

Strategic Debt and Unified Governments: Evidence from Latin American Presidential Transitions

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Abstract

Strategic use of debt hypothesis argue that governments issue more debt when facing higher probabilities of electoral defeat. Testing it has proven challenging since measures of those probabilities are potentially endogenous. During presidential transitions, the probability of electoral defeat becomes, respectively, one or zero if the incumbent was defeated or reelected during the elections. Then, using ex-post electoral outcomes as a proxy of the probability of electoral defeat allows me to construct measures of the electoral surprise and to estimate their impact on the budget deficit. Monthly data from Latin American democracies during 1980-2005 reveals that higher magnitudes of surprise defeats (wins) produce higher (lower) deficits when the executive controls the legislature, but no effect is found when not. While previous studies found that unified governments facilitate the manipulation of fiscal resources for electoral gain, here I show that such manipulation is extended even beyond electoral defeats, during presidential transitions.

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1 Introduction

Positive studies on budget deficits and debt accumulation have argued that a government anticipating a possible defeat in the next election can use debt strategically in order to influence the policy of its successor. Such opportunistic behavior leads governments to issue debt beyond the optimal level (Persson and Svensson, 1989; Alesina and Tabellini, 1990; Tabellini and Alesina, 1990; Drazen, 2000). In particular, Alesina and Tabellini (1990) predict that governments, regardless of their party ideology, will issue more debt when facing a higher probability of electoral defeat.

Estimating the predictions of strategic debt models has proven challenging. Since incumbents may use the budget to help their reelection prospects (Rogoff and Sibert, 1988; Rogoff, 1990; Shi and Svensson, 2006), proxies of the probability of reelection may be affected by deficits, leading to a reverse causality problem.

This paper exploits the existence of extended interlude periods (i.e., time between election and government change date) from Latin American presidential democracies to identify a plausible causal effect of a change in the probability of electoral defeat on a change in the budget deficit. Namely, since uncertainty about the incumbent's successor is revealed during the interludes, by definition, the probability of electoral defeat becomes, respectively, one or zero if the incumbent was voted out or reelected during the elections. Then, using ex-post electoral outcomes as a proxy of the probability of electoral defeat during the pre-electoral period allows me to construct a plausible exogenous change in that probability between the pre-electoral and the interlude periods to estimate its impact on the change in the budget deficit.

This identification strategy has an added benefit. Estimating the effect of changes in the probability of being defeated between pre-electoral and interlude periods allows me to control for unobserved incumbent characteristics, such as the ability or desire to use the government budget for political gain. This is possible because the incumbent remains in office until the government change date, so I observe the same incumbent choosing monthly spending before and after elections even in the case of an electoral defeat. Previous studies have tested the same hypothesis using data in levels instead of testing

their changes (Pettersson-Lidbom, 2001; Lambertini, 2003), in which case such unobserved incumbent characteristic may be an additional concern.

I first formalize the effect of a change in the probability of being defeated on the budget deficit by extending the Alesina and Tabellini (1990) model to include interlude periods. Like in their model, I assume that the individuals are identical except for the preferences over the composition of public expenditure using a separable utility framework. And unlike them, I assume that the incumbents use lump sum taxes fixed to unity. In equilibrium, I find that the higher the increase (decrease) in the probability of being defeated, the higher the increase (decrease) in the deficit between interlude and pre-electoral periods.

Second, I test the theoretical prediction of the model using panel data on federal government deficit from presidential Latin American democracies reported by International Financial Statistics (IFS). I regress executed monthly deficits on indicators for pre-electoral periods interacted with the probability of being voted out, interlude, and interlude if the incumbent and his/her successor are not from the same party.¹ The theoretical model assumes that the executive has full discretion in the way resources are ultimately spent. However, in reality, the manipulation of the fiscal policy for political gain may be exacerbated when there is a correspondence between the interest of a legislative majority and the executive branch (i.e., unified government).^{2 3} Therefore, I control for unified government in the regression equation to test also this hypothesis, as it is done in Hicken et al. (2005), Streb et al. (2009), Streb et al. (2012), among others.⁴ Consistently with the model, on the one hand, when governments are unified, the estimation results show that the deficit increases considerably when the incumbent's party is voted out and this was perceived as unlikely before the elections. By contrast, the deficit decreases considerably when the incumbent's party is re-elected and this was perceived as unlikely before the

¹I consider partisanship as a proxy of similarity in policy choices.

²Alesina and Rosenthal (1995) show that divided government moderates the executive power in the US. Streb et al. (2009), for a group of developed and developing countries, find that the political budget cycle (PBC) is dampened during elections in divided governments.

³In Section 3, I explain the mechanisms from which unified governments facilitate the manipulation of fiscal resources for political gain.

⁴In Section 3, I describe the variable used to identify divided/unified governments.

elections. The deficit does not change significantly when the electoral outcome conforms to expectations. This shows that only large changes in the probability of being defeated generate large changes in the budget deficit; i.e., when a victory or a defeat is perceived as a surprise.⁵ On the other hand, I find no effects under divided governments. This demonstrates the importance of controlling for divided/unified governments when studying the manipulation of the fiscal policy for political gain, as it was found in Streb et al. (2009), Streb et al. (2012), and Streb and Torrens (2013). These papers show that the manipulation of the budget for political gain before elections is exacerbated when the executive is politically aligned with the legislative majority. In contribution to these studies, I find that such manipulation could be extended even beyond an electoral defeat when those two branches of government are politically aligned.

My paper improves on the identification strategy of earlier studies of strategic debt. Pettersson-Lidbom (2001) uses ex-post vote shares from Swiss municipalities in order to construct the probability of electoral defeat. To address the reverse causality problem arising if politicians use government budgets to enhance their reelection prospects, he uses municipality fixed effect as instruments because municipality dummies appear to be valid instruments. *“The unequal dispersion of government change across municipalities suggests that municipality fixed effects can be used as predictors of the probability of defeat. Thus these fixed effects measure the average frequency of government change and can be interpreted as capturing the latent instability of voters’ preferences in a particular municipality”* (Pettersson-Lidbom, 2001:576). Under this empirical strategy, however, it is not possible to control for fixed unobserved heterogeneity at the municipality level in the second stage estimation, which might lead to biased estimates. Lambertini (2003) uses ex-ante opinion polls (i.e., *“the fraction of interviewed individuals that would vote in favor of the incumbent if elections were held at the time the poll is taken”* (Lambertini, 2003:3)) as a proxy of the probability of electoral defeat for the United States and OECD countries. Since opinion

⁵The magnitude of an electoral surprise is calculated as follows: when the incumbent perceives an electoral defeat with probability 0.65 and he indeed lost elections, the probability of electoral defeat goes to 1, in which case the magnitude of the surprise defeat is $1 - 0.65$. Or when the incumbent perceives an electoral defeat with probability 0.35 and he finally wins, the probability of electoral defeat goes to 0, in which case the magnitude of the surprise defeat becomes $0 - 0.35$. A negative surprise defeat implies a positive surprise victory.

polls are usually conducted few months before elections take place, they may suffer from the same endogeneity problem as the ex-post vote shares.⁶ In contrast to those papers, my identification strategy is focused on identifying the effects of electoral surprises, which provides a plausible source of exogenous variation. This is supported by the evidence that my results survive a long list of robustness checks and stress testing, such as the exclusion of all control variables.⁷

Substantively, my results suggest that under unified governments, given that fiscal deficit increases significantly once high surprise defeats are in place, after every election there may be a significant impact on public debt, or on inflation if the country finance its deficit with inflationary tax (Stein and Streb, 1998).

The rest of the paper is organized as follows. In the next section I present the model. In section 3 I describe the data and the econometric specification. In section 4 I present the empirical results. Finally, section 5 concludes.

2 Theoretical framework

I consider a simplified version of the Alesina and Tabellini (1990) model. In this economy only lump sum taxes are available (assumed fixed to unity) and citizens have separable utility functions. The current incumbent can carry deficit from one period to the next and all the cumulative debt has to be canceled in full at the end of the game. I consider three periods in this game: in the first period, the incumbent faces uncertainty about who will be his successor since elections take place at the beginning of the next period. In period two, the incumbent learns who will be his successor but he remains in office until the beginning of period three (this represents the interlude). And in the third period the successor takes office. Fiscal policy is assumed to be fully discretionary in the model. While distinguishing here between discretionary and non-discretionary spending would not add any benefit, I will do consider it

⁶Indeed, the literature suggests that incumbents start to enhance their reelection chances up to one year before elections (Brender and Drazen, 2005; Shi and Svensson, 2006; Streb et.al, 2012).

⁷In the Online Appendix, Section A, I show that the main results of the paper are not sensitive to the exclusion of all control variables.

in my empirical analysis below.

Citizen i 's utility function in each period is as follows (the incumbent is one of the citizens):

$$v^i(c_t, l_t, g_t^A, g_t^B) = h(c_t) + v(l_t) + \alpha^i u(g_t^A) + (1 - \alpha^i) u(g_t^B)$$

where c_t and l_t are private consumption and leisure respectively, and $h'(x) > 0$, $h''(x) < 0$, $v'(x) > 0$, $v''(x) < 0$. Also $u'(x) > 0$, $u''(x) < 0$, $u'(1) = 1$ and g^A and g^B represents spending on public goods A and B respectively. $\alpha^i \in (0, 1)$ represents the relative importance consumer i attaches to public good A .

Since the incumbent charges citizens a fixed amount of lump sum taxes equal to one each period, the per-period budget constraint is (the wage and the price of consumption are equal to one)

$$\text{Total time}_t = c_t + l_t + 1.$$

Under this scenario, consumption and leisure per period will be the same for all citizens, thus we can focus on public consumption only.

In this economy there are only two parties, L and R . Without loss of generality, assume that $\alpha^L = 1$ and $\alpha^R = 0$, and that the incumbent in period 1 is from party L . Under this setting, the inter-temporal utility function of party L is

$$V(g_1^A, g_2^A, g_3^A, \delta) = u(g_1^A) + \delta E_1[u(g_2^A)] + \delta^2 E_1[u(g_3^A)].$$

The expectation reflects the uncertainty during period 1 about who will be elected at the beginning of period 2 for taking office at the beginning of period 3. The probability of being reelected is assumed to be exogenous and equal to $(1 - p^R)$. Under these assumptions, the incumbent's optimization problem is the following:

$$\max_{\{g_1^A, g_2^A, \tilde{g}_2^A, g_3^A\}} V(g_1^A, g_2^A, \tilde{g}_2^A, g_3^A, p^R, \delta)$$

$$st : g_1^A = 1 + d_1; g_2^A = 1 + d_2; \tilde{g}_2^A = 1 + \tilde{d}_2; g_3^A = 1 - \frac{d_1}{q^2} - \frac{d_2}{q}; -1 \leq d_1 \leq q + q^2; -1 \leq d_2 \leq q - \frac{d_1}{q};$$

$$-1 \leq \tilde{d}_2 \leq q - \frac{d_1}{q}.$$

where d_1 is the deficit generated during period 1 carried forward to period 3, and d_2 (\tilde{d}_2) is the deficit generated during period 2 after the incumbent learns that his party was re-elected (not re-elected), also carried forward to period 3. δ is the discount factor and $q = \frac{1}{1+r}$ the inverse of the gross interest rate. Note that the deficit during period 1 cannot be greater than the present value of all the future government revenues (i.e., $d_1 \leq q + q^2$), and surplus during period 1 cannot be greater than the current income during period 1 (i.e., $d_1 \geq -1$). The constraints on d_2 and \tilde{d}_2 are derived similarly, taking into consideration the deficit or surplus during period 1. Solving the problem above yields

Proposition 1. *The fiscal deficit in period 2 is larger if the incumbent's party is not reelected ($\tilde{d}_2^* > d_2^*$).*

Proof. The model is solved using backward induction. When the information about who the successor will be arises, the current incumbent updates during period 2 his inter-temporal consumption path. In particular, if the incumbent's party is not reelected the problem becomes

$$\max_{\tilde{d}_2} u \left(1 + \tilde{d}_2 \right) \quad st : -1 \leq \tilde{d}_2 \leq q - \frac{d_1}{q}.$$

This yields the upper corner solution,

$$\tilde{d}_2^* = q - \frac{d_1}{q}. \tag{2.1}$$

Instead, if the incumbent's party is reelected, the consumption plan is updated following the optimization:

$$\max_{d_2} u(1 + d_2) + \delta u \left(1 - \frac{d_2}{q} - \frac{d_1}{q^2} \right) \quad st : -1 \leq d_2 \leq q - \frac{d_1}{q},$$

which yields the following interior solution,

$$d_2^* = \left(1 - \frac{d_1}{q^2} - \left[u'^{-1} \left(\frac{\delta}{q} \right) \right]^{-1} \right) \left(\left[u'^{-1} \left(\frac{\delta}{q} \right) \right]^{-1} + \frac{1}{q} \right)^{-1}. \quad (2.2)$$

Since the boundaries are the same for both problems, and the solution is interior when the incumbent's party is re-appointed given that $d_1 \leq q + q^2$, but it is the upper bound when he is not, then it follows that $\tilde{d}_2^* > d_2^*$. ■

If the incumbent learns during period 2 that his successor will have different preferences over policy choices, he knows that in period 3 any remaining resources will be used to finance the provision of public goods that he does not favor (represented by public good B). Given this, as an optimal strategy, the incumbent over spends during period 2, providing the public goods he considers important and leaving no resources to the successor. Instead, if he or his party is reelected, he knows the successor will implement the policies he favors. Then, he will want to smooth public consumption by moderating public good provision during period 2, and leave resources for the last period.

In addition, when the information about the successor's identity arrives after the election motivates incumbents to change suddenly the budget deficit before the government change date. Under this fact, we expect the following:

Proposition 2. *If the incumbent discounts the future at the same rate as the market does (i.e., $\delta = q$), then in equilibrium (i) the deficit generated during period 1 is at least as large as the deficit generated during period 2 if the incumbent's party is reappointed; but (ii) the deficit of period 1 is at most as large as the deficit generated during period 2 if the incumbent's party is not reappointed ($d_2^* \leq d_1^* \leq \tilde{d}_2^*$). In*

addition, (iii) d_1^* approaches d_2^* [\tilde{d}_2^*] as the magnitude of a surprise win [defeat] decreases.

Proof. If $\delta = q$, then d_2^* showed in equation (2.2) becomes,

$$d_2^* = -\frac{d_1}{q(q+1)}. \quad (2.3)$$

The optimization problem during the first period is

$$\max_{d_1} u(1+d_1) + \delta \left[(1-p^R) u(1+d_2^*) + (p^R) u\left(1+\tilde{d}_2^*\right) \right] + \delta^2 (1-p^R) u\left(1 - \frac{d_2^*}{q} - \frac{d_1}{q^2}\right)$$

$$st : -1 \leq d_1 \leq q^2 + q.$$

The first order condition for an interior solution is

$$u'(1+d_1) + \delta \left[(1-p^R) u'(1+d_2^*) \frac{d(d_2^*)}{d(d_1)} + (p^R) u'(1+\tilde{d}_2^*) \frac{d(\tilde{d}_2^*)}{d(d_1)} \right] + \delta^2 (1-p^R) u' \left(1 - \frac{d_2^*}{q} - \frac{d_1}{q^2} \right) \left(-\frac{1}{q^2} - \frac{1}{q} \frac{d(d_2^*)}{d(d_1)} \right) = 0,$$

and after some algebra we get

$$u'(1+d_1) = (1-p^R) u'(1+d_2^*) + (p^R) u'(1+\tilde{d}_2^*) \quad (2.4)$$

from which directly follows that $d_2^* \leq d_1 \leq \tilde{d}_2^*$, proving part (i) and (ii) of Proposition 2. Rewriting this inequality as $d_2^* - d_1 \leq 0 \leq \tilde{d}_2^* - d_1$ clearly shows that during an electoral defeat deficit increases (i.e., $\tilde{d}_2^* - d_1 = q - d_1 \left(\frac{1}{q} + 1 \right) \geq 0$), while during an electoral win deficit decreases (i.e., $d_2^* - d_1 = -d_1 \left(\frac{1}{q(q+1)} + 1 \right) \leq 0$). To prove part (iii) of Proposition 2, I first define the implicit function that comes

from combining (2.4) with (2.3) and (2.1),

$$F(d_1, p^R) = u'(1 + d_1) - (1 - p^R) u'(1 + d_2^*(d_1)) - (p^R) u'(1 + \tilde{d}_2^*(d_1)) = 0,$$

and then calculate the change in the deficit during period 1 for a given increase in the probability of being defeated,

$$\frac{\Delta d_1}{\Delta p^R} = - \left(\frac{\frac{\partial F(d_1, p^R)}{\partial p^R}}{\frac{\partial F(d_1, p^R)}{\partial d_1}} \right) > 0, \quad (2.5)$$

which leads to

$$\frac{\Delta (d_2^* - d_1)}{\Delta p^R} < 0 \text{ given that } d_2^* - d_1 = -d_1 \left(\frac{1}{q(q+1)} + 1 \right) \leq 0 \quad (2.6)$$

for electoral victories, and

$$\frac{\Delta (\tilde{d}_2^* - d_1)}{\Delta p^R} < 0 \text{ given that } \tilde{d}_2^* - d_1 = q - d_1 \left(\frac{1}{q} + 1 \right) \geq 0 \quad (2.7)$$

for electoral defeats.

Note that (2.6) and (2.7) prove part (iii) of Proposition 2. ■

Parts (i) and (ii) of proposition 2 can be interpreted in the following way: since the incumbent does not know whether his party will be re-appointed, he increases the deficit moderately. Instead, when he fully learns in period 2 who will come next, he updates the public consumption plan either by increasing the deficit even more (if a politician with different policy preferences was elected), or by decreasing it (if a politician with similar policy preferences was elected).

Understanding part (iii) of proposition 2 requires the inspection of (2.6) and (2.7) for different values of $p^R \in (0, 1)$. First, for the extreme values $p^R = 0$ and $p^R = 1$ we know from (2.4) above that $d_2^* = d_1^* = 0$ and $\tilde{d}_2^* = d_1^* = q^2/(1 + q)$, respectively. In both extreme scenarios, the change in

the deficit is zero indicating that knowing exactly what will happen during elections (i.e., electoral victories or defeats are not perceived as surprises) does not alter the public consumption plan, neither the deficit plan. Instead, this plan changes when the result of the upcoming elections is unknown (i.e., the incumbent does not know whether he will lose or not). Now, we see how a change in p^R affects the change in the deficit using (2.6) and (2.7). As these functions make clear, changes in the deficit occur as a result of “surprises” in the electoral outcome, and the higher the magnitude of the electoral surprise the higher the change in the deficit. As (2.6) shows, when the magnitude of a surprise win increases (i.e., p^R increases) the deficit decrease enlarges (i.e., $\frac{\Delta(d_2^* - d_1)}{\Delta p^R} < 0$ given $d_2^* - d_1 \leq 0$). While (2.7) shows that when the magnitude of a surprise defeat increases (i.e., p^R decreases) the deficit increase enlarges (i.e., $\frac{\Delta(\tilde{d}_2^* - d_1)}{\Delta p^R} < 0$ given $\tilde{d}_2^* - d_1 \geq 0$).

Note that, in the context of this model, extended interlude periods result in large fluctuations in public spending, especially when the electoral results are unexpected.

Below, I estimate the effect of the magnitude of the electoral surprise on the change in the budget deficit. I expect to find that the higher the magnitude of the electoral surprise the higher the change in the deficit, as stated in proposition 2. Specifically, when the magnitude represents a surprise win (i.e., the incumbent’s party unexpectedly won reelection) I expect the deficit to decrease, as it is shown by equation (2.6). Instead, when the magnitude represents a surprise defeat (i.e., the incumbent’s party unexpectedly lost the election) I expect the deficit to increase, as it is shown by equation (2.7).

3 Data and empirical strategy

3.1 Data and variable definitions

To test for the strategic use of deficit hypothesis, I use monthly data on Presidential democracies from Latin America during the periods 1980:1-2005:12. The countries in the sample are Argentina, Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, Honduras, Mexico, Nicaragua, Panama, Peru, Uruguay and Venezuela. I only consider democratic periods based on Polity IV Project. To define the

relevant election date, I use presidential elections following the classification in the Database of Political Institutions (DPI). The electoral calendar and the vote share outcome per party were taken from the Center on Democratic Performance at Binghamton University, SUNY.⁸ Presidential elections take place every 4 to 6 years. All these countries have at least one month of interlude per election, which is necessary for identification purposes.⁹ Table 1 shows the summary statistics of executed monthly fiscal deficit as a percentage of GDP from the central government and other variables used in the analysis, available at International Monetary Fund's International Financial Statistics. To construct monthly GDP figures in nominal terms, I follow Fernandez (1981) distribution procedure, using monthly import series. This allows me to compute the ratio of the executed budget deficit to GDP on monthly basis. Since the imputation procedure creates a measurement error that can generate attenuation biases of the estimators, the preferred independent variable throughout the paper will be the logarithmic difference between expenditure and revenue, where imputation is not necessary given that fiscal data is available at monthly frequencies.¹⁰ Summary statistics on this logarithmic difference is also shown in Table 1.

During times where the president's party controls the legislature, the manipulation of the fiscal policy for political gain may be exacerbated. For that reason I also use the variable *Allhouse*, from the Database of Political Institutions (DPI), which takes value one if the president's party controls the legislature, and zero otherwise. Hicken et al. (2005) use this variable to study how democracies recover from economic shocks in scenarios where legislative obstacles to changes in economic policies are in place.

⁸The probability of being defeated is defined as one minus the incumbent's party ex-post vote share. An alternative definition was constructed and the main results throughout the paper did not change. It was constructed taking into consideration the ex-post vote share of the two parties that got the highest shares (it usually represents more than 70% of total votes). For example, if the incumbent's party gets the highest vote share, say 40%, and the second party gets 35%, the probability of electoral defeat is calculated as $1 - 0.40 / (0.40 + 0.35)$. Instead, if the incumbent got the third place or below, the corresponding probability is considered as one. Results under this alternative definition are available upon request.

⁹If there is a second round election and the incumbent's party runs during that round, the interlude is constructed taking into consideration only the months that lies between the second round and the government change date. Instead, if the incumbent's party does not run during the second round, the interlude is defined as the months that lie between the first round and the government change month. Since the vote share does not change considerably between the first and second round when the incumbent's party runs in both, I only consider the first round vote share for the construction of the probability of electoral defeat.

¹⁰The main hypotheses of my paper are tested successfully with both independent variables. Results with deficit over imputed GDP are partially shown in the paper. The full set of results are available upon request.

To which extent can the executive adjust the fiscal policy according to a surprise defeat/win in presidential transitions after the execution of an approved budget? In fact, budget laws of most Latin American countries give the executive the authority –through the chief of ministers, ministry of finance, and/or the president him/herself– to change or reallocate expenditures after the execution of an approved budget (Curristine and Bas, 2007). In most countries also, the executive can create new programs, which in fact raises government spending. Despite the executive discretion over budget modifications, the legislature also plays an important role, either directly or indirectly. In general, the modifications to an existing and executed budget require legislative approval (Curristine and Bas, 2007). Therefore, a defeated president should have more opportunities to raise government spending during interludes when a legislative majority is aligned with him/her than when it is not. But even when approval from the legislative branch is not mandated by the budget law, there are implicit mechanisms from which a legislature may balance the executive’s discretion over budget modifications. First, the executive can circumvent the budget law by using its constitutional decree authority to promote such modifications.¹¹ However, the executive may be discouraged to use its decree authority during a divided government since, either explicitly or tacitly, decrees have to be approved by the legislature, being this unlikely when it is controlled by the opposition (Mainwaring and Shugart, 1997; Negretto, 2004; Pereira et al., 2005). Second, the legislature plays an important role on budget oversight. Since “*opposition parties have the greatest incentive to oversee government*” (Messick, 2002:2), “*when the ruling coalition holds a disciplined majority position in parliament, as is often the case in Latin American presidential systems, there exists a possibility of control dilution*” (Santiso, 2004:69). Then, compliance with the budget law may be far from perfect under unified governments, giving the executive ample opportunities to raise spend-

¹¹There is indeed evidence that executive decrees in Latin America are used for political purposes. For example, in the 1999 Argentinean presidential election, the executive had almost doubled (from 24 to 42) the amount of presidential decrees –decretos de necesidad y urgencia– in relation to 1998. Moreover, there were emergency decrees during the presidential transition regarding budget modifications (e.g., modificacion del presupuesto general - ejercicio 1999, 1356/99). Since the executive’s party had faced an electoral defeat, those emergency decrees may have been motivated by the strategic use of debt hypothesis described above. In Peru, during January 1994 and March 2001, about 300 emergency decrees had clear effects on the budget, while about 200 directly amended the budget (Santiso, 2004). Brazil provides interesting cases too, under a “*somewhat more amiable Congress*” (Shugart and Haggard, 2001:93), president Cardoso has issued 2609 presidential decrees –medidas provisórias com força de lei– during his first presidency with an 81% success rate, five times more than his predecessor Franco (Pereira et al., 2005).

ing in contradiction to its budgeted counterpart. Overall, these evidence indicate that the legislature is the most relevant moderating factor of the executive discretion over budget modifications.¹²

Regarding the timing of the fiscal manipulation, there is empirical evidence showing that it can be short-lived (as it is also predicted by the model of Section 2 for the interludes). Akhmedov and Zhuravskaya (2004) find that political cycles in public expenditure take place around a month before elections in Russia (in particular on education and urbanization spending) but not before, which indicates that such cycles would not have been traced with annual data. There is also ample evidence of fiscal manipulation in developed countries. Larcinese et al. (2006) find that US federal transfers to a state are affected by the alignment between the president and the state governors and by the alignment between the former and the majority of the state delegates in the House. Berry et al. (2010) find that the president has ample opportunities to influence the allocation of funds to US localities, both before and after congressional approval of the budget. Before budget approval, the threat of presidential veto gives members of Congress the incentive to keep the budget proposal close to the initial form proposed by the president (McCarty, 2000); and after budget approval, through executive action the president can create new agencies that are significantly less isolated from presidential control than are agencies created through legislation (Howell and Lewis, 2002). The result is that districts with an aligned House Representative with the president receives on average more federal funds.

Below, I present the empirical strategy used to estimate the effect of the magnitude of the electoral surprise on the change in the budget deficit.

¹²I provide empirical evidence of this claim in the Online Appendix, Section D. I found that divided government is more effective in moderating the executive discretion over budget modifications around interludes than budget institutions themselves.

Table 1: Definition of variables and descriptive statistics

Variable	Description	Mean	Standard error	Min	Max	Frequency	Source
$100 \times (EXP - REV)/GDP$	Executed fiscal deficit as percentage of imputed GDP.	1.893	5.79	-32.09	71.718		IFS
$\ln(EXP) - \ln(REV)$	Log of expenditure minus log of revenue.	0.107	0.299	-1.405	1.754		IFS
<i>ELE</i>	Dummy variable that takes value one for the last nine months before an election takes place.	0.16	0.36	0	1	550	SUNY & Others
$ELE \times PROB$	One minus president's party vote share used as a proxy of the probability of being defeated for the last nine month before elections.	0.69	0.19	0.36	1.00		SUNY & Others
<i>INTERLUDE</i>	Dummy variable that takes value one if the month/s lie between the election and the government change date.	0.03	0.17	0	1	110	
<i>INTERLUDE LOSS</i>	Dummy variable that takes value one if the month lies within the interlude and the successor is NOT from the incumbent's party.	0.02	0.14	0	1	73	DPI
$INTERLUDE \times (1 - ALLHOUSE)$	During the interlude, dummy variable that takes value one if the executive does NOT control the legislature.	0.686	0.466	0	1	70	DPI
$INTERLUDE LOSS \times (1 - ALLHOUSE)$	During the interlude, when the president's party is not reelected, dummy variable that takes value 1 if the outgoing president does NOT control the legislature.	0.353	0.479	0	1	54	DPI
<i>GOVCH</i>	Dummy that takes value 1 for the nine months after a constitutional government change.	0.16	0.37	0	1	567	SUNY & Others

Notes: IFS refers to IMF International Financial Statistics; DPI to Database of Political Institutions; and SUNY to the Center on Democratic Performance-Election Result Archive, Binghamton University, SUNY. For calculating all the descriptive statistics, non-democratic periods were excluded based on Polity IV project.

3.2 Methods and econometric specification

Based on propositions 1 and 2, I estimate the effect of a change in the probability of being defeated between pre-electoral and interlude periods on the budget deficit using the following autoregressive econometric specification:

$$d_{it} = \sum_{n=1}^{12} \beta_n d_{i,t-n} + \sum_{j=1}^N \alpha_j x_{jit} + \gamma ELE_{it} + \theta ELE_{it} \times PROB_{it} + \tau INTERLUDE_{it} + \lambda INTERLUDE LOSS_{it} + \nu GOVCH_{it} + \sum_{i=1}^N \sum_{j=1}^6 \kappa_{ij} T_{it}^{(j)} + \sum_{i=1}^N \sum_{m=1}^{12} \varphi_{im} D_{im} + e_{it}. \quad (3.1)$$

Here, d_{it} is the logarithmic difference between expenditure and revenue for country i during month t .¹³ The first terms on the right hand side ($\sum_{n=1}^{12} \beta_n d_{i,t-n}$) represents twelve lags of the dependent variable that controls for the persistence of the fiscal policy.¹⁴ Two time-varying controls (x) at monthly frequencies are included: (1) *real import growth rate* _{it} is used as a proxy variable of monthly real GDP growth. Since they are highly correlated at annual frequencies, it is assumed that they are highly correlated at monthly frequencies too. Real GDP growth rate –or any transformation of it– is a traditional control in the political budget cycles and the strategic used of debt literature (e.g., Lambertini, 2003; Brender and Drazen, 2005; Shi and Svensson, 2006; Streb et al., 2009; Drazen and Eslava, 2010; among others). (2) $\ln(1 + inflation)$ is also included, as in Streb et al. (2009). Inflationary tax can be used if an incumbent cannot cover up deficits by issuing more debt. But in high inflation regimes, both sources of financing may be unavailable. Under this scenario, the effect of a surprise defeat on the fiscal deficit may be smaller, which may produce biased estimates. Therefore, $\ln(1 + inflation)$ should address this potential concern because it captures high inflation regimes.¹⁵ ELE_{it} is a dummy variable

¹³As I have explained in Section 3.1 above, monthly fiscal deficit as a percentage of imputed GDP can be used alternatively. Results are almost invariant, although a measurement error is introduced due to the imputation method itself. The full set of results under deficit as a percentage of imputed GDP is available upon request.

¹⁴Regression results survive to the exclusion of these lags. Results without them are not reported, but available upon request.

¹⁵The exclusion of *real import growth rate* and $\ln(1 + inflation)$ does not bias the results at all. Results without these

that takes value 1 for the last nine months before an election at month t takes place, 0 otherwise.¹⁶ $PROB_{it}$ is 1 minus the incumbent's party vote share, used as a proxy of the probability of electoral defeat.¹⁷ $INTERLUDE_{it}$ takes value 1 if the month t lies within an interlude period, 0 otherwise. $INTERLUDELOSS_{it}$ is a dummy variable that takes value 0 when the incumbent learns that his party was re-appointed during the interlude, 1 if he learns that his party was voted out. $GOVCH_{it}$ is a dummy variable that takes value 1 for the nine months after a constitutional government change in order to test whether the political budget cycle is reversed. Unfortunately, other variables that I would like to include as controls are not available at monthly frequencies. Given this limitation, instead of using variables at annual frequencies and following arbitrary interpolation criteria, I decided to control for all types of country-trend heterogeneity by using deterministic time-trend polynomials of order 6 per country (i.e., $\sum_{i=1}^N \sum_{j=1}^6 \kappa_{ij} T_{it}^{(j)}$ in equation (3.1)). Where $T = 1$ for the year 1980, $T = 2$ for 1981, $T = 3$ for 1982, and so on. Under this set of deterministic time-trend polynomials of order 6 per country, I am able to control for medium run determinants of fiscal policy per country.¹⁹ ²⁰ ²¹ Furthermore,

controls are not reported in the paper, but available upon request.

¹⁶This dummy variable captures the average effect of each of those nine months. Results with dummies for each of those months are not reported, but available upon request.

¹⁷Previous studies have relied on ex-ante opinion polls rather than ex-post electoral outcomes to construct proxies of probabilities of electoral defeat arguing that the latter is endogenous (e.g., Lambertini, 2003). However, as I have stated in the introduction, ex-ante results are endogenous as well. Following the literature on Political Budget Cycles, incumbents start enhancing their re-election prospects up to one year before elections take place. Since ex-ante opinion polls are conducted usually within six months before elections, those survey results may be already contaminated by the opportunistic political behavior.

¹⁸In the Online Appendix, Section C, I follow a dichotomic approach in the construction of the probability of electoral defeat, i.e., a dummy variable taking value 1 for high probability of electoral defeat, 0 otherwise. Results are qualitatively the same.

¹⁹When deterministic time-trend polynomials are excluded from the regression, results does not change significantly. Results without time-trend polynomials are not reported, but available upon request.

²⁰Another way to control for annual-trend endogeneity is by using country-year fixed effects. Given the dimension of my panel dataset (monthly data of 13 countries during 25 years), these fixed effects would be composed by $13 \times 25 - 1$ dummy variables. For example, for country $i = 1, \dots, 13$ during year $t = 1980, \dots, 2005$, the dummy variable, say CY_{it} , takes value 1, 0 otherwise. Under the country-year fixed effect approach, results are very similar to the approach used throughout the paper. Results under country-year fixed effect are not reported, but available upon request.

²¹A reviewer pointed out that results may be driven in part by economic recessions, because in such a context the probability of being defeated and government deficits may be simultaneously higher. Therefore, estimators such as $ELE \times PROB$ may contain a significant upward bias. These sets of deterministic trends per country, in combination with *real import growth rate* and $\ln(1 + inflation)$, also control for economic recessions, which may address that potential concern. Moreover, in the Online Appendix, Section B, I provide additional evidence that the mechanical generation of deficits due to recessions are not likely to drive the results.

I control for seasonal effects per country using country-month fixed effects (i.e., $\sum_{i=1}^N \sum_{m=1}^{12} \varphi_{im} D_{im}$ in equation (3.1)). These fixed effects are composed by $13 \times 12 - 1$ dummy variables. For example, for country $i = 1, \dots, 13$ during month $m = 1, \dots, 12$, the dummy variable D_{im} takes value 1, 0 otherwise. Since Latin American elections are constitutionally fixed and then held the same calendar month in each country, any changes in the fiscal stances between the pre-electoral and the interlude periods may thus reflect regular calendar fluctuations in budgetary accounts, rather than any intended changes in fiscal policy stance. These country-month fixed effects address this potential concern.²²

Although the empirical model with lagged dependent variables, time-varying controls, deterministic time-trend polynomials, and country-month fixed effects described in equation (3.1) controls for several sources of unobserved heterogeneity, the estimation results may still contain biased estimates if unobserved heterogeneity changes systematically around interludes. Even though there is no direct way to tackle this potential issue, high within-country variability of the “magnitude of electoral surprise” can address this potential concern. For example, if in one election the electoral defeat/victory conforms to expectations (i.e., small electoral surprise) while in the next election doesn’t (i.e., large electoral surprise), we should expect –based on the model of Section 2– no increase/decrease in the budget deficit for the former case while a high increase/decrease for the latter. Then, this high within-country variability on the magnitude of the electoral surprise consequently produces a high within-country variability in the fiscal deficit between pre-electoral and interlude periods, masking any given possible change in the fiscal deficit due to changes in the unobserved heterogeneity around interludes. In order to explore whether the magnitudes of electoral surprise vary considerably within each country, in Table 2 I construct coefficients of variation per country of those magnitudes. Since an electoral defeat represents, by definition, a probability of electoral defeat equal to 1, given that $PROB_{it}$ is the probability of electoral defeat, the difference $1 - PROB_{it}$ represents a positive electoral surprise defeat. Analogously, since an electoral win represents a probability of electoral defeat equal to 0, the difference $0 - PROB_{it}$ represents a negative electoral surprise defeat (and a positive electoral surprise victory).

²²When these seasonal effects are excluded from the regression, results does not change significantly. Results without seasonal effects are not reported, but available upon request.

Then, I compute the mean (shown in Column 1) and the standard deviation (shown in Column 2) per country of the magnitudes of surprise defeat. Indeed, we see that the means of the surprise defeat per country are almost always negative and small in relation to the standard deviations, creating coefficients of variation above 2 (shown in Column 3), which are considered high.²³ These evidence indicate the existence of high within-country variability of the magnitudes of surprise defeat, which potentially tackles the problem of any given change in the unobserved heterogeneity around interludes. In addition, as I have explained above, I will be testing for differential effects between presidential transitions when the president's party, after an electoral defeat, controls the legislature ($1 - ALLHOUSE = 0$) and when it does not ($1 - ALLHOUSE = 1$). Given that almost all the countries possess interludes under unified governments and others under divided ones within the period of study, in reality, this acts as another source of within-country variability during interludes that can potentially contribute to mask unobserved heterogeneity around presidential transitions. Indeed, the main results below are not sensitive to the simultaneous exclusion of all the control variables mentioned above (i.e., lagged dependent variables, time-varying controls, deterministic time-trend polynomials, and country-month fixed effects). This indicates that the empirical strategy developed in this paper produces plausible exogenous changes in the probability of being defeated that in essence affect the executed budget deficit, and not vice-versa.²⁴

²³The fact that the average electoral surprise defeat is negative indicates that the surprise win is positive, which is consistent with the incumbency advantage theory.

²⁴Results with no controls are reported, described, and compared with results with controls in the Online Appendix, Section A. Essentially, results are not sensitive to the exclusion of all the control variables.

Table 2: Electoral surprise defeat. Descriptive statistics by country

Country (<i>i</i>)	$mean_i(I_{it} - PROB_{it})$	$std\ dev_i(I_{it} - PROB_{it})$	$ std\ dev_i/mean_i $
Argentina	-0.12	0.51	4.44
Brazil	-0.06	0.30	5.15
Colombia	-0.15	0.47	3.09
Costa Rica	0.11	0.51	4.85
Dom. Rep.	-0.20	0.44	2.23
Ecuador	-0.23	0.50	2.19
Honduras	-0.04	0.52	12.39
Mexico	-0.22	0.50	2.32
Nicaragua	-0.01	0.42	43.72
Panama	-0.10	0.42	4.37
Peru	-0.01	0.25	17.03
Uruguay	0.01	0.46	51.48
Venezuela	-0.06	0.37	6.03

Notes: $I_{it} = 1$ if the president's party was voted out, $I_{it} = 0$ if the president's party was re-elected. $PROB_{it}$ is one minus the ex-post president's party vote share, used as a proxy of the probability of electoral defeat. An electoral defeat represents, by definition, a probability of electoral defeat equal to 1, therefore the difference $I_{it}[= 1] - PROB_{it}$ represents a positive electoral surprise defeat, which means that the incumbent's party was voted out. Analogously, an electoral surprise victory represents a probability of electoral defeat equal to 0, therefore the difference $I_{it}[= 0] - PROB_{it}$ represents a negative electoral surprise defeat, which means the incumbent's party was re-elected. Voting data comes from the Center on Democratic Performance-Election Result Archive, Binghamton University, SUNY. Non-democratic periods were excluded based on Polity IV project.

Using ex-post electoral outcomes, as it is done in this paper, or ex-ante opinion polls, as it is done in Lambertini (2003),²⁵ to construct proxies of the probability of electoral defeat, $PROB_{it}$, produces potentially endogenous measures of such probability. Based on my discussion above, my empirical design still provides a plausible exogenous variation in the construction of its change. But even if it did not, time-varying controls would have played a crucial role on tackling that endogeneity issue. First, $PROB_{it}$ could be negatively correlated with the macroeconomic performance. If incumbents' parties face higher probabilities of being defeated during elections when the economy faces a recession, then not controlling for the macroeconomic performance would produce bias estimates. This potential issue is tackled by including in the regression *real import growth rate*, a proxy of monthly real GDP growth rate, and $\ln(1 + inflation)$ since they are highly correlated with the economic performance. Second, $PROB_{it}$ could be affected by the reverse causality given the political budget cycles hypothesis (Rogoff

²⁵For a brief discussion, see footnote 17.

and Sibert, 1988; Rogoff, 1990; Shi and Svensson, 2006), i.e., expansionary fiscal policy before elections may be used to boost the economic activity in order to increase the chances of being re-elected. But this issue is tackled with the inclusion of the twelve lagged deficits on equation (3.1), i.e., $\sum_{n=1}^{12} \beta_n d_{i,t-n}$, controlling for any fiscal deficit increase before elections that attempts to affect $PROB_{it}$.

Following equation (3.1), the effect of the change in the probability of being voted out on the change in the fiscal deficit is,

$$E(\Delta d \mid win) = INTERLUDE - (ELE + ELE \times PROB) \quad (3.2)$$

for electoral wins, and

$$E(\Delta d \mid defeat) = INTERLUDE LOSS + INTERLUDE - (ELE + ELE \times PROB) \quad (3.3)$$

for electoral defeats.

In correspondence to the model of Section 2 above, from equations (2.6) and (3.2) it follows that $E(\Delta d \mid win) \approx d_2^* - d_1 \leq 0$, while from (2.7) and (3.3) $E(\Delta d \mid defeat) \approx \tilde{d}_2^* - d_1 \geq 0$. Moreover, (2.6) establishes that the deficit decrease enlarges as the surprise win ($0 - p^R$) increases (both in absolute value), i.e., $\frac{\Delta(d_2^* - d_1)}{\Delta p^R} < 0$. Note that $\frac{\Delta(d_2^* - d_1)}{\Delta p^R} < 0$ can be adapted to a non-infinitesimal change in the probability of being defeated (p^R), namely $(d_2^*(p_a^R) - d_1(p_a^R)) < (d_2^*(p_b^R) - d_1(p_b^R)) < 0$ for any $p_a^R > p_b^R$, which corresponds to (3.2) as follows: $(d_2^*(p_a^R) - d_1(p_a^R)) \approx E(\Delta d \mid win, PROB = p_a^R) < (d_2^*(p_b^R) - d_1(p_b^R)) \approx E(\Delta d \mid win, PROB = p_b^R) < 0$ for any $p_a^R > p_b^R$. So the empirical tests I am going to run are

$$E(\Delta d \mid win, PROB = p_a^R) < E(\Delta d \mid win, PROB = p_b^R) < E(\Delta d \mid win, PROB = 0) \approx 0$$

$$\text{for } p_a^R > p_b^R > 0, \quad (3.4)$$

which implies that as the probability of electoral defeat increases, the magnitude of a surprise win increases, therefore the deficit decrease increases (in absolute value). Analogously, the same construction is done for electoral defeats, i.e., $0 < E(\Delta d \mid defeat, PROB = p_a^R) \approx (\tilde{d}_2^*(p_a^R) - d_1(p_a^R)) < E(\Delta d \mid defeat, PROB = p_b^R) \approx (\tilde{d}_2^*(p_b^R) - d_1(p_b^R))$ for any $p_a^R > p_b^R$, where the empirical tests to run are

$$E(\Delta d \mid defeat, PROB = p_b^R) > E(\Delta d \mid defeat, PROB = p_a^R) > E(\Delta d \mid defeat, PROB = 1) \approx 0$$

for $p_a^R > p_b^R > 0$, (3.5)

implying that as the probability of electoral defeat increases, the magnitude of the surprise defeat decreases, therefore the deficit increase decreases.

Equation (3.1) does not control for divided governments. Therefore, based on the explanation presented in Section 3.1 above, the estimations on (3.4) and (3.5) could be attenuated since results would be a weighted average between elections where the president's party does not control the legislature –where there would be no effects– and elections where president's party controls it –where all the effects are expected to come from. In order to control for divided governments, I extend equation (3.1) as follows,

$$\begin{aligned} d_{it} = & \sum_{n=1}^{12} \beta_n d_{i,t-n} + \sum_{j=1}^N \alpha_j x_{jit} + \gamma ELE_{it} + \theta ELE_{it} \times PROB_{it} + \\ & \tau INTERLUDE_{it} + \lambda INTERLUDE LOSS_{it} + \nu GOVCH_{it} + \\ & \gamma_Z ELE_{it} \times Z_{it} + \theta_Z ELE_{it} \times PROB_{it} \times Z_{it} + \tau_Z INTERLUDE_{it} \times Z_{it} + \\ & \lambda_Z INTERLUDE LOSS_{it} \times Z_{it} + \sum_{i=1}^N \sum_{j=1}^6 \kappa_{ij} T_{it}^{(j)} \\ & + \sum_{i=1}^N \sum_{m=1}^{12} \varphi_{im} D_{im} + e_{it}, \end{aligned} \quad (3.6)$$

where $Z_{it} = 1 - Allhouse$. So if $Z_{it} = 1$ the president's party does not control the legislature, $Z_{it} = 0$ otherwise. As I have explained in sections 1 and 3.1, in times of unified governments the manipulation

of the fiscal policy for political gain may be exacerbated. Therefore, we expect for a given probability of electoral defeat that

$$|E(\Delta d | y, PROB = x_0, Z = 0)| > 0 \text{ and } |E(\Delta d | y, PROB = x_0, Z = 1)| \approx 0 \quad (3.7)$$

for $y = \{win, defeat\}$.

That is to say, the predictions of equations (3.4) and (3.5) only applies when the president enjoys higher political discretion (i.e., $Z = 0$) because he/she is allowed to manipulate the deficit more than when the legislature is controlled by the opposition (i.e., $Z = 1$).

Finally, in order to test Proposition 1, note that $E(\Delta d | defeat, PROB = x_0) - E(\Delta d | win, PROB = x_0) = INTERLUDE LOSS \approx \tilde{d}_2^* - d_2^* > 0$. This means that the deficit is higher during interludes when an incumbent faces an electoral defeat. For here also, this difference should be significantly higher when the executive enjoys higher political discretion, i.e., $E(\Delta d | defeat, PROB = x_0, Z = 0) - E(\Delta d | win, PROB = x_0, Z = 0) > 0$ and $E(\Delta d | defeat, PROB = x_0, Z = 1) - E(\Delta d | win, PROB = x_0, Z = 1) \approx 0$.

4 Estimation results

4.1 General findings

In this section I present the main empirical finding of the paper. I first estimate simpler versions of equations (3.1) and (3.6) without the inclusion of the probability of being defeated in order to get a general idea on how the budget deficit behaves during the two relevant periods of my study: pre-electoral and presidential transition periods.

Table 3 Column 1 shows the results when the dummy variable for divided governments is not included (i.e., $1 - Allhouse = 1$ means that the legislative houses are not controlled by the president's party, $1 - Allhouse = 0$ means otherwise). There, we observe the traditional increase in

the budget deficit during the last nine months before elections take place ($ELE = 0.072^{***}$). However, we do not see any statistically significant deficit increase during the interludes when the president faces an electoral defeat (i.e., $INTERLUDE LOSS$ is insignificant). In Column 2, where $1 - Allhouse$ is used as a measure of divided governments, we observe that the pre-electoral cycle is higher when governments are unified (i.e., $ELE = 0.118^{***}$ in Column 2, higher than $ELE = 0.072^{***}$ in Column 1). Note that the pre-electoral cycle is canceled out during divided governments (i.e., $ELE \times (1 - ALLHOUSE) = -0.073^{***}$, and $ELE + ELE \times (1 - ALLHOUSE) \approx 0$), which corroborates the findings that a divided government moderates the discretion of the executive (Alesina and Rosenthal (1995) for the US; Streb et al. (2009) and Streb et al. (2012) for Latin American and OECD countries). Now, focusing the attention on presidential transitions, we observe that the budget deficit increases substantially when the executive faces an electoral defeat under unified governments ($INTERLUDE LOSS = 0.258^{**}$), while such deficit increase does not occur under divided ones (i.e., $INTERLUDE LOSS \times (1 - ALLHOUSE) = -0.285^*$ and $INTERLUDE LOSS \times (1 - ALLHOUSE) + INTERLUDE LOSS \approx 0$). These demonstrate the importance of controlling for moderating factors over the executive discretion when studying the manipulation of the fiscal policy for political gain. Overall, Proposition 1 of the model above is upheld by the data when the executive's party controls the legislature. Precisely, $INTERLUDE LOSS = 0.258^{**}$ means that the budget deficit increases around 26% during the interludes when the president's party is voted out in relation to when it is not.

Columns 4 and 5 replicate the results of columns 1 and 2 but for deficit as a percentage of imputed GDP, rather than the logarithmic difference. Results are similar but, as I have explained above, the logarithmic difference is more reliable since a measurement error in the dependent variable is not introduced. Given this, I will use the logarithmic difference for the rest of my analysis below.²⁶

²⁶The full set of results with deficit as a percentage of imputed GDP is available upon request.

Table 3. The effect of electoral defeats on fiscal deficit around interludes.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable:	$\ln(EXP_t) - \ln(REV_t)$			$(EXP_t - REV_t)/imputedGDP_t$		
<i>ELE</i>	0.072*** [0.013]	0.118*** [0.021]	-0.084 [0.065]	1.104*** [0.235]	1.694*** [0.346]	-0.846 [1.212]
<i>ELE</i> × <i>PROB</i>			0.348*** [0.107]			4.367** [1.929]
<i>ELE</i> × (1 − <i>ALLHOUSE</i>)		-0.073*** [0.026]	0.244*** [0.094]		-0.909** [0.453]	2.941* [1.775]
<i>ELE</i> × <i>PROB</i> × (1 − <i>ALLHOUSE</i>)			-0.502*** [0.145]			-6.098** [2.670]
<i>INTERLUDE</i>	0.029 [0.061]	-0.068 [0.095]	-0.074 [0.095]	0.855 [1.134]	-1.185 [1.563]	-1.276 [1.561]
<i>INTERLUDE</i> × (1 − <i>ALLHOUSE</i>)		0.171 [0.118]	0.182 [0.118]		3.530* [2.142]	3.671* [2.137]
<i>INTERLUDE LOSS</i>	0.077 [0.071]	0.258** [0.124]	0.266*** [0.124]	1.576 [1.382]	5.968*** [2.140]	6.075*** [2.137]
<i>INTERLUDE LOSS</i> × (1 − <i>ALLHOUSE</i>)		-0.285* [0.147]	-0.298** [0.147]		-6.637** [2.770]	-6.800** [2.764]
<i>GOVCH</i>	-0.021* [0.013]	-0.024* [0.013]	-0.022* [0.013]	-0.382* [0.217]	-0.413* [0.224]	-0.389* [0.225]
Observations	3,002	2,942	2,942	2,984	2,924	2,924
R-squared	0.480	0.472	0.474	0.494	0.494	0.495

Notes: This table shows regression results that come from estimating equations (3.1) –columns 1 and 4– and (3.6) –columns 2, 3, 5 and 6. Controls included, but not reported, are 12 lags of the dependent variable, $\ln(1 + inflation)$, *real import growth rate*, month-country fixed effect, and deterministic time-trends of order 6 polynomial per country. Countries used in the regressions are: Argentina, Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, Honduras, Mexico, Nicaragua, Panama, Peru, Uruguay and Venezuela. Non-democratic episodes were excluded from the sample based on Polity IV project. Robust standard errors are reported in brackets. *, **, *** indicates significance at 10, 5 and 1% respectively.

4.2 Testing the effect of electoral surprises on fiscal deficit

To test Proposition 2, I study here the effect of the magnitude of electoral surprises on the fiscal deficit. To do so, I regress equation (3.6) including the probability of being defeated interacted with pre-electoral dummy variables (i.e., $ELE \times PROB$ and $ELE \times PROB \times (1 - ALLHOUSE)$). Results are displayed in Table 3 Column 3 for the logarithmic difference. Then, I conduct the following tests in correspondence to Proposition 2 of the model of Section 2: For electoral wins when the president’s party controls the legislature, as shown in (3.4), $E(\Delta d | win, PROB = p_a^R, Z = 0) < E(\Delta d | win, PROB = p_b^R, Z = 0) < E(\Delta d | win, PROB = 0, Z = 0) \approx 0$ for $p_a^R > p_b^R > 0$; and for electoral defeats, as shown in (3.5), $E(\Delta d | defeat, PROB = p_b^R, Z = 0) > E(\Delta d | defeat, PROB = p_a^R, Z = 0) > E(\Delta d | defeat, PROB = 1, Z = 0) \approx 0$ for $p_a^R > p_b^R > 0$. No effect is expected to be found when

the president's party does not control the legislature (i.e., $Z = 1$).²⁷ I perform those tests for the following ranges of the probability of electoral defeat: $PROB = \{1, 0.90, 0.50, 0.10, 0\}$. Results of the linear combinations are shown in Table 4 Column 2 below, for the logarithmic difference.²⁸

Table 4. Estimating the effect of the magnitude of electoral surprise on fiscal deficit. Linear Combinations of estimators.

Dependent variable: $d = \ln(EXP_t) - \ln(REV_t)$	(1)		(2)	
	$Z = none$		$Z = 1 - Allhouse$	
(1) $E(\Delta d win, PROB = 1.00, Z = 0)$	-0.026	[0.067]	-0.339***	[0.109]
(2) $E(\Delta d win, PROB = 0.90, Z = 0)$	-0.031	[0.064]	-0.304***	[0.104]
(3) $E(\Delta d win, PROB = 0.50, Z = 0)$	-0.052	[0.062]	-0.164*	[0.096]
(4) $E(\Delta d win, PROB = 0.10, Z = 0)$	-0.072	[0.072]	-0.025	[0.106]
(5) $E(\Delta d win, PROB = 0.00, Z = 0)$	-0.077	[0.076]	0.010	[0.111]
(6) $E(\Delta d defeat, PROB = 0.00, Z = 0)$	-0.002	[0.062]	0.276***	[0.101]
(7) $E(\Delta d defeat, PROB = 0.10, Z = 0)$	0.003	[0.056]	0.241***	[0.095]
(8) $E(\Delta d defeat, PROB = 0.50, Z = 0)$	0.023	[0.041]	0.101	[0.082]
(9) $E(\Delta d defeat, PROB = 0.90, Z = 0)$	0.044	[0.043]	-0.038	[0.091]
(10) $E(\Delta d defeat, PROB = 1.00, Z = 0)$	0.049	[0.047]	-0.073	[0.096]
(11) $E(\Delta d win, PROB = 1.00, Z = 1)$	-	-	0.101	[0.078]
(12) $E(\Delta d win, PROB = 0.90, Z = 1)$	-	-	0.086	[0.075]
(13) $E(\Delta d win, PROB = 0.50, Z = 1)$	-	-	0.024	[0.074]
(14) $E(\Delta d win, PROB = 0.10, Z = 1)$	-	-	-0.037	[0.090]
(15) $E(\Delta d win, PROB = 0.00, Z = 1)$	-	-	-0.052	[0.096]
(16) $E(\Delta d defeat, PROB = 0.00, Z = 1)$	-	-	-0.085	[0.080]
(17) $E(\Delta d defeat, PROB = 0.10, Z = 1)$	-	-	-0.070	[0.072]
(18) $E(\Delta d defeat, PROB = 0.50, Z = 1)$	-	-	-0.008	[0.049]
(19) $E(\Delta d defeat, PROB = 0.90, Z = 1)$	-	-	0.053	[0.049]
(20) $E(\Delta d defeat, PROB = 1.00, Z = 1)$	-	-	0.069	[0.053]

Notes: This table displays linear combinations of estimators from regression results of equation (3.1) (Column 1) and equation (3.6) (Column 2). For Column 1, the linear combinations that come from the regression results of equation (3.1) are $E(\Delta d|win, PROB = x_0) = INTERLUDE - (ELE + ELE \times x_0)$ and $E(\Delta d|defeat, PROB = x_0) = INTERLUDE LOSS + INTERLUDE - (ELE + ELE \times x_0)$. For Column 2, the linear combinations that come from the regression results of equation (3.6) are $E(\Delta d|win, PROB = x_0, Z) = INTERLUDE \times Z + INTERLUDE - (ELE + ELE \times x_0) - (ELE \times Z + ELE \times Z \times x_0)$ and $E(\Delta d|defeat, PROB = x_0, Z) = INTERLUDE LOSS \times Z + INTERLUDE \times Z + INTERLUDE LOSS + INTERLUDE - (ELE + ELE \times x_0) - (ELE \times Z + ELE \times Z \times x_0)$. Controls included in the regressions, but not reported, are 12 lags of the dependent variable, $\ln(1 + inflation)$, *real import growth rate*, month-country fixed effect, and deterministic time-trend polynomials of order 6 per country. Countries used in the regressions are: Argentina, Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, Honduras, Mexico, Nicaragua, Panama, Peru, Uruguay and Venezuela. Non-democratic episodes were excluded from the sample based on Polity IV project. Robust standard errors are reported in brackets. *, **, *** indicates significance at 10, 5 and 1% respectively.

Under unified governments ($Z = 0$), we observe that as the magnitude of a surprise win increases in absolute value (i.e., $PROB$ increases) the deficit decrease enlarges (e.g., $E(\Delta d | win, PROB = 0.90, Z = 0) < E(\Delta d | win, PROB = 0.50, Z = 0) < E(\Delta d | win, PROB = 0.10, Z = 0) \approx 0$). Analogously, as the magnitude of a surprise defeat in-

²⁷As mentioned before, $Z = 1 - Allhouse$.

²⁸Results of those tests for deficit as a percentage of imputed GDP produce very similar results. They are not reported, but available upon request.

creases (i.e., *PROB* decreases), the deficit increase enlarges (e.g., $E(\Delta d \mid \textit{defeat}, \textit{PROB} = 0.10, Z = 0) > E(\Delta d \mid \textit{defeat}, \textit{PROB} = 0.50, Z = 0) > E(\Delta d \mid \textit{defeat}, \textit{PROB} = 0.90, Z = 0) \approx 0$). However, in Panel B, as expected, these patterns are not replicated under divided governments, i.e., $Z = 1 - \textit{Allhose} = 1$. Table 4 Column 1 shows the linear combination results using the regression results of equation (3.1), where controls for divided governments are not included.²⁹ We observe, as expected, that magnitudes of electoral surprises does not generate consistent patterns as predicted by (3.4) and (3.5) above. Overall, these demonstrate that the manipulation of the fiscal deficit motivated by the strategic use of deficit/debt hypothesis is held by the data when the president’s party controls the legislature.

5 Concluding remarks

Theoretical studies on the strategic use of debt argue that governments issue more debt when facing a higher probability of electoral defeat (Alesina and Tabellini, 1990). Since incumbents may use the budget to help their reelection prospects (Rogoff and Sibert 1988; Rogoff, 1990; Shi and Svensson, 2006), proxies of the probability of reelection may be affected by deficits, leading to a reverse causality problem when trying to test the hypothesis of that theoretical prediction.

This paper improved on the identification strategy of earlier studies of strategic use of debt. I exploited the existence of extended interlude periods (i.e., time between election and government change date) from Latin American presidential democracies to construct a plausible causal effect of a change in the probability of electoral defeat on a change in the budget deficit. I found, when the president’s party controls the legislature, that the higher the increase (decrease) in the probability of being defeated, the higher the increase (decrease) in the executed budget deficit between interlude and pre-electoral periods. However, no effect is found under divided government. This indicate that when the executive faces lax controls and constrains from the legislature, the manipulation of the budget deficit can be extended

²⁹Regression results used for constructing linear combinations of Column 1 are not reported, but available upon request.

even after an electoral defeat. This is something new in the literature. While Streb et al. (2009), Streb et al. (2012) and Streb and Torrens (2013) show that under unified governments political budget cycles are exacerbated, I show that under unified governments the manipulation of budget deficits is exacerbated even after electoral defeats, during presidential transitions.

On the Online Appendix, I briefly study the role of budget institutions as an additional moderating factor of the executive discretion over budget manipulation around interludes and elections. Although I corroborated that budget institutions are effective on dampening fiscal indiscipline in the long run (as found in Stein et al. (1998), Alesina et al. (1999) and Filc and Scartascini (2007) for Latin American countries), surprisingly, I found that they are not significantly effective in stopping defeated presidents from overspending during interludes when governments are unified. This may occur for at least two reasons. First, compliance with the budget law is far from perfect under unified governments, since there is evidence that the role of the legislature on budget oversight tends to be diluted (Messick, 2002; Santiso, 2004). Second, with an aligned legislature, circumventing budget laws to allow budget modifications requested by the executive tends to be more likely given that legislative approval is required, e.g., using constitutional decree authority to promote such modifications (Mainwaring and Shugart, 1997; Negretto, 2004; Pereira et al., 2005). I am not aware of any study that deals with the interaction between budget institutions and divided/unified governments to study their effects over budget manipulations for political gain around elections. This paper conducts a first study of those interactions and their effects on fiscal policy around elections, and it is likely it will raise questions for future research.

Studying the interlude periods is interesting in itself. In practice, different electoral systems work with widely different interlude periods. For example, Mexico has around four months, while Peru has only one. In the former country, there is an ongoing debate about whether shortening interludes is beneficial. It is argued in Mexico that extended interlude periods are harmful because the outgoing incumbent's policies do not currently match citizens' preferences. Also, disagreement between the outgoing and the incoming incumbents constitute risks that have to be reduced.³⁰

³⁰“Acortarán periodo de transición presidencial.” *El Economista*, October 2nd 2012 – 13:08.

In contributing to this debate, my finding suggests that the existence of extended interludes may give opportunistic incumbents enough time to overspend in order to leave less resources for the new administration to initiate its government, in particular when the legislature is controlled by the incumbent's party. Therefore, there may be welfare gains from shortening interludes.

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