

# Legislative budget cycles

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**Abstract** Recent literature suggests that electoral budget cycles are a phenomenon of new rather than established democracies. What part of the democratization process explains the amelioration of the political budget cycle? We argue the answer lies (in part) in the development of a strong party system. We extend the classic Rogoff-Siebert model to show that political budget cycles are possible in a legislative context with rational voters. We then demonstrate that the development of a strong party system can restrain political budget cycles in a majoritarian electoral system. Finally, we follow prior work in using vote share volatility as a measure of the institutionalization of the party system. Using newly collected vote-share data for 433 elections for 90 democracies from 1980–2007, we calculate a measure of party institutionalization. We then use this data to demonstrate that institutionalized party systems are associated with mitigated political budget cycles, especially in majoritarian electoral systems.

**Keywords** Political budget cycles · Party institutionalization

**JEL Classification** H6 · D72

*The only way collective responsibility has ever existed, and can exist given our institutions, is through the agency of the political party.*

Mo Fiorina

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## 1 Introduction

The electoral budget cycle refers to a regular decline in government primary surplus during election years. Several recent papers show that it is primarily new democracies which are prone to political budget cycles (Brender and Drazen 2005; Shi and Svensson 2006).

One reason this may occur is because inexperienced voters are less capable of spotting budget shenanigans or have a lesser understanding of their role in disciplining politicians and, as a result, reward incumbents for good pre-electoral economic performance to a greater extent than they punish for fiscal profligacy (Duch 2001; Akhmedov and Zhuravskaya 2004). Brender and Drazen (2008) find that election-year fiscal deficits *decrease* the probability with which executives are re-elected in established democracies but have no significant effect in new democracies. One hypothesis that has received empirical support is that voters in new democracies lack the information they need to discipline incumbents. Akhmedov and Zhuravskaya (2004) find that the magnitude of budget cycles in Russian provinces decreases with government transparency, media freedom, and voter awareness. Alt and Lassen (2006) find that, after controlling for a measure of budget transparency, budget cycles exist even in advanced democracies if the budget process is opaque. Without gainsaying the importance of budget transparency and media freedom (we too find support for them in our empirical work below), we advance an additional channel by which new democracies are more prone to budget cycles.

In contrast to the dominant strain of the literature, which analyzes the principal-agent relationship between the electorate and a unitary government, we suggest that fiscal electioneering is the result of a signaling problem in the legislature and that a strong, institutionalized party system can and does mitigate this problem, accounting for the relative weakness of political budget cycles in mature democracies.<sup>1</sup> After explaining the connection between strong parties and political budget cycles, we develop a model to illustrate the point formally. We then develop a comprehensive panel dataset to measure party institutionalization in 90 democracies from 1980 to 2007, spanning 433 elections. With panel regressions, we show that our measure of the degree of institutionalization of the party system, along with measures of budget transparency and media freedom, can explain electoral budget cycles in new democracies.

While the formal, constitutional institutions of democracy—electoral rules, separation of powers across branches and layers of government, terms of office—do not differ systematically between new and established democracies, many of the informal institutions do. In particular, it is well documented that the recent “third-wave” democracies have much weaker parties, with the result that politics is often more candidate-centered. Mainwaring and Scully (1995) define an institutionalized party system as one in which the elements of party-based competition are sufficiently stable that voters and politicians expect these patterns to continue for the foreseeable future. Among the areas of stability they emphasize, two are particularly relevant to our purposes. In an institutionalized party system, (a) parties have stable policy identities and thus serve as reliable labels for voters and (b) party organizations are independent of the interests of party leaders. Mainwaring (1999: 147) notes that “[w]hen they campaign, politicians choose some combination of cultivating a personal vote,

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<sup>1</sup>Saporiti and Streb (2008) do study a bargaining process between the legislature and the executive, but conceive of the legislature as a unitary actor. There is also empirical work documenting a relationship between political polarization and the magnitude of political budget cycles. But to our knowledge, there are no prior models of the electoral budget cycle explicitly focusing on the game among legislators.

i.e. running on their own image, positions, and clientele networks, and promoting a collective (party) label.” Institutionalized parties transform campaigns from personalized appeals based on the ability to deliver localized benefits into a debate over solutions to policy issues of broad national importance.

In weak party systems, parties have few resources, are weakly professionalized, and often have little centralized control of nominations. Parties come and go regularly and politicians frequently switch parties. Politicians essentially run as individuals. Parties have few if any methods of sanctioning party members; party cohesion in legislative voting thus is infrequent or non-existent. Consequently, parties have weak ties to particular policies and are thus uninformative labels. As a result, voters have weak loyalty to parties and parties lack stable constituencies. Hence, politicians prefer to run on their own images, positions, and abilities to deliver patronage. Mainwaring and Torcal (2005) show that in weak party systems, voters tend to vote for candidates whose personalities they like rather than those who share their preferences over policy issues. Individual politicians building a personal brand cannot credibly commit to delivering policy solutions to broad, national issues. Instead, they can more credibly commit to and take credit for delivering patronage to local supporters. Personal politics thus leads to clientelism as voters judge candidates on their ability to deliver benefits or favors to targeted constituencies rather than advance broad policy issues.

By contrast, a long-lived party with national presence cares about wooing potential voters from *all* districts and about protecting its reputation beyond the horizon of the next election, thus restraining its willingness to exploit the tax base of opposition districts for short-term gain. Under a strong party system, parties have clear, broad policy goals and thus serve as effective information shortcuts for voters who develop strong party identification and loyalty. Strong parties also have greater financial resources and, as a result, are able to effectively discipline individual legislators by withholding perks of office (committee assignments and ministerial appointments) or support for reelection. Financial resources and brand recognition provide parties with an effective cartel over political entry. When political influence is a function of standing within the party, candidates find it advantageous to promote the party label.

Several prior studies stress that variation in the political system contributes to variation in the ability of the electorate to assign responsibility for perceived economic performance (Lewis-Beck 1988; Alesina et al. 1992; Powell and Whitten 1993; Anderson 1995, 2000; Duch and Stevenson 2008). Voters are less likely to punish incumbent parties for poor economic performance when the government is comprised of multiple parties, when there is a second legislative house controlled by the opposition, when the government is a minority, or when there is a lack of voting cohesion among the government parties. In each of these cases, it is easier for any of the parties in government to blame poor performance on the intransigence of others sharing power. In light of these results, it is natural that voters in weak party systems pay closer attention to the more easily attributed delivery of patronage by an individual politician than to the unstable and thus untraceable coalitions associated with broad national policies.<sup>2,3</sup>

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<sup>2</sup>Studies of the election benefits derived from patronage are often clouded by endogeneity bias and unobserved heterogeneity among politicians which rarely are addressed. However, those few studies that do address these issues find that patronage does deliver electoral benefits. Levitt and Snyder (1997), which finds effects in US congressional races, is the seminal paper. More recently, Leitschig and Morrison (2010) have shown similarly positive effects in Brazil.

<sup>3</sup>We are *not* arguing that clientelism flourishes only in a weak party system. Machine politics—client politics organized by strong parties—is a clear counter-example to such an argument. See Kitschelt (2000) for a useful

In sum, by shifting campaigns from personalized, clientele politics to broader contests over national policy, by gathering legislators into larger groups, and by replacing short-lived individuals with long-lived political parties with national reputations, institutionalized parties reduce the incentive for overtaking the common pool for the electoral gain of the individual and thus potentially dampen the political budget cycle. Our models and empirical work are designed to illustrate this process formally and then test this crucial role of the party system.

We first extend the classic model of political budget cycles (Rogoff and Siebert 1988) to a legislative context in the absence of political parties. We do so by assuming that individual legislators facing district level reelection contests are characterized by a parameter symbolizing their ability to deliver effective district-specific public spending. This parameter can be thought of as competence in identifying high quality projects, which magnifies the utility of a given value of spending.<sup>4</sup> We follow Rogoff and Siebert in assuming that this parameter follows a two-period moving average such that the current value, which is not directly observable, is relevant for future performance. Hence voters, keen to reelect if and only if the politician is of high competence, try to infer competence from the observable level of spending and politicians attempt to signal competence by delivering more spending. In the absence of a party system, a minimal winning coalition government is formed as in Milesi-Ferretti et al. (2002) and chooses a level of spending to maximize collective utility including both policy and office-holding motives. We demonstrate the existence of the classic Rogoff-Siebert signaling equilibrium that delivers electoral budget cycles in this baseline legislative framework without parties.

We then show how a strong party system dampens the budget cycle by changing electoral competition from client politics to partisan politics. To do so, we add competition along a uni-dimensional policy space and compare the case of strong parties to that of no parties. Without parties, individual legislators compromise their district's policy preferences to gain inclusion in the governing coalition. Unable to deliver preferred policy, they must signal the electorate with excess spending. Under the strong party system, voters may elect a party perceived as competent despite preferring the other party's platform *ceteris paribus*. Parties thus have an incentive to engage in fiscal electioneering so as to win votes they might otherwise lose based on their platform. But the importance of this motive depends on the electoral

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summary of the role of the party and the variety of links between legislators and distracted voters. Instead, we simply argue that weak parties contribute to political budget cycles via the encouragement of clientelism. To the extent that machine politics is prevalent in our sample, this would tend to bias against our finding results (see Sect. 4) since such polities would have both strong parties and strong budget cycles. It is also important to recognize that clientelism is not simply a function of electoral rules. Kitschelt (2000: 859) puts it nicely: "Contrary to the naïve presumption that single-member districts (SMDs) offer the greatest chances for clientelist linkage building, the later pertains in multimember districts (MMDs), provided that the ballot offers personal preference votes, no vote pooling among candidates on the same list, and no party control over the nominations process."

<sup>4</sup>One could also think of legislators as characterized by their influence within the legislature, which determines the fraction of total spending captured by the district. In such a case it is easy to show that parties, by regularizing influence and making it observable, lead to a damping of the political budget cycle. In the absence of strong parties, the influence of a particular legislator may fluctuate up and down as favors are banked or called in and salient issues and relevant expertise change. But strong parties, which exercise an oligopoly over access to power, typically institute a seniority system whereby influence grows with time of service. As a result, influence is no longer a moving average but a simple and observable function of incumbency. As influence is no longer hidden, there is no longer a need to signal influence spending excessively in election years and thus strong parties dampen the political budget cycle. On closer reading of the literature discussing party institutionalization and quality of governance, we feel that the version presented in this paper better captures the role of party institutionalization; we have thus omitted the formal version of this model of influence.

system. Under a majoritarian system, many districts are sufficiently uncompetitive that signaling is not worth the distortionary cost of the excess taxation.<sup>5</sup> Hence the cycle is damped. On the other hand, under a proportional rule, there is no such limit to signaling because winning marginal votes always translates into additional seats. Thus our legislative model predicts that a strong party system will dampen electoral budget cycles more effectively in countries with majoritarian electoral systems than in those with proportional rule.<sup>6</sup>

Our empirical work supports both of our main hypotheses. First, we show that our measure of party institutionalization helps explain the existence of budget cycles in new democracies. When party institutionalization, media freedom, and budget transparency are all included with an indicator of new democracies, our measure of party institutionalization remains large and significant, explaining slightly more of the electoral budget cycle than budget transparency. Second, we show that the effect exists predominantly in countries with majoritarian electoral systems, with little or no effect in proportional rule systems.

Our paper is organized as follows. Section 2 lays out the series of models of the legislative budget process summarized above. Section 3 describes the data and the estimation procedure. Section 4 presents the results. Section 5 concludes.

## 2 The model

Our model borrows heavily from Milesi-Ferretti et al. (2002) to extend the Rogoff and Siebert (1988) model of political budget cycles to a multi-member legislative context. A country is comprised of  $N$  single-member electoral districts.<sup>7</sup> Each district contains a representative voter with preferences:

$$\begin{aligned} U_{kt} &= \sum_{l=0}^{\infty} \delta^l (u_{k,t+2l} + u_{k,t+2l+1}) \\ u_{kt} &= (1 - \tau_t)^\alpha g_{kt}^{(1-\alpha)} \end{aligned} \quad (1)$$

where  $k$  indexes the district,  $t$  indexes the time period,  $\delta$  is the discount factor, applied only after elections which take place every other period,  $\tau$  is a common tax rate, and  $g_k$  are the public goods for district  $k$ . Individuals are endowed with homogeneous productivity, normalized to 1. Public goods are assumed to be targetable to a single district. The legislature may vary the level of public goods across districts but may not deliver negative values of public goods to any district and is constrained to levy taxes equally on all districts. Representatives are both office- and policy-motivated. Their period utility,  $v_{kt}$ , is that of the representative citizen from their district, times a bonus,  $I$ , for holding office:

$$\begin{aligned} v_{kt} &= (1 - \tau_t)^\alpha g_{kt}^{(1-\alpha)} I_k \\ I_k &= \begin{cases} K > 1 & \text{if in office next period} \\ 1 & \text{else} \end{cases} \end{aligned} \quad (2)$$

<sup>5</sup>There is evidence that parties target spending toward swing districts: Dahlberg and Johansson (2002) find evidence for Sweden and Arulampalam et al. (2009) find evidence for India. Fishback et al. (2003) find that several New Deal programs were strongly directed to swing voters as well as being used for other purposes.

<sup>6</sup>Persson and Tabellini (2003b) find evidence that electoral budget cycles are stronger in majoritarian countries. Notice that this does not contradict our hypothesis which concerns the ability of a strong party system to dampen whatever budget cycle already exists. Indeed, we simultaneously confirm Persson and Tabellini's results in our sample while finding support for our theory (see columns [9] and [10], Table 4).

<sup>7</sup>We discuss multi-member districts and proportional representation in Sect. 2.3.

Once a legislature is elected, one of the representatives is chosen randomly to be Prime Minister.<sup>8</sup> She then makes an offer to any number of colleagues to join the government. If the offers are accepted, the government is formed. If any members refuse, the Prime Minister may make an offer to a new coalition. If offers have been made to all coalitions and a majority government is not formed, then no taxes and no public goods are authorized and all representatives receive a status quo utility of  $-F$ . Trivially, it is in the interest of the Prime Minister to form a minimal winning coalition and any representative will accept an offer to be part of the government.

We assume the Nash bargaining solution for intra-government bargaining. A government thus maximizes the joint utility of its members when choosing the tax rate and district spending levels.<sup>9,10</sup> Governing coalitions may not be changed between elections. We assume that government must satisfy a balanced-budget condition over the two-period electoral cycle. This enables us to focus on the budget cycle rather than the average level of the deficit, which is beyond the scope of this model. As we show formally, increasing marginal disutility of taxation leads a government to smooth the tax rate across periods. However, the demands of reelection require higher spending in the electoral period. As a result, governments run a surplus in non-election periods and a deficit in election periods, resulting in an electoral budget cycle.

It is worth noting at the outset that despite a dynamic utility function for voters and legislators, the model reduces to a static game because there are no state variables that carry information from one election cycle to the next. This comes from two assumptions in particular about which we wish to be upfront. First, policies are resolved immediately: all benefits and costs arrive during the period in which the policy is passed. This rules out legacy effects such as high tax burdens tying the hands of future governments. While this is a poor assumption for some types of spending, we believe it to be a reasonable one for the short-term targeted expenditures that characterize client politics and drive the political budget cycle. Second, we implicitly assume that parties and legislators may costlessly reposition their platforms between elections. As best we can tell, there is little work bearing on the suitability of this assumption.

## 2.1 The baseline legislative model

The standard models of political budget cycles (Rogoff and Siebert 1988; Persson and Tabellini 2003a) suggest that more competent politicians are capable of delivering a greater value of public goods with the same tax dollars. In a legislative context, think of this as the ability of a representative to pick, push, and pass programs that are broadly helpful to his constituents rather than purely wasteful spending. Competence,  $\varepsilon$ , is a two-period geometric moving average of underlying ability,  $\mu$ , which may be either high ( $\bar{\mu} > 1$ ) or low ( $\underline{\mu} < 1$ ). New representatives are assumed to enter the legislature with a moderate value  $\mu_0 = 1$ . We assume the  $\mu_t$  are drawn i.i.d. across the districts with a probability  $h$  of being high ability in any given period.

<sup>8</sup>Recall that this is the baseline model without parties. The party system is developed in the following section.

<sup>9</sup>Note that this means that while the PM has power during coalition building, she has no more influence than any other government member when policies are set.

<sup>10</sup>In the alternate (not included in this version) influence model to which we alluded in footnote 6, the government maximizes a weighted joint utility where the weights depend on the members' influence.

$$\begin{aligned}
 \varepsilon_{kt} &= \mu_{k,t-1} * \mu_{kt} \\
 E_{t-1}(\mu_{kt}) &= h\bar{\mu} + (1-h)\underline{\mu} = 1 \\
 \bar{\mu} &> 1, \quad \underline{\mu} < 1, \quad \mu_0 = 1
 \end{aligned} \tag{3}$$

Why does competence evolve? The legislative environment and policy challenges are changing constantly and a representative may not have the skills, allies, or agenda to succeed in the current environment. Nonetheless, there is likely to be some persistence in competence. We chose the geometric moving average as a tractable formulation of limited persistence.

Delivered public goods in district  $k$  at time  $t$ ,  $g_{kt}$ , are the product of spending on that district,  $s_{kt}$ , times the competence of the representative from that district,  $\varepsilon_{kt}$ . Recalling that budgets must be balanced over the two-period electoral cycle and acknowledging that a government  $G$  will always set spending on districts not represented in government to zero, we have the following budget constraint.<sup>11</sup>

$$\begin{aligned}
 g_{kt} &= s_{kt}\varepsilon_{kt} \\
 \sum_{t=1}^2 N\tau_t &= \sum_{t=1}^2 \sum_{k \in G} s_{kt}
 \end{aligned} \tag{4}$$

We assume that a representative's competence is not verifiable during intra-governmental bargaining; the government therefore maximizes the joint utility of the representatives under the assumption that each representative's competence equals its expected value, 1.<sup>12</sup>

Elections take place every other period.<sup>13</sup> A representative's competence is private, unverifiable information that cannot credibly be communicated to voters; hence voters operate under imperfect information. Voters observe spending in their own districts contemporaneously, but observe spending in other districts with a one period lag.<sup>14</sup> As a result, a voter who sees a high level of effective spending in her district cannot contemporaneously determine whether it is due to her representative's superior competence or excessive spending. As in the Rogoff-Siebert model, as the voter wishes to maximize *future* effective spending when electing a representative, it is the unobserved component of competence,  $\mu_t$ , on which the voter's decision rests.

We designate period one as the period immediately following the election and period two as the period immediately preceding the next election. The government's problem is to choose spending and taxes for both periods to maximize joint utility subject to the budget constraint.

$$\text{Max}_{\tau_1, \tau_2, \{g_{k1}\}, \{g_{k2}\}} \left( \frac{N+1}{2} \right) \alpha \log(1 - \tau_1) + \left( \frac{N+1}{2} \right) \alpha \log(1 - \tau_2)$$

<sup>11</sup>To streamline the sufficiently complex expressions that will follow, we assume a zero interest rate.

<sup>12</sup>This is a critical assumption but not, we feel, a controversial one. Competence is conceived as the ability to identify projects that will be valued by constituents. This is clearly a skill that requires local knowledge, probably of a nature that is too complex to be verifiably communicated to fellow representatives from separate districts.

<sup>13</sup>Elections can be made less frequent without altering the essential character of the results.

<sup>14</sup>This is another critical assumption that is standard in the literature and, we feel, defensible. Voters are much more likely to seek and receive timely and complete information about projects in their own district from both direct information from their own experience and indirect information via the local media and their own personal social networks.

$$\begin{aligned}
 &+ (1 - \alpha) \sum_{k \in G} \log(g_{k1}) + (1 - \alpha) \sum_{k \in G} \log(g_{k2}) \\
 &+ \left( \frac{N + 1}{2} \right) \log(K) + \sum_{k \in G} \log(I_k) \tag{5} \\
 \text{s.t. } &\sum_{t=1}^2 N \tau_t = \sum_{t=1}^2 \sum_{k \in G} s_{kt} \\
 &g_{kt} = s_{kt} \varepsilon_{kt}
 \end{aligned}$$

The top line is the disutility from taxation in each of the two periods, counted only among the  $(N + 1)/2$  districts whose representatives are in government. The second line is the utility from public goods in the districts in government,  $k \in G$ . The third line is the utility from office holding the following period, which is certain in the first period and uncertain in the second. Rewriting using  $g_{kt} = s_{kt} \varepsilon_{kt}$  makes it clear that the optimal tax-spend tradeoff doesn't depend on the  $\varepsilon_{ks}$ .

Because they are symmetric and the marginal utility of spending is decreasing, all districts in government receive the same amounts of spending. We first solve for the levels of taxation and spending in the absence of electoral considerations, which we denote  $(s'_k, \tau')$ .

$$\begin{aligned}
 \tau' &= (1 - \alpha) \\
 s'_k &= \begin{cases} \gamma^{-1}(1 - \alpha) & \forall k \in G \\ 0 & \forall k \notin G \end{cases} \tag{6} \\
 \gamma &\equiv \left( \frac{N + 1}{2N} \right)
 \end{aligned}$$

These allocations are chosen every period; there is no budget cycle when the government ignores the electoral implications of fiscal decisions. We now allow the government to take into account the voters' response. We postulate a separating equilibrium and derive conditions for existence.<sup>15</sup>

2.1.1 Basic legislative signaling equilibrium

*Voters:* reelect if and only if  $g_{k,2} \geq g^*(\mu_{k,1}) = c \cdot \mu_{k,1}$ .

*Legislatures:* characterize a legislature by  $h$ , the fraction of the representatives in government who will be of high quality entering the next period:  $\mu_{k,t} = \bar{\mu}$ . A legislature with  $h \geq h^*$  chooses to signal, implementing an allocation  $s''_{k2} = g^*/(\bar{\mu} \cdot \mu_{k,2}) \forall k \in G$ . As a result, high types meet the cutoff and are re-elected while low types do not and are not returned to office.

The conditions for existence, derived in Appendix A, are:<sup>16</sup>

$$\log(K) \geq \frac{1}{2h} \left\{ \frac{\alpha \gamma}{(1 - \gamma s')^2} ((s''_1 + s''_2) - 2s')^2 + \frac{(1 - \alpha)}{(s')^2} [(s''_1 - s')^2 + (s''_2 - s')^2] \right\} \tag{7}$$

<sup>15</sup>In his discussion of the origin of American political parties, Aldrich (1995) assumes that the conceptual alternative to parties is, rather than a randomly chosen minimal winning coalition, a universalist log-rolling such that all members receive their pork projects. Such an alternate baseline would imply both that parties reduce the size of government and magnify parties' reduction of the political budget cycle.

<sup>16</sup>Technical Appendices A, B, C, and D and the data description Appendix E are available online, doi:10.1007/s11127-012-0043-9.



$$\log(K) \leq \frac{1}{2} \left\{ \frac{\alpha\gamma}{(1-\gamma s')^2} ((s_1''' + s_2''') - 2s')^2 + \frac{(1-\alpha)}{(s')^2} [(s_1''' - s')^2 + (s_2''' - s')^2] \right\} \quad (8)$$

Voters set a cutoff level of effective public goods,  $g^*$ , above {below} which they infer a high {low} quality incumbent whom they choose {not} to reelect. The government must choose between three options. The government may choose not to signal at all, implementing the apolitical allocation,  $(s', \tau')$ . This is efficient but will result in all incumbents losing office as they all fail to meet the elevated spending target set by voters. Alternately, the government may choose to signal, spending enough to allow high-quality incumbents to reach the target and achieve reelection but not enough for low-quality incumbents to reach the target. We denote this allocation by  $(s_1'', s_2'', \tau'')$ . Finally, the government may choose to *super-signal*,  $(s_1''', s_2''', \tau''')$ , spending enough to allow low- as well as high-quality incumbents to achieve the voters' cutoff for effective spending and thus achieve reelection.<sup>17</sup>

In both the signal and super-signal scenarios, the government must increase spending in the pre-electoral period two beyond the optimal  $s'$  so as to meet the voters' threshold. To do this, the government re-optimizes along two dimensions. First, the government raises taxes. Because of increasing disutility from taxation, it smoothes the tax rate and increases it by the same amount in both periods, hence the constant single tax rate  $\tau''$  or  $\tau'''$ . Second, the government actually lowers spending in the first period below  $s'$  (though by less than second period spending is raised) so as to limit the amount by which taxes must be increased.

$$s_2''' > s_2'' > s' \quad s_1''' < s_1'' < s' \quad \tau''' > \tau'' > \tau' \quad (9)$$

Thus signaling involves an inefficient distortion of taxes and spending compared to the apolitical allocation. The benefit to the government is the ability to ensure reelection of a fraction of its members. The super-signal delivers reelection of a larger fraction of the voters but at a higher cost. A separating equilibrium requires that the government find it worthwhile to signal (7) but not worthwhile to super-signal (8). Voters thus will be correct in inferring that an incumbent who meets the cutoff for expected spending is of high quality. Signaling leads to re-election of high-types only.<sup>18</sup> Jointly, these restrictions require that the extra distortion required to super-signal be large relative to the number of representatives it would guarantee reelection:

$$\frac{\frac{1}{1-\gamma s'}((s_1''' + s_2''') - 2s')^2 + \frac{1}{s'}[(s_1''' - s')^2 + (s_2''' - s')^2]}{\frac{1}{1-\gamma s'}((s_1'' + s_2'') - 2s')^2 + \frac{1}{s'}[(s_1'' - s')^2 + (s_2'' - s')^2]} \geq \frac{1}{h} \quad (10)$$

The ratio on the left is a function of the relative effectiveness of high and low quality representatives while the ratio on the right is a function of their relative frequency. This condition admits a range of equilibria.

<sup>17</sup>The district subscript  $k$  has been suppressed because districts in government are symmetric and receive the same level of spending. In all cases, the government sets spending equal to zero in all districts whose representatives are not in government. The government also treats all districts in government symmetrically. Thus we could drop the district subscript,  $k$ . Governments cannot condition spending on the quality of the districts' incumbent because this is unverifiable and perhaps unknown even to the representative himself.

<sup>18</sup>Why then do low type legislators accept offers to be in government if election-year signaling will result in their ouster? Recall that a legislator cannot predict his future type and is thus ignorant during government formation. Accepting an offer is thus accepting a lottery that with chance  $h$  one is assured re-election and chance  $1 - h$  one is assured non-election. The benefit of accepting is the district-specific spending. The alternative lottery—the chance that an out-party legislator is reelected—is not specified by the model but it is trivial to show that there is a wide range of parameters under which it is optimal to accept an offer to be in government.

Finally, tax-smoothing coupled with more spending in pre-election periods leads to an electoral budget cycle. We can express the size of this effect by solving for the surplus in pre-electoral periods.

$$B = N \left\{ \frac{(1 - \alpha)}{(1 + \alpha)} - \left[ \frac{\gamma}{(1 + \alpha)} \right] s_2 \right\} \tag{11}$$

Recall from Eq. (6) that the unconstrained allocation is  $s' = (1 + \alpha)/\gamma$  so the second term is greater than one making the entire expression negative (deficit). Having established the existence of political budget cycles in a legislative context, we now turn to the role of parties in shaping this competition. Doing so requires that we add an ideological dimension to policy.

## 2.2 The legislative model with an ideological dimension

### 2.2.1 Voters

Starting from the basic competence model, we amend the voters’ utility function to include a term for a catchall policy dimension,  $\phi$ . The policy space is restrained to a single dimension whose interpretation is deliberately left vague. The purpose is simply to highlight the switch in emphasis from district-targetable transfers to cross-cutting policy issues that is engendered by the introduction of informative parties. A voter has a preferred policy,  $\phi^*$  and single-peaked preferences. Voter ideal points in any district are distributed normally along the real line with mean  $\varphi_k^*$  and variance  $\sigma_k^2$  admitting a district median voter with ideal point  $\varphi_k^*$ . We have deliberately suppressed heterogeneity in tax-and-spend preferences so this median voter in policy-space can be taken to be the district’s representative agent. Voter ideal points are not stable, but shift randomly at the beginning of each electoral cycle. Each voter receives a shock  $\gamma$  that is distributed normally with mean  $\eta_t$  and variance  $\sigma_\gamma^2$ . The mean of the shock is common to all districts and drawn from a uniform distribution of mean zero and width  $2v$ .<sup>19</sup> The parameter  $v$  is common knowledge. As a result, the post-shock preferences in a district are distributed  $N(\phi_{k,t-1}^* + \eta_t, \sigma_k^2 + \sigma_\gamma^2)$ . The preferences of the district’s median voter thus are given by:

$$\begin{aligned}
 U_{kt} &= \sum_{l=0}^{\infty} \delta^l (u_{k,t+2l} + u_{k,t+2l+1}) \\
 \ln u_{kt} &= \alpha \ln(1 - \tau_t) + (1 - \alpha) \ln g_{kt} - |\varphi_t - \varphi_k^*| \\
 \varphi_{k,t}^* &= \begin{cases} \varphi_{k,t-1}^* + \eta_t & \text{election year} \\ \varphi_{k,t-1}^* & \text{otherwise} \end{cases} \\
 \eta_t &\sim U[-v, v]
 \end{aligned} \tag{12}$$

where  $\phi_t$  is the policy implemented in legislative period  $t$ .

Assume  $N$  district ideal points distributed uniformly across the interval  $[-1/2, 1/2]$ . Define the national median  $\varphi_M^*$  to be the median of the district medians. We assume that it takes parties one period to learn about the shock to voter preferences and parties thus set

<sup>19</sup>Our results do not depend on this assumption of a uniform distribution. However, we believe that it simplifies what is already a complex explanation.

their policy positions based on *last period's* distribution of medians.<sup>20</sup> Fluctuations make it possible for representatives in moderate districts to lose their seats (because these districts unexpectedly favor the other party), generating the possibility that control of the legislature oscillates between the parties.

### 2.2.2 *The party system*

Our purpose is to contrast two extremes: (i) a system of individual legislators unconstrained by parties and (ii) a system of strong parties. To do so, we make two strong assumptions about the effects of a party system. First, parties exercise monopoly power over electoral access: under the party system a candidate must run under one of the parties. Second, parties impose perfect discipline on legislative voting. As a result, parties  $j$  set their policy platforms,  $\varphi_{jt}$ , and publicize them to voters who believe them because parties follow through. We assume that parties can credibly commit to these positions.<sup>21</sup> Party ideal points are assumed to be the median of their “natural” constituencies. For the two-party case considered in detail below, these are  $[-0.25, 0.25]$  in the transformed policy-space.<sup>22</sup> Because parties learn of preference shocks only after the election, party ideal points are based on last period's distribution of district ideal points.

### 2.2.3 *Government and policy*

In the absence of parties, we assume that the government is formed as in the basic model of Sect. 2.1. We assume that spatial policy is, like fiscal policy, chosen by the government. We could either include this in the Nash bargaining solution or model it separately as a vote resulting in the position of the party median. For symmetric distributions of  $\varphi_k^L$  within the governing coalition, these are identical so we adopt the latter for convenience. Under the party system, the government consists of all representatives from the party with the majority of the seats. The party implements its platform,  $\varphi_{jt}$ , and chooses taxes and transfers to maximize legislators' welfare in the same way as the basic and no-party cases. The timing of the model is displayed in Fig. 1.

### 2.2.4 *No/weak party equilibrium*

**Proposition 1** *In a system without parties, moderate legislators are more likely to be invited to form a government.*

The randomly selected PM wishes to assemble a minimal-winning coalition in which her ideal point is the median and thus prevailing ideology. Notice that this does not necessarily restrict her choice of coalition partners because she can choose a “median-preserving

<sup>20</sup>Stimson et al. (1995) estimate the speed with which the US House and Senate respond to changes in the opinion of the electorate. They calculate a *coupling constant*, defined as the time over which two-thirds of the total dynamic response is felt, of 1.3 years for the House and 1.2 years for the Senate. They find that the response is roughly one-third electoral turnover and roughly two-thirds changes in platform. While limited to a single country, we feel that this study supports our assumption that platforms do respond to policy, but with a lag of one policy period.

<sup>21</sup>We do not explicitly model the choice of whether the party should cheat or not, simply assuming that voters punish parties who renege on their platforms and that parties are long-lived actors who value their credibility.

<sup>22</sup>Recall that the transformed policy space is the one which is, following the nationwide preference shock, renormalized such that the national median is located at 0 and thus the district ideal points are distributed uniformly across  $[-0.5, 0.5]$ .

<b>No parties</b>	<b>Strong parties</b>
	Parties Simultaneously Choose Platforms: $\varphi_{jt}$
Shock to median voter preferences, $\eta_t$ , realized	
Voters simultaneously choose between incumbent and challenger	
PM chosen randomly and government formed	Government includes all representatives of majority party
Period one policy chosen	
Period two policy chosen	

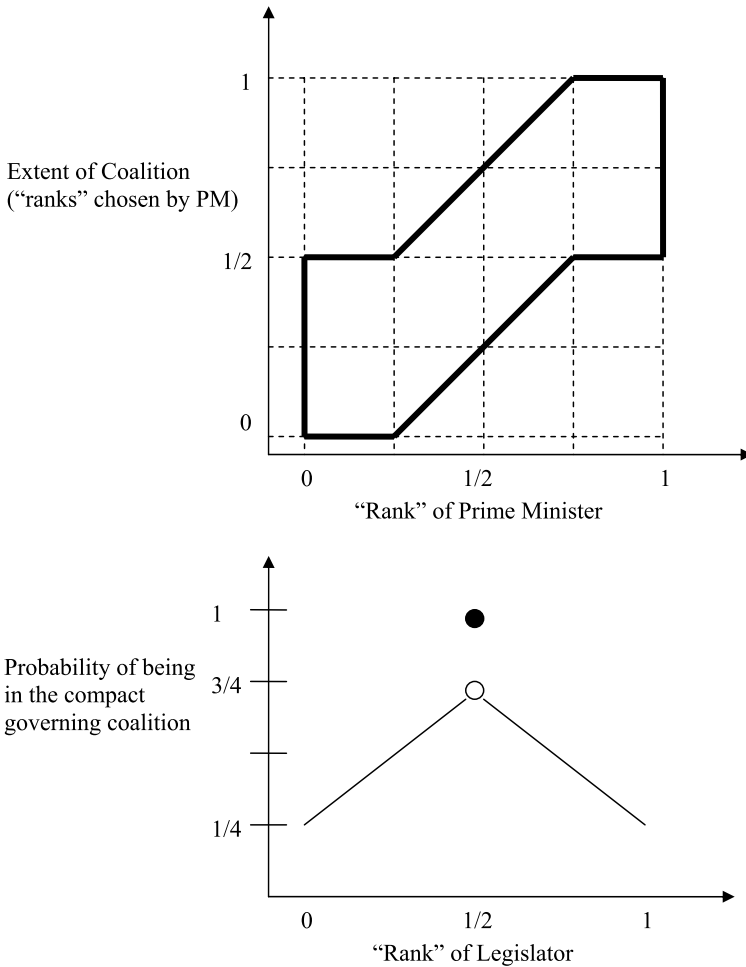
**Fig. 1** Timing of the models with an ideological dimension

spread” to change coalition partners while preserving her preferred policy. Nonetheless, we assume that the PM forms a compact coalition so as to minimize the (un-modeled) cost of decision-making within the coalition.<sup>23</sup> Why would a representative accept an offer to be part of a coalition promoting a policy (possibly very) different from his own ideal point? Because his rejection will not stop this policy; the PM can simply make an offer to a different coalition. Thus, given the inability to affect the policy, he prefers to be in the coalition and at least reap the benefits of spending for his district.<sup>24</sup>

District  $k$ , characterized by median voter with ideal point  $\varphi_k^*$ , will elect a representative with ideal point  $\varphi_k^I$ . Given the assumption of compact coalitions and equal chances of any given legislator being the PM, the probability that an individual representative is invited into government depends on the representative’s relative ideological position in the legislature, which we refer to as *rank*. The representative with the leftmost ideal point is said to have rank 0, the median legislator has rank  $\frac{1}{2}$ , and the rightmost legislator has rank 1. As Fig. 2 illustrates, representatives of moderate rank are more likely to be included in government. The top panel shows the compact coalition that will be chosen by each rank should he/she be selected PM. Recalling that all representatives are equally likely to be PM, by inverting

<sup>23</sup> Alternately, we could motivate this by arguing that legislators whose ideology is closer to that of the Prime Minister are willing to pay higher rents to be part of the government.

<sup>24</sup> Notice that a PM who is more extreme than the 25<sup>th</sup> or 75<sup>th</sup> percentile of all representatives cannot achieve her preferred policy because there are insufficient extremists to make her ideal point the median in the government. The best she can do is achieve the 25<sup>th</sup> or 75<sup>th</sup> percentile. Nonetheless, she still has a choice of coalitions: in a 101-member legislature numbered from 0 to 100 according to ideology, the median of both {0–50} and {0–25, 51–75} is the 25<sup>th</sup> legislator. It is true that these extreme coalitions require the participation of all of the most extreme legislators, which could conceivably give them bargaining power in negotiations over formation. But the effect of any one legislator’s rejection would be simply to move the achievable coalition one legislator to the center; a modest change. By ruling out this behavior, we assume that the pork-barrel benefits of being in government outweigh this modest effect on policy. In essence, individual legislators have too little bargaining power to shift the equilibrium policy enough to dissuade them from accepting the transfers that come with being in government.



**Fig. 2** Moderate representatives are more likely to be chosen for government

this mapping one can calculate the probability that a representative of given rank will be selected for the coalition.

**Proposition 2** *The benefits to being in government (from targeted public goods) are sufficiently large that a district will always vote strategically to send a representative that is more moderate than the district median voter so as to improve their chances of being in the government. As a result, the distribution of representatives’ policy preferences collapses to the nationwide median.*

This occurs so long as the utility from the extra spending is large compared to the chance of being chosen PM. See Appendix C for the proof. Thus all districts elect moderate legislators:  $\varphi_k^L = \varphi_M^*$ ,  $\forall k$  and both incumbents and challengers pledge  $\varphi_k^L = \varphi_M^*$  so as to maximize the chance of being in government. With no spatial competition, incumbents distinguish themselves from challengers by signaling with district-specific spending, as in the basic

equilibrium. We feel that this result captures the essential character of weak parties: individual legislators cannot deliver a specific policy so voters care solely about access to power in order to reap the rewards of patronage. The no/weak party equilibrium exhibits political budget cycles just as the basic model.

### 2.2.5 Strong party equilibrium

**Proposition 3** *In a strong party system, the party in power will signal with inefficiently large spending only in those few districts that are competitive, i.e., where the district median voter's ideology is sufficiently close to the cut-point between the parties' ideological platforms. This limits signaling to only a subset of districts, damping the political budget cycle.*

Both for simplicity and because the results are starkest, we discuss the two-party case.<sup>25</sup> We look for Nash equilibria in the parties' platform decisions.<sup>26</sup> Party  $R$ 's maximization problem is:

$$\begin{aligned} \text{Max}_{\varphi_R, \tau, g_k} \sum_{k \in g} \log V_k = N_R [\alpha(1 - \tau_t) + (1 - \alpha)g_{kt}] - |\varphi_t - \varphi_R^*| + N_R K \\ \varphi_L \text{ given} \end{aligned} \quad (13)$$

where  $K$  denotes the per-representative benefit to holding office,  $N_R$  denotes the number of seats the party wins,  $\varphi_R$  is the party's platform,  $\varphi_R^*$  is the party's ideal point, and  $\varphi_t$  is the policy enacted by the party that wins power. We show in Appendix B that parties do not converge to the national median, preferring to trade a reduced probability of victory for a more preferred policy if victory does occur. We also show that, because it is endowed with the ability to signal quality through spending, which enhances its chance of election for a given set of platforms, the governing party chooses a more extreme platform and the out-party a more moderate platform.

Because a candidate's effective ideal point in a strong party system is that of the party, a district will prefer the candidate from whichever party's national policy is closer to the district median, modified by its knowledge of the candidate's quality. Successfully signaling quality could convince a district on the wrong side of—but sufficiently close to—the breakpoint to reelect the incumbent for his competence despite misgivings about the party platform.<sup>27</sup> Thus a party will, to retain power, spend and signal in the marginal districts most likely to need an additional boost. However, there is no incentive, in a majoritarian system, to signal in districts that are either safe or out of reach. The existence of uncompetitive districts limits the scope for signaling, dampening the political budget cycle. This equilibrium is detailed in Appendix D.

<sup>25</sup>The results can be generalized to multiple parties assuming that parties have well-defined relative policy positions.

<sup>26</sup>With party positioning and signaling, we are assuming and solving a static rather than a dynamic problem. Since the quality of members does not persist between elections, the only state variable that persists between elections is the number of the members of each party. We do take into account the identity of the incumbent party—the party that can signal with extra spending—when calculating optimal party platforms (see the Appendix B). As the results show, party platforms are such that the incumbent party is no more likely to retain power than the out-party is to seize it. With no continuation value to being in government, the dynamic problem reduces to a static one.

<sup>27</sup>A district would also prefer to elect a representative who will be part of the government (thus earning pork for the district). But as shown in Appendix C, parties choose their platforms such that the ex-ante probability of each party winning the majority of seats is equal.

### 2.3 Parliamentary system

This argument holds only for majoritarian electoral systems with single-member districts. Under a proportional rule system with national electoral lists, parties must fight for every vote simultaneously. Moreover, voters no longer infer individual quality but rather the quality of the governing party as a whole. Thus the issue reduces to the Rogoff-Siebert model of unitary government with a single, national electoral district. The incidence of strong parties therefore does not limit electoral budget cycles in a PR system. In our empirical work, we first look at a sample pooling both types of electoral systems for comparability with prior work. We then split the sample by electoral rule to show that our results are indeed driven by the countries with majoritarian electoral systems.

## 3 Data and variable definitions

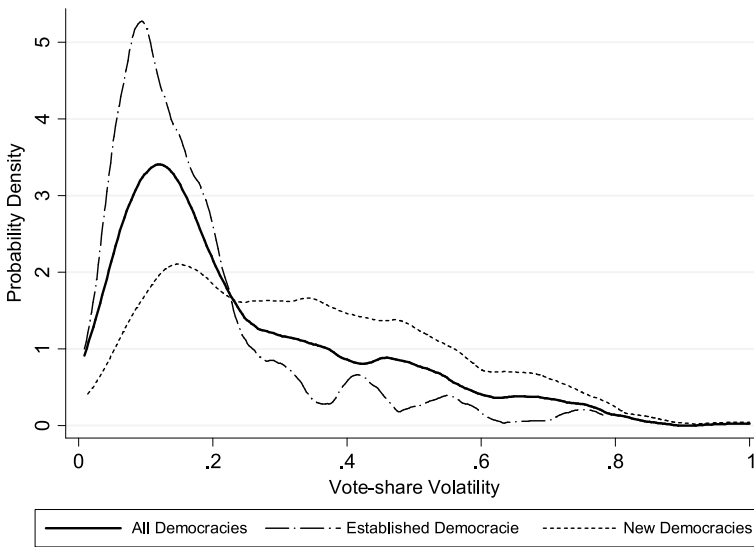
Testing our hypotheses requires a measure of the strength of political parties. We follow Mainwaring and Scully (1995) and Mainwaring and Torcal (2005) in measuring the institutionalization of the party system by the well-known Pedersen (1983) index of party vote-share volatility. Party vote-share volatility is an aggregate measure of the extent to which voters switched from one party to another in successive elections. This measure directly quantifies the extent to which parties are stable, long-lived platforms commanding voter loyalty. Countries in which parties are weak, mere shells for the political careers of charismatic individuals, exhibit highly volatile party vote-shares as individual politicians rise and fall or leave parties to start new ones.<sup>28</sup> We collect vote share data for all democracies (polity score greater than 0) from 1980 through 2007 to calculate vote-share volatility by election. To derive our raw measure, we calculate the absolute change in the vote total of a party between one election and the next, then sum across parties and divide by two.<sup>29</sup>

This measure has been criticized as possibly being endogenous: when the incumbent party governs poorly, its vote share will fall, increasing volatility. When the incumbent party governs well, its vote share will rise, also increasing volatility. In light of this, Keefer (2007) uses the average age of the parties as an alternative measure. Unfortunately, older parties are not necessarily more institutionalized. Studies of new democracies in post-communist states document a pattern of electoral competition without deepening party institutionalization (Rose and Munro 2003; Bielasiak 2002). More broadly, Mainwaring and Torcal demonstrate that measures of party institutionalization in third-wave democracies have not significantly improved over time. Thus, in order to understand why new democracies perform poorly, it is imperative that we develop measures of party institutionalization that are separate from the accumulation of electoral experience. As we discuss in Sect. 4.1, addressing potential endogeneity is a relatively simple matter of instrumenting with lagged values.

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<sup>28</sup>It has been suggested that we include the effective number of parties in our specification. We do not believe this to be advisable. A system can have institutionalized parties and stable vote shares with either few or many parties. On the other hand, weak party institutionalization can, by encouraging new parties, lead to a larger effective number of parties. Thus our measure of vote-share volatility already captures that component of the effective number of parties that is relevant to party institutionalization.

<sup>29</sup>While it is easier to find seat-share data than vote-share data, vote-share volatility is preferred to seat-share volatility because votes are a more direct measure of the connection of the electorate to the party. Minimum thresholds in the translation of votes to seats, the rules for which vary across countries, mean that the latter is an inconsistent proxy for the former.



**Fig. 3** Vote-share volatility in new and established democracies

Vote-share volatility is largely orthogonal to Lijphart's two classic dimensions of democracy: executives-parties and federal-unitary. The unconditional correlations between the binary measure of vote-share volatility and measures of whether there is a strong executive, whether the electoral system is first-past-the-post, and whether the system of government is federal are  $-0.04$ ,  $0.08$ , and  $0.09$  respectively. As such, vote-share volatility cannot usefully be proxied simply by using available measures of democracy.

Figure 3 shows the kernel density estimate of the distribution of vote-share volatility for the sample as a whole and for the separate sub-samples of the new and established democracies.<sup>30</sup> Notice that vote-share volatility is generally higher in new democracies than emerging democracies. In each set of countries, there is a mode at low volatility and a long right tail. But in established democracies, almost all of the probability mass is contained in the tail, whereas in the new democracies, most of the probability mass is contained in the tail. The raw correlation between vote-share volatility and the indicator of new democracy is  $0.45$ .

These graphs also make clear that using the raw measure of volatility is probably a misspecification; the marginal effect of a one percentage point increase in volatility is not likely to be constant. The difference between a system with volatility  $0.1$  and a system with volatility  $0.4$  is likely much greater than the difference between  $0.4$  and  $0.7$ . For example, Brazil, a country that Mainwaring and Scully classify as having weakly institutionalized parties during the 1980s, had a volatility score between  $0.3$  and  $0.4$  during that decade. We suspect that once the party is no longer the locus of power, then further vote-share volatility makes little difference to the political budget cycle. Thus, rather than use the measure in raw form, we split the sample at the median value of volatility ( $0.217$ ) to generate a binary measure as our independent variable.

<sup>30</sup>We use the Epanechnikov kernel with STATA's default optimal bandwidth.



Data on elections were gathered by hand from a variety of sources, chief among them the IPU Parline Database on National Parliaments. The complete list can be found in the separate data appendix, E. Our data cover 461 elections from 93 democracies between 1980 and 2007. We begin in 1980 because the quality and availability of electoral and fiscal data degrade considerably prior to this date. We match elections with the proper corresponding fiscal year. Summary statistics and sources for all our variables are provided in Table 1.

## 4 Evidence

First, we show that our sample is characterized by electoral budget cycles of magnitude similar to those found by previous studies. For comparability, we adopt the specification and notation of Brender and Drazen (2005):

$$f_{i,t} = \sum_k b_k f_{i,t-k} + c' X_{it} + d \cdot ELEC_t + \mu_i + \varepsilon_{i,t} \quad (14)$$

where  $f_{i,t}$  is the fiscal indicator, which in all of our regressions is the budget surplus of the central government as a percentage of GDP in country  $i$  in fiscal year  $t$ ,  $X_{i,t}$  is a vector of controls, and  $ELEC_{i,t}$  is an indicator of whether an election took place in country  $i$  during fiscal year  $t$ .<sup>31</sup> The controls include real GDP per capita, estimated potential real GDP per capita, trade openness, and measures of the fraction of the population aged 15–64 and 65+.

To compare to a previous study, we have obtained and run the same specification for Brender and Drazen's data and for our own sample and we have estimated both with fixed effects and using an Arellano-Bond (1991) dynamic panel GMM procedure. However, given the presence of lags of the dependent variable, and a short panel, this is clearly a case for the Arellano-Bond estimator. Thus, for the remaining specifications we run only this estimator. We will also address potential endogeneity of the volatility variable.

Our basic results (Table 2) confirm the political budget cycle found both by Shi and Svensson (2006) and Brender and Drazen (2005). In fact, the political budget cycle in our sample is significantly stronger than that in the set of countries covered by Brender and Drazen. Given that our broader sample includes more new democracies (Brender and Drazen 2005) with lesser budget transparency (Alt and Lassen 2006) and fewer checks on the executive (Streb et al. 2009), this is in line with previous literature.

### 4.1 The role of party institutionalization

We now turn to estimating the effects of a strong party system. Recall that we have compiled a binary measure of party volatility so as to compare countries with high volatility (and thus a weak party system) to those with low volatility (indicating a strong party system). But because voters may change their vote choice based on variation in the budget surplus, it is possible that vote-share volatility is endogenous. For example, if the Christian Democrats are in power in Germany and run up a large budget deficit, that may lead many of their supporters to vote for other parties in the next election, increasing those parties' vote shares at the expense of the CDU, thereby increasing Germany's measured vote-share volatility. Thus,

<sup>31</sup>We would have liked to use a measure of targetable expenditures rather than the budget deficit. Unfortunately, we were unable to find a more specific measure that afforded sufficient coverage. There is also the attendant difficulty in identifying what expenditures are targetable and whether such a classification is constant across polities.

**Table 1** Summary of variables

Variable	Source	Notes	Countries	Country-Years	Mean	St. Dev	Min	Max
Surplus	Brender and Drazen, extended		99	1648	-2.19	4.27	-38.2	22.6
Fraction of Population aged 15–64 (0–100 %)	World Development Indicators		119	2188	61.6	6.1	47.8	72.2
Fraction of Population aged 65+ (0–100 %)	World Development Indicators		119	2188	8.4	5	1.9	20.8
Log(Real GDP per capita) Actual	World Development Indicators		119	2182	7.95	1.57	4.41	10.66
Log(Real GDP per capita) Potential	World Development Indicators	Potential defined by HP filter	119	2178	7.95	1.57	4.41	10.66
Trade Openness: $(X + M)/GDP$ (0–100+ %)	World Development Indicators		119	2109	75	38.1	12.3	280.4
Election Year	IPU Parline, others	Fiscal year	119	2188	0.21	0.41	0	1
Democracy	PolityIV project	Polity 2 > 0	119	2188	1	0	1	1
New Democracy	Author's calculations	Within first four elections of becoming democratic	96	1846	0.47	0.5	0	1
Hard Exchange Rate Peg	Reinhart and Rogoff		112	2073	0.25	0.43	0	1
Vote-share volatility	IPU Parline, others	Pedersen index calculated from raw data	90	1775	0.251	0.192	0.009	1
Media Freedom	FreedomHouse		118	2143	32.8	19	5	87
Budget Transparency	Open Budget Index	Cross section from 2010	74	74	53	21.9	1	92
Majoritarian	Database of Political Institutions		111	1953	0.59	0.49	0	1
Presidential	Database of Political Institutions		115	2040	0.45	0.5	0	1
Unitary	Gerring and Thacker	Equals 1 if Gerring-Thacker index = 4 or 5	101	2005	0.29	0.45	0	1
Checks on the Executive	Database of Political Institutions	Equals 1 if checks on the executive = 7	119	2142	0.58	0.49	0	1

**Table 2** Confirming the existence of electoral budget cycles in our sample

Variables	Fixed effects		Arellano-Bond	
	Brender-Drazen	Shelton	Brender-Drazen	Shelton
	[1]	[2]	[3]	[4]
Dependent variable: budget surplus				
L.Surplus	0.113*** (0.025)	0.017 (0.023)	0.520*** (0.025)	0.483*** (0.024)
L2.Surplus	0.094*** (0.024)	0.081*** (0.023)	0.073*** (0.023)	0.064*** (0.022)
Fraction of Population aged 15–64 (0–100 %)	–0.116** (0.056)	–0.087 (0.086)	–0.113** (0.055)	0.025 (0.064)
Fraction of Population aged 65+ (0–100 %)	–0.210 (0.149)	0.444** (0.193)	–0.060 (0.117)	0.176 (0.151)
Log(Real GDP per capita) Actual	0.816* (0.441)	5.015** (2.012)	0.834*** (0.322)	9.391*** (2.303)
Log(Real GDP per capita) Potential	0.470*** (0.095)	–5.141*** (2.003)	0.363*** (0.068)	–8.103*** (2.299)
Trade Openness: $(X + M)/GDP$ (0–100+ %)	0.013 (0.008)	0.048*** (0.008)	0.005 (0.007)	0.022*** (0.006)
Election Year (0, 1)	–0.328*** (0.097)	–0.604*** (0.115)	–0.391*** (0.119)	–0.722*** (0.147)
Constant	–2.332*** (0.682)	–2.781*** (0.794)	–2.155 (2.424)	–16.183*** (5.018)
Observations	1,498	1,574	1,503	1,624
Number of countries	67	108	67	108
Average length of series	22.36	14.57	22.43	15.04

Standard errors in parentheses: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

we treat both the volatility measure and its interaction with the election year indicator as endogenous variables when applying the Arellano-Bond dynamic panel estimator. As a result, we instrument with lagged levels, removing the potentially endogenous contemporaneous variation.

We control for the business cycle, demographics, trade openness, and exchange rate regime, which would proscribe a certain monetary response to fiscal stimulus (Drazen 2001). We show that new democracies do exhibit stronger electoral budget cycles in our sample (column 5). Likewise, high electoral volatility is also associated with budget cycles (column 6). Including both new democracy and electoral volatility weakens the effects of both (column 7). When we include other leading explanations—media freedom and budget transparency, which Akhmedov and Zhuravskaya (2004) and Alt and Lassen (2006) have shown are associated with political budget cycles—new democracy fades considerably while electoral volatility remains strong.

The effects of budget transparency and the strength of the party system are both large. Countries with high electoral volatility (weak parties) experience an electoral budget cycle roughly a full percentage point of GDP larger than countries with low volatility (strong parties). Meanwhile, a one standard deviation increase in budget transparency (the difference

**Table 3** Which institutions damp the electoral budget cycle?

Variables	[5]	[6]	[7]	[8]
Dependent variable: budget surplus				
Election Year (0, 1)	-0.564*** (0.198)	-0.467** (0.196)	-0.360* (0.208)	-2.065*** (0.663)
Hard Exchange Rate Peg (0, 1)	0.484 (0.318)	0.411 (0.311)	0.307 (0.308)	0.35 (0.355)
New Democracy (0, 1)	-0.65 (0.461)		-0.266 (0.473)	-0.171 (0.472)
Volatility (0, 1)		-0.257 (0.297)	-0.237 (0.296)	0.151 (0.340)
Budget Transparency (0–100)				-0.145 (0.125)
Media Freedom (0–100)				-0.016* (0.010)
Election Year * Hard Peg	0.367 (0.383)	0.379 (0.400)	0.404 (0.393)	0.319 (0.603)
Election Year * New Democracy	-0.482* (0.292)		-0.449 (0.327)	-0.324 (0.428)
Election Year * Volatility		-0.765** (0.305)	-0.594* (0.331)	-0.995** (0.443)
Election Year * Budget Transparency				0.027*** (0.009)
Election Year * Media Freedom				0.021* (0.011)
Observations	1,331	1,296	1,228	789
Number of countries	93	86	84	56
Average length of series	14.31	15.07	14.62	14.09

Standard errors in parentheses: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Method of estimation is Arellano-Bond with two lags. Controls include: fraction of population between 15 and 64, fraction of population over 65, log of per capita real GDP, log of estimated potential real GDP, trade openness, and a constant

between Costa Rica and Norway) reduces electoral budget cycles by 0.806 percentage points of GDP. Given that the sample-average electoral budget cycle is 0.722 percentage points of GDP (Table 2, column 4), these are both large effects.

As a simple robustness test, we dropped one country at a time and reran specification (8) from Table 3. Doing this for all 56 countries determines whether any single country is responsible for the effect. Across these 56 regressions, the coefficient on the interaction between election year and volatility varies from  $-0.800$  to  $-1.240$  and always remains significant at the 10 % level. The effects of media freedom and budget transparency are similarly robust. The effects of new democracy vary considerably, but never approach statistical significance.

**Table 4** Splitting the sample along principal dimensions of democracy

Variables	Electoral system		Identity of the executive		Decentralization		Checks on the executive	
	Majoritarian [9]	Proportional [10]	Presidential [11]	Parliamentary [12]	Unitary [13]	Federal [14]	Low [15]	High [16]
Dependent variable: budget surplus								
Election Year (0, 1)	-3.246*** (0.934)	-0.505 (0.949)	-2.719*** (0.851)	-1.675* (0.954)	-2.336*** (0.880)	-0.586 (1.029)	-3.649*** (1.071)	-1.559*** (0.774)
New Democracy (0, 1)	0.369 (0.605)	-1.713*** (0.721)	0.237 (0.530)	-0.867 (0.862)	-0.961 (0.686)	0.57 (0.551)	-1.015 (0.794)	0.122 (0.562)
Media Freedom: (0, 100)	-0.015 (0.014)	-0.004 (0.016)	-0.027** (0.012)	-0.02 (0.017)	-0.049*** (0.014)	0.004 (0.013)	-0.039*** (0.014)	-0.005 (0.015)
Budget Transparency (0, 100)	-0.414*** (0.173)	0.357* (0.198)	0.426*** (0.214)	-0.347*** (0.164)	-0.144 (0.155)	0.086 (0.189)	-0.923*** (0.235)	0.286*** (0.133)
Volatility (0.25, 0.75)	0.626 (0.502)	-0.209 (0.515)	-0.469 (0.408)	1.240** (0.552)	0.303 (0.480)	0.027 (0.422)	0.351 (0.463)	-0.225 (0.481)
Election Year * New Democracy	-0.628 (0.546)	0.063 (0.692)	-0.654 (0.575)	0.464 (0.622)	-0.725 (0.634)	0.163 (0.569)	-0.346 (0.727)	0.036 (0.487)
Election Year * Media Freedom	0.053*** (0.014)	-0.026 (0.018)	0.042*** (0.015)	0.016 (0.015)	0.037** (0.015)	-0.005 (0.016)	0.037** (0.017)	0.041*** (0.018)
Election Year * Budget Transparency	0.033*** (0.011)	0.019 (0.015)	0.035*** (0.013)	0.018 (0.012)	0.030*** (0.012)	0.009 (0.014)	0.041*** (0.016)	0.013 (0.010)
Election Year * Volatility	-1.153*** (0.576)	-0.567 (0.693)	-1.662*** (0.591)	-0.229 (0.627)	-1.309** (0.640)	-0.514 (0.621)	-1.559** (0.705)	-0.483 (0.549)

**Table 4** (Continued)

Variables	Electoral system		Identity of the executive		Decentralization		Checks on the executive	
	Majoritarian [9]	Proportional [10]	Presidential [11]	Parliamentary [12]	Unitary [13]	Federal [14]	Low [15]	High [16]
Observations	463	317	438	351	468	308	370	406
Number of countries	35	23	31	29	34	18	34	34
Average length of series	13.23	13.78	14.13	12.1	13.76	17.11	10.88	11.94

Standard errors in parentheses: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Method of estimation is Arellano-Bond with two lags. Controls include: fraction of population between 15 and 64, fraction of population over 65, log of per capita real GDP, log of estimated potential real GDP, trade openness, and an indicator of a hard exchange rate peg

## 4.2 Party strength and democratic institutions

Finally, to highlight how the effect of a strong party system on electoral budget cycles varies according to the democratic institutions, we split the sample along the dimensions that define the institutional clusters among democracies (Lijphart 1999). As we have noted in section 3, electoral volatility is distinct from and varies independently from these dimensions. First, we look at different electoral systems by splitting between majoritarian and proportional rule systems (Table 4). Our theory predicts that strong parties will dampen electoral budget cycles primarily in a majoritarian electoral system. Comparing columns (9) and (10), we find this is the case.

We then proceed to look at differences between presidential and parliamentary systems, unitary and federal systems, and systems with relatively many or relative few checks on the executive. Our theory does not incorporate these elements and thus makes no prediction. However, Duch and Stevenson (2008) argue that unitary government and presidential systems both lead to a stronger economic vote (voters rewarding or punishing the incumbent party based on economic performance) by concentrating decisions in the hands of fewer decision makers. While they do not investigate electoral budget cycles, it is likely that a stronger economic vote would lead to stronger cycles by delivering a greater incentive to manipulate.

A clear pattern emerges from Table 4. First, along each of these dimensions of democratic institutional variation, there is one type that is a great deal more susceptible to political budget cycles than the other.<sup>32</sup> Majoritarian electoral systems, presidential systems, unitary government and few checks on the executive are each conditions for much stronger electoral budget cycles. We also reconfirm the findings of Akhmedov and Zhuravskaya (2004) and Alt and Lassen (2006): budget transparency and media freedom are important in curbing electoral budget cycles wherever they are found.

The fact that presidential systems and systems with few checks on the executive exhibit strong cycles clearly emphasizes the importance of the executive branch, in contrast to the thrust of our model and argument. However, we show that electoral volatility (and thus presumably party strength) is important in curbing electoral budget cycles under *any* institutional arrangement. Given that responsibility for the budget is shared between the legislative and executive branches (which may be combined in a parliamentary system of government), we suspect that the motives of both branches are important to understanding the incidence of electoral budget cycles. In sum, we do not seek to refute the previously advanced factors—indeed we find support for the role of checks on the executive, media freedom, and budget transparency. Rather, we believe that legislative organization, particularly the strength of political parties, is an additional important determinant of electoral budget cycles.

## 5 Summary

Recent work on electoral budget cycles has emphasized their conditional nature: now you see them, now you don't. Policy-makers will engage in fiscal electioneering only when they have the motive—the electorate rewards fiscal transfers and does not punish for the resulting deficits—and the means—instruments of fiscal policy are controlled by like-minded actors

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<sup>32</sup>Why do we find a strong association between electoral budget cycles and democratic institutions when a previous study by Brender and Drazen failed to find any such connection? We suspect that the additional controls for budget transparency and the strength of the party system have made the difference.

who will be able to take credit. The finding that electoral budget cycles are most common in new democracies has led to a variety of work analyzing how these new democracies enable and/or reward fiscal electioneering. The current set of conditions has focused on the means and motives of a unitary policy authority to explain the prevalence of cycles in new democracies. The story that emerges—a captive media and opaque budget procedures that inhibit voters from performing due diligence—is convincing and backed by solid evidence. But we believe that this is not the whole story.

Budgeting takes place largely at the legislative level and is not, even in parliamentary systems, where the Prime Minister is elected by the legislature, under the full control of a unitary policy-maker. Rather, it is the result of collective action among the representatives. As such, there is great scope for the organization of legislative activity to affect the outcome. In this paper, we emphasize one particular dimension of legislative organization—the institutionalization of political parties—as critical to the strength of electoral budget cycles.

Our model shows that the development of a strong party system can dampen budget cycles, particularly in a majoritarian electoral system, by refocusing legislative competition. Parties enable voters and representatives to learn of each others' ideological preferences and thus transform electoral competition from a personalized politics of clientelism to a partisan politics of ideology. In a majoritarian system, the incentive to signal by spending excessively is limited to those few districts that are ideologically up-for-grabs. Our empirical work shows that strong parties are as important in suppressing fiscal electioneering as free media and transparent budgets. The electoral budget cycle is, at least in part, a *legislative* phenomenon.

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