cameron A. “Legislative budget cycles.” *Public Choice* 159 (2014): 251-275.

Shi, Min, and Svensson, Jakob (2006). “Political budget cycles: do they differ across countries and why?” *Journal of Public Economics* 90: 1367–1389.

Smart, Michael, and Sturm, Daniel M. “Term Limits and Electoral Accountability.” *Journal of Public Economics* 107 (2013): 93-102.

Svaleryd, Helena. “Women’s representation and public spending.” *European Journal of Political Economy* 25, no. 2 (2009): 186-198.

Swamy, Anand, Knack, Stephen, Lee, Young, and Azfar, Omar. “Gender and corruption.” *Journal of Development Economics* 64 (2001): 25–55.

Veiga, Francisco José, Veiga, Linda Gonçalves, and Morozumi, Atsuyoshi. "Political budget cycles and media freedom." *Electoral Studies* 45 (2017): 88-99.

Veiga, Linda Gonçalves, and Veiga, Francisco José. "Political business cycles at the municipal level." *Public Choice* 131 (2007): 45-64.

Veiga, Linda Gonçalves, and Veiga, Francisco José. "The Effects of Electoral Incentives on Fiscal Policy: Evidence from a Legislative Change at the Local Government Level." *Journal of Law, Economics & Organization* 35 (forthcoming). DOI: 10.1093/jleo/ewy027

Vergne, Clément. "Democracy, elections and allocation of public expenditures in developing countries." *European Journal of Political Economy* 25 (2009): 63-77.

Appendix: Descriptive statistics

Variable	Obs.	Mean	Std. Dev.	Min.	Max.	Description and Source
Central Government Expenditures and Revenues (source: GFS – IMF)						
CGdeficit_gdp	1,863	2.01	3.80	-27.26	32.04	Budget deficit (%GDP)
CG1_gdp	1,863	26.86	10.97	4.98	168.26	Total revenue (%GDP)
CGexpenditure_gdp	1,863	28.87	11.19	6.34	148.51	Total expenditure (%GDP)
CG2_gdp	1,863	26.91	11.16	5.03	134.77	Expense (current expenditure, excl. consumption of fixed capital, %GDP)
CG31_gdp	1,863	1.96	1.59	-7.98	14.24	Investment in nonfinancial assets (capital expenditure, incl. consumption of fixed capital, %GDP)
Democracy (sources: Polity IV)						
Established democ.	1,863	0.86	0.35	0.00	1.00	Established democracy - after 10 years have passed and 4 democratic elections have taken place after it became a democracy (Polity IV)
New democracy	1,863	0.14	0.35	0.00	1.00	New democracy = 1 - Estab. democ. (Polity IV)
Institutions (sources: Freedom House. CNTS, and ICRG)						
Media Freedom	1,854	69.75	17.02	17.00	95.00	Freedom of the Press Score (Freedom House)
Institutional Index	1,863	3.81	4.71	-10.27	12.40	Institutional index similar to Shi and Svensson (2006) (ICRG)
Executive constraints	1,863	5.95	6.92	1	7	Xconst (Polity IV)
Checks and balances	1,863	3.84	1.68	1	18	Checks (DPI)
Elections and type of system (source: DPI-World Bank)						
Elec	1,863	0.25	0.43	0.00	1.00	Election year for the government leader (President or Prime Minister)
Pred_elec	1,863	0.18	0.38	0.00	1.00	Election year for the government leader (President or Prime Minister). Only predetermined elections considered.
Prop	1,859	0.80	0.40	0.00	1.00	Proportional representation dummy
Close	1,863	0.58	0.49	0.00	1.00	Dummy for close elections (equals 1 if margin of victory smaller than 10 percentage points)
Macroeconomic and demographic variables (sources: WEO-IMF and WDI-World Bank)						
Log(GDPpc 2010)	1,863	9.31	1.29	6.00	11.63	Log of GDP per capita (constant 2010 US$) – WDI
Trade (% GDP)	1,863	79.80	44.64	9.10	410.17	Trade (% of GDP)
% Pop below 15	1,863	24.39	8.95	12.94	47.95	Population ages 0-14 (% of total) – WDI
% Pop above 65	1,863	10.91	5.29	2.49	26.56	Population ages 65 and above (% of total) – WDI
Output_gap	1,863	0.00	0.02	-0.11	0.12	Log(NY_GDP_MKTP_KD)-log(HPtrend of NY_GDP_MKTP_KD) - WDI

Note: The sample covers all 1,863 observations for which countries were democracies (variable POLITY2 from DPI greater or equal to zero).

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