

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

ABSTRACT The hypothesis on the strategic use of debt argues that governments issue more debt when facing higher probabilities of electoral defeat. Testing this hypothesis has proven challenging, since measures of those probabilities are potentially endogenous. However, during presidential transitions, the probability of electoral defeat becomes one if the incumbent was defeated in the election and zero if the incumbent was reelected. I thus use ex post electoral outcomes as a proxy of the probability of electoral defeat to construct measures of the electoral surprise and to estimate their impact on the budget deficit. Monthly data from Latin American democracies in 1980–2005 reveal that higher magnitudes of surprise defeats (wins) produce higher (lower) deficits when the executive controls the legislature, but there is no effect when the legislature is controlled by the opposition. While previous studies find 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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Positive studies on budget deficits and debt accumulation argue that a government anticipating a possible defeat in the next election can use debt strategically 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 proved challenging. Since incumbents may use the budget to help their reelection prospects (Rogoff and Sibert, 1988; Rogoff, 1990; Shi and Svensson, 2006), proxies of

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the probability of reelection may be affected by deficits, leading to a reverse causality problem.

This paper exploits the existence of extended interludes (that is, the time between the election and the date of the change of government) in 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 one if the incumbent was voted out in the elections and zero if the incumbent was reelected. I use the *ex post* electoral outcomes as a proxy of the probability of electoral defeat during the pre-electoral period to construct a plausible exogenous change in that probability between the pre-electoral period and the interlude to estimate its impact on the change in the budget deficit.

This identification strategy has an additional benefit. Estimating the effect of changes in the probability of being defeated between the pre-electoral period and the interlude 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 date of the change of government, so I observe the same incumbent choosing monthly spending before and after elections even in the case of an electoral defeat. Previous studies test the same hypothesis using data in levels instead of testing their changes (Pettersson-Lidbom, 2001; Lambertini, 2003), in which case such unobserved incumbent characteristics 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 interludes. As 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. Unlike their model, however, 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 the pre-electoral period and the interlude.

Second, I test the theoretical prediction of the model using panel data on federal government deficits in presidential Latin American democracies reported in the International Financial Statistics (IFS) database, published by the International Monetary Fund. I regress executed monthly deficits on indicators for pre-electoral periods interacted with the probability of being

voted out, the interlude, and the interlude if the incumbent and his or her successor are not from the same party.¹ The theoretical model assumes that the executive has full discretion in how resources are ultimately spent. In reality, however, the manipulation of fiscal policy for political gain may be exacerbated when there is a correspondence between the interest of a legislative majority and the executive branch (that is, a unified government).² Therefore, I control for unified government in the regression equation to test this hypothesis, following Hicken, Satyanath, and Sergenti (2005), Streb, Lema, and Torrens (2009), and Streb, Lema, Garfalo, and Eslava (2012). Consistent with the model, the estimation results show that when governments are unified, the deficit increases considerably when the incumbent's party is voted out and this was perceived as unlikely before the elections. In contrast, the deficit decreases considerably when the incumbent's party is reelected and this was perceived as unlikely before the 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—that is, when a victory or a defeat is perceived as a surprise.³ On the other hand, I find no effects under divided governments. This demonstrates the importance of controlling for divided versus unified governments when studying the manipulation of fiscal policy for political gain, as found by Streb, Lema, and Torrens (2009), Streb and others (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.

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

2. Alesina and Rosenthal (1995) show that divided government moderates the executive power in the United States. Streb, Lema, and Torrens (2009), for a group of developed and developing countries, find that the political budget cycle is dampened during elections in divided governments. Below, I explain the mechanisms through which unified governments facilitate the manipulation of fiscal resources for political gain.

3. The magnitude of an electoral surprise is calculated as follows. When the incumbent perceives an electoral defeat with probability 0.65 and then loses the election, the probability of electoral defeat goes to one, in which case the magnitude of the surprise defeat is $1.00 - 0.65$. When the incumbent perceives an electoral defeat with probability 0.35 but in fact wins the election, the probability of electoral defeat goes to zero, in which case the magnitude of the surprise defeat becomes $0.00 - 0.35$. A negative surprise defeat implies a positive surprise victory.

My paper improves on the identification strategy of earlier studies of strategic debt. Pettersson-Lidbom (2001) uses ex post vote shares from Swiss municipalities 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 effects as instruments, because municipality dummy variables 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, p. 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—that is, “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, p. 3)—as a proxy of the probability of electoral defeat for the United States and members of the Organization for Economic Cooperation and Development (OECD). Since opinion polls are usually conducted a few months before elections take place, they may suffer from the same endogeneity problem as the ex post vote shares.⁴ In contrast to those papers, my identification strategy is focused on identifying the impact 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.⁵ Substantively, my results suggest that under unified governments, the fiscal deficit increases significantly following a surprise defeat, such that every election has the potential to significantly affect either public debt or, if the country finances its deficit with inflationary taxes, inflation (Stein and Streb, 1998).

The rest of the paper is organized as follows. The next section presents the model. I then describe the data and the econometric specification, followed by a presentation of the empirical results. The final section concludes.

4. 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 and others, 2012).

5. In the online appendix (section A), I show that the main results of the paper are not sensitive to the exclusion of all control variables (<http://economia.lacea.org/contents.htm>).

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 a 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). 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 nondiscretionary spending would not add any benefit, I consider it 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 $h'(x) > 0$, $h''(x) < 0$, $v'(x) > 0$, and $v''(x) < 0$. Also, $u'(x) > 0$, $u''(x) < 0$, $u'(1) = 1$, and g^A and g^B represent spending on public goods A and B , respectively. Finally, $\alpha^i \in (0,1)$ 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 as follows (where the wage and the price of consumption are equal to one):

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

Under this scenario, consumption and leisure per period will be the same for all citizens, so I focus solely on public consumption.

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 intertemporal 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 in period 1 about who will be elected at the beginning of period 2 and take 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:

$$\max_{\{d_1, d_2, \tilde{d}_2\}} V \left[g_1^A(d_1), g_2^A(d_2), \tilde{g}_2^A(\tilde{d}_2), g_3^A(d_1, d_2), p^R, \delta \right]$$

subject to

$$-1 \leq d_1 \leq q + q^2;$$

$$-1 \leq d_2 \leq q - \frac{d_1}{q}; \text{ and}$$

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

where $g_1^A = 1 + d_1$; $g_2^A = 1 + d_2$; $\tilde{g}_2^A = 1 + \tilde{d}_2$; $g_3^A = 1 - \frac{d_1}{q^2} - \frac{d_2}{q}$. Additionally,

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

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 identity of the successor becomes known at the beginning of period 2, the current incumbent updates his intertemporal consumption path. In particular, if the incumbent's party is not reelected, the problem becomes

$$\max_{\tilde{d}_2} u(1 + \tilde{d}_2),$$

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

This yields the upper-corner solution:

$$(1) \quad \tilde{d}_2^* = q - \frac{d_1}{q}.$$

In contrast, if the incumbent’s party is reelected, the consumption plan is updated following the optimization,

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

subject to $-1 \leq d_2 \leq q - \frac{d_1}{q}$,

which yields the following interior solution:

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

Given that the boundaries are the same for both problems and that the solution is interior when the incumbent’s party is reelected (since $d_1 \leq q + q^2$) but the upper bound when the party is voted out, then it follows that $\tilde{d}_2^* > d_2^*$. ■

If the incumbent learns in 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*). Consequently, the incumbent’s optimal strategy is to overspend in period 2, providing the public goods he considers important and leaving no resources to the successor. In contrast, if he or his party is reelected, he knows the successor will implement the

policies he favors. He will thus want to smooth public consumption by moderating public good provision in period 2 and leaving resources for the last period.

In addition, when the successor’s identity becomes known after the election, the incumbent is motivated to make a sudden change in the budget deficit before the change of government occurs.

Proposition 2. If the incumbent discounts the future at the same rate as the market (that is, $\delta = q$), then in equilibrium, (1) the deficit generated in period 1 is at least as large as the deficit generated in period 2 if the incumbent’s party is reelected, but (2) the period 1 deficit is at most as large as the deficit generated in period 2 if the incumbent’s party is not reelected ($d_2^* \leq d_1^* \leq \tilde{d}_2^*$). In addition, (3) d_1^* approaches $d_2^*(\tilde{d}_2^*)$ as the magnitude of a surprise win (defeat) decreases.

Proof. If $\delta = q$, then d_2^* in equation 2 becomes

$$(3) \quad d_2^* = -\frac{d_1}{q(q+1)}.$$

The optimization problem in the first period is

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

subject to $-1 \leq d_1 \leq q^2 + q$.

The first-order condition for an interior solution is

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

which, after some algebra, yields

$$(4) \quad u'(1 + d_1) = (1 - p^R)u'(1 + d_2^*) + (p^R)u'(1 + \tilde{d}_2^*),$$

from which it directly follows that $d_2^* \leq d_1 \leq \tilde{d}_2^*$, proving the first two parts of proposition 2. Rewriting this inequality as $d_2^* - d_1 \leq 0 \leq \tilde{d}_2^* - d_1$ clearly shows that the deficit increases following an electoral defeat (that is, $\tilde{d}_2^* - d_1 = q - d_1 \left(\frac{1}{q} + 1 \right) \geq 0$), while it decreases following an electoral win (that is, $\tilde{d}_2^* - d_1 = -d_1 \left(\frac{1}{q(q+1)} + 1 \right) \leq 0$). To prove the third part of proposition 2, I first define the implicit function that comes from combining equation 4 with equations 3 and 1:

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

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

$$(5) \quad \frac{\Delta d_1}{\Delta p^R} = - \left(\frac{\frac{\partial F(d_1, p^R)}{\partial p^R}}{\frac{\partial F(d_1, p^R)}{\partial d_1}} \right) > 0,$$

which leads, in the case of electoral victories, to

$$(6) \quad \frac{\Delta(d_2^* - d_1)}{\Delta p^R} < 0, \text{ given that } d_2^* - d_1 = -d_1 \left(\frac{1}{q(q+1)} + 1 \right) \leq 0,$$

and, in the case of electoral defeats, to

$$(7) \quad \frac{\Delta(\tilde{d}_2^* - d_1)}{\Delta p^R} < 0, \text{ given that } \tilde{d}_2^* - d_1 = q - d_1 \left(\frac{1}{q} + 1 \right) \geq 0.$$

Equations 6 and 7 prove part 3 of proposition 2. ■

The first two parts of proposition 2 can be interpreted as follows. When the incumbent does not know whether his party will be reelected, he increases the deficit moderately. However, once he learns in period 2 who will come next, he updates the public consumption plan either by increasing the deficit further (if a politician with different policy preferences was elected) or by decreasing it (if a politician with similar policy preferences was elected).

Understanding part 3 of proposition 2 requires the inspection of equations 6 and 7 for different values of $p^R \in (0, 1)$. First, for the extreme values $p^R = 0$ and $p^R = 1$, equation 4 indicates 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: neither the public consumption plan nor the deficit plan is altered when the outcome of an election is certain (that is, when electoral victories or defeats are not perceived as a surprise). In contrast, the plan changes when the result of the upcoming election is unknown (that is, when the incumbent does not know whether he will win or lose). Equations 6 and 7 reveal how a change in p^R affects the change in the deficit. 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 larger the change in the deficit. As equation 6 shows, when the magnitude of a surprise win increases (that is, p^R increases), the deficit contracts more sharply (that is, $\Delta(d_2^* - d_1)/\Delta p^R < 0$ given $d_2^* - d_1 \leq 0$). Equation 7 shows that when the magnitude of a surprise defeat increases (that is, p^R decreases), the deficit also increases (that is, $\Delta(\tilde{d}_2^* - d_1)/\Delta p^R < 0$ given $\tilde{d}_2^* - d_1 \geq 0$).

In the context of this model, extended interludes 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 larger the change in the deficit, as stated in proposition 2. Specifically, when the magnitude represents a surprise win (that is, the incumbent’s party unexpectedly wins reelection), I expect the deficit to decrease, as shown by equation 6. When the magnitude represents a surprise defeat (that is, the incumbent’s party unexpectedly loses the election), I expect the deficit to increase, as shown by equation 7.

Data and Empirical Strategy

To test the strategic-use-of-deficit hypothesis, I use monthly data on presidential democracies in Latin America from January 1980 to December 2005. The

countries in the sample are Argentina, Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, Honduras, Mexico, Nicaragua, Panama, Peru, Uruguay, and Venezuela. I consider only democratic periods based on the Polity IV Project. To define the relevant election date, I use presidential elections following the classification in the Database of Political Institutions (DPI).⁶ The electoral calendar and the vote share outcome per party were taken from the Center on Democratic Performance at Binghamton University, State University of New York (SUNY).⁷ Presidential elections take place every four to six years. All these countries have at least one month of interlude following an election, which is necessary for identification purposes.⁸ Table 1 shows the summary statistics of executed monthly fiscal deficits as a percentage of GDP from the central government and other variables used in the analysis, available from the International Financial Statistics (IFS) database published by the International Monetary Fund. To construct monthly GDP figures in nominal terms, I follow Fernández's (1981) distribution procedure, using monthly import series. This allows me to compute the ratio of the executed budget deficit to GDP on a 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 is the logarithmic difference between expenditure and revenue, where imputation is not necessary given that fiscal data are available at monthly frequencies.⁹ Summary statistics on this logarithmic difference are also shown in table 1.

6. The Database of Political Institutions was initially compiled by the World Bank and is currently hosted by the Inter-American Development Bank (IDB).

7. The probability of being defeated is defined as one minus the incumbent's party's ex post vote share. An alternative definition was also constructed, and the main results throughout the paper did not change. The latter definition considered the ex post vote share of the two parties that got the highest shares (which usually represent more than 70 percent of total votes). For example, if the incumbent's party gets the highest vote share, say, 40 percent, and the second party gets 35 percent, the probability of electoral defeat is calculated as $1 - 0.40/(0.40 + 0.35)$. If the incumbent got third place or below, the corresponding probability is considered to be one. Results under this alternative definition are available on request.

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

9. The main hypotheses of my paper are tested successfully with both independent variables. Partial results using deficit over imputed GDP are shown in the paper. The full set of results is available on request.

TABLE 1. Definition of Variables and Descriptive Statistics

Variable	Description	Mean	Std. error	Minimum	Maximum	Frequency	Source
$100 \times (\text{EXP} - \text{REV}) / \text{GDP}$	Executed fiscal deficit as percentage of imputed GDP	1.893	5.790	-32.090	71.718	—	IFS
$\ln(\text{EXP}) - \ln(\text{REV})$	Log of expenditure minus log of revenue	0.107	0.299	-1.405	1.754	—	IFS
ELE	Dummy variable that takes a value of one for the last nine months before an election, and zero otherwise	0.160	0.360	0	1	550	SUNY and others
ELE \times PROB	One minus the president's party's vote share, used as a proxy of the probability of being defeated for the last nine months before an election	0.690	0.190	0.36	1.00	—	SUNY and others
INTERLUDE	Dummy variable that takes a value of one if the month lies between the election and the date of the change of government, and zero otherwise	0.030	0.170	0	1	110	—
INTERLUDELOSS	Dummy variable that takes a value of one if the month lies within the interlude and the successor is NOT from the incumbent's party, and zero otherwise	0.020	0.140	0	1	73	DPI
$\text{INTERLUDE} \times (1 - \text{ALLHOUSE})$	Dummy variable that takes a value of one if the executive does NOT control the legislature during the interlude, and zero otherwise	0.686	0.466	0	1	70	DPI
$\text{INTERLUDELOSS} \times (1 - \text{ALLHOUSE})$	Dummy variable that takes a value of one if, in the event that the incumbent's party was not reelected, the outgoing president does NOT control the legislature during the interlude, and zero otherwise	0.353	0.479	0	1	54	DPI
GOVCH	Dummy variable that takes a value of one for the nine months after a constitutional change of government, and zero otherwise	0.160	0.370	0	1	567	SUNY and others

Notes: IFS: IMF International Financial Statistics; DPI: Database of Political Institutions; SUNY: the Election Result Archive from the Center on Democratic Performance, State University of New York (SUNY) at Binghamton. For the calculation of all the descriptive statistics, nondemocratic periods were excluded, following the Polity IV Project.

When the president's party controls the legislature, the manipulation of fiscal policy for political gain may be exacerbated. For that reason I also use the variable ALLHOUSE, from the DPI, which takes a value of one if the president's party controls the legislature and zero otherwise. Hicken, Satyanath, and Sergenti (2005) use this variable to study how democracies recover from economic shocks when there are legislative obstacles to changes in economic policies.

To what extent can the executive adjust fiscal policy in response to a surprise defeat or win in presidential transitions when an approved budget has already been executed? In most Latin American countries, budget laws give the executive the authority—through the president directly or sometimes through his or her political appointees with executive power—to change or reallocate expenditures after the execution of an approved budget (Currstine and Bas, 2007). In most countries, the executive can also 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, modifications to an existing and executed budget require legislative approval (Currstine 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 or 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 through 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.¹⁰ However, the executive may be discouraged from using its decree authority during a divided government since, either explicitly or tacitly, decrees have to be

10. There is indeed evidence that executive decrees in Latin America are used for political purposes. For example, in the 1999 Argentine presidential election, the number of presidential decrees—*decretos de necesidad y urgencia*—almost doubled relative to 1998, from twenty-four to forty-two. Moreover, there were emergency decrees during the presidential transition regarding budget modifications (for example, *modificación del presupuesto general, ejercicio 1999*, 1356/99). Since the executive's party faced an electoral defeat, those emergency decrees may have been motivated by the strategic-use-of-debt hypothesis described above. In Peru, about 300 emergency decrees issued between January 1994 and March 2001 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, p. 93), President Fernando Henrique Cardoso issued 2,609 presidential decrees—*medidas provisórias com força de lei*—during his first term (1995–98) with an 81 percent success rate, five times more than his predecessor, Itamar Franco (Pereira, Power, and Rennó, 2005).

approved by the legislature, which is unlikely when it is controlled by the opposition (Mainwaring and Shugart, 1997; Negretto, 2004; Pereira, Power, and Rennó, 2005). Second, the legislature plays an important role in budget oversight. Since “it is the party or parties out of power—the opposition—that has the incentive to oversee government” (Messick, 2002, p. 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, p. 69). Then, compliance with the budget law may be far from perfect under unified governments, giving the executive ample opportunities to raise spending, in contradiction to its budgeted counterpart. Overall, this evidence indicates that the legislature is the most relevant moderating factor for executive discretion over budget modifications.¹¹

Regarding the timing of the fiscal manipulation, empirical evidence shows that it can be short-lived (as is also predicted by the model). Akhmedov and Zhuravskaya (2004) find that political cycles in public expenditure take place around a month before elections in Russia (in particular expenditures on education and urbanization) but not before, which explains why such cycles have not been found with annual data. There is also ample evidence of fiscal manipulation in developed countries. Larcinese, Rizzo, and Testa (2006) find that U.S. federal transfers to a state are affected by the alignment between the president and the state governors and by the alignment between the president and the majority of the state delegates in the House of Representatives. Berry, Burden, and Howell (2010) find that the president has ample opportunities to influence the allocation of funds to U.S. 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, the president can use executive action to 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 in which the House of Representative is aligned with the president receive more federal funds, on average.

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.

11. I provide empirical evidence of this claim in the online appendix (section D). I find that divided government is more effective in moderating executive discretion over budget modifications around interludes than are budget institutions themselves.

Methods and Econometric Specification

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

$$(8) \quad d_{it} = \sum_{n=1}^{12} \beta_n d_{i,t-n} + \sum_{j=1}^N \alpha_j x_{jit} + \gamma \text{ELE}_{it} + \theta \text{ELE}_{it} \times \text{PROB}_{it} \\ + \tau \text{INTERLUDE}_{it} + \lambda \text{INTERLUDELOSS}_{it} + \nu \text{GOVCH}_{it} \\ + \sum_{i=1}^N \sum_{j=1}^6 \kappa_{ij} T_{it}^{(j)} + \sum_{i=1}^N \sum_{m=1}^{12} \varphi_{im} D_{im} + e_{it}.$$

Here, d_{it} is the logarithmic difference between expenditure and revenue for country i in month t .¹² The first terms on the right-hand side ($\sum_{n=1}^{12} \beta_n d_{i,t-n}$) represent twelve lags of the dependent variable that controls for the persistence of the fiscal policy.¹³ Two time-varying controls (x) at monthly frequencies are included. First, $\text{REAL_IMPORT_GROWTH_RATE}_{it}$ is used as a proxy variable of monthly real GDP growth. Since imports and GDP are highly correlated at annual frequencies, it is assumed that they are also highly correlated at monthly frequencies. The real GDP growth rate—or any transformation of it—is a traditional control in the literature on political budget cycles and the strategic use of debt (for example, Lambertini, 2003; Brender and Drazen, 2005; Shi and Svensson, 2006; Streb, Lema, and Torrens, 2009; Drazen and Eslava, 2010; among others). Second, $\ln(1 + \text{INFLATION})$ is also included, as in Streb, Lema, and Torrens (2009). An inflationary tax can be used if an incumbent cannot cover up deficits by issuing more debt. However, 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 could produce biased estimates. Therefore, $\ln(1 + \text{INFLATION})$ should address this potential concern because it captures high-inflation regimes.¹⁴

12. As explained earlier, the 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 using the deficit as a percentage of imputed GDP is available on request.

13. Regression results are robust to the exclusion of these lags. Results without the lags are not reported in the paper but are available on request.

14. The exclusion of the real import growth rate and $\ln(1 + \text{INFLATION})$ does not bias the results at all. Results without these controls are not reported in the paper, but are available on request.

ELE_{it} is a dummy variable that takes a value of one for the last nine months before an election in month t and zero otherwise.¹⁵ $PROB_{it}$ is equal to one minus the incumbent's party's vote share, used as a proxy of the probability of electoral defeat.¹⁶ $INTERLUDELOSS_{it}$ is a dummy variable that takes a value of zero if the incumbent learns that his party was reelected during the interlude and one if he learns that his party was voted out. $GOVCH_{it}$ is a dummy variable that takes a value of one for the nine months after a constitutional government change and zero otherwise, 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 sixth-order polynomial time trends per country (that is, $\sum_{i=1}^N \sum_{j=1}^6 \kappa_{ij} T_{it}^{(j)}$ in equation 8), where $T = 1$ for the year 1980, $T = 2$ for 1981, $T = 3$ for 1982, and so on. Under this set of deterministic sixth-order polynomial time trends per country, I am able to control for medium-run determinants of fiscal policy per country.¹⁷ Furthermore, I control for seasonal

15. This dummy variable captures the average effect of each of those nine months. Results with dummy variables for each of those months are not reported but are available on request.

16. Previous studies rely on ex ante opinion polls rather than ex post electoral outcomes to construct proxies of probabilities of electoral defeat, arguing that the latter are endogenous (for example, Lambertini, 2003). However, as stated in the introduction, ex ante results are endogenous as well. According to the literature on political budget cycles, incumbents start enhancing their reelection prospects up to one year before elections take place. Since ex ante opinion polls are usually conducted within six months of elections, those survey results may already be contaminated by the opportunistic political behavior. In the online appendix (section C), I follow a dichotomic approach in the construction of the probability of electoral defeat, that is, a dummy variable taking a value of one for high probability of electoral defeat and zero otherwise. Results are qualitatively the same.

17. When deterministic sixth-order polynomial time trends are excluded from the regression, the results do not change significantly. These results are available on request. Another way to control for annual-trend endogeneity is by using country-year fixed effects. Given the dimension of my panel data set (monthly data for thirteen countries over twenty-five years), these fixed effects would be composed of $13 \times 25 - 1$ dummy variables. For example, for country $i = 1, \dots, 13$ in year $t = 1980, \dots, 2005$, the dummy variable, say, CY_{it} , takes a value of one, and zero otherwise. Under the country-year fixed-effects approach, the results are very similar to the approach used throughout the paper (available on request). Finally, a reviewer pointed out that the 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 the 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 is not likely to drive the results.

effects per country using country-month fixed effects (that is, $\sum_{i=1}^N \sum_{m=1}^{12} \phi_{im} D_{im}$). These fixed effects are composed of $13 \times 12 - 1$ dummy variables. For example, for country $i = 1, \dots, 13$ during month $m = 1, \dots, 12$, the dummy variable D_{im} takes a value of one, and zero otherwise. Since Latin American elections are constitutionally fixed and then held the same calendar month in each country, any changes in the fiscal stance between the pre-electoral period and the interlude may thus reflect regular calendar fluctuations in budgetary accounts, rather than any intended changes in the fiscal policy stance. These country-month fixed effects address this potential concern.¹⁸

Although the empirical model with lagged dependent variables, time-varying controls, deterministic sixth-order polynomial time trends, and country-month fixed effects described in equation 8 controls for several sources of unobserved heterogeneity, the estimation results may still contain biased estimates if unobserved heterogeneity changes systematically around interludes. Although there is no direct way to tackle this potential issue, high within-country variability of the magnitude of the electoral surprise can address this potential concern. For example, if the electoral defeat or victory conforms to expectations in one election (that is, small electoral surprise) while in the next election it does not (that is, large electoral surprise), one should expect—based on the model—no increase or decrease in the budget deficit in the former case and a high increase or decrease in the latter. This high within-country variability in the magnitude of the electoral surprise produces a high within-country variability in the fiscal deficit between the pre-electoral period and the interlude, masking any given possible change in the fiscal deficit due to changes in the unobserved heterogeneity around interludes.

To explore whether the magnitudes of the electoral surprise vary considerably within each country, I construct coefficients of variation of those magnitudes for each country (see table 2). Given that an electoral defeat represents, by definition, a probability of electoral defeat equal to one and that PROB_{it} is the probability of electoral defeat, the difference $1 - \text{PROB}_{it}$ represents a positive surprise electoral defeat. Analogously, since an electoral win represents a probability of electoral defeat equal to zero, the difference $0 - \text{PROB}_{it}$ represents a negative surprise electoral defeat (and a positive surprise electoral victory). Next, I compute the mean and the standard deviation of the magnitudes of surprise defeat for each country. As table 2 shows, the means of the surprise defeat per country are almost always negative and small in relation

18. The results do not change significantly when these seasonal effects are excluded from the regression (available on request).

TABLE 2. Surprise Electoral Defeat: Descriptive Statistics by Country

Country	$(I_{it} - PROB_{it})$		
	Mean _i	(Std. dev.)	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 reelected. $PROB_{it}$ is one minus the ex post president's party's 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 one. Therefore, the difference $I_{it} [= 1] - PROB_{it}$ represents a positive surprise electoral defeat, which means that the incumbent's party was voted out. Analogously, an electoral victory represents a probability of electoral defeat equal to zero. Therefore, the difference $I_{it} [= 0] - PROB_{it}$ represents a negative surprise electoral defeat, which means the incumbent's party was reelected. Voting data are from the Election Result Archive of the Center on Democratic Performance, SUNY at Binghamton. Nondemocratic periods were excluded, following the Polity IV Project.

to the standard deviations, creating coefficients of variation above 2 (shown in column 3), which are considered high.¹⁹ This evidence indicates 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 explained above, I test for differential effects between presidential transitions after an electoral defeat when the president's party controls the legislature ($1 - ALLHOUSE = 0$) and when it does not ($1 - ALLHOUSE = 1$). Given that almost all the countries possess interludes under both unified and divided governments in the period of study, in reality, this acts as another source of within-country variability during interludes that can potentially contribute to masking unobserved heterogeneity around presidential transitions. The main results below are not sensitive to the simultaneous exclusion of all the control variables mentioned above (that is, lagged dependent variables, time-varying controls, deterministic sixth-order polynomial time trends, and country-month fixed effects). This indicates that the empirical strategy developed in this paper produces

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

plausible exogenous changes in the probability of being defeated that in essence affect the executed budget deficit, and not vice versa.²⁰

$PROB_{it}$ produces potentially endogenous measures of the probability of electoral defeat, regardless of whether the proxy of such probability is constructed using ex post electoral outcomes, as in this paper, or ex ante opinion polls, as in Lambertini (2003).²¹ Based on the above discussion, my empirical design still provides a plausible exogenous variation in the construction of its change. However, even if that were not the case, time-varying controls would have played a crucial role in tackling that endogeneity issue. First, $PROB_{it}$ could be negatively correlated with macroeconomic performance. If incumbents' parties face a higher probability of being defeated in an election 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 the real import growth rate (as a proxy of monthly real GDP growth rate) and $\ln(1 + INFLATION)$ since they are highly correlated with economic performance. Second, $PROB_{it}$ could be affected by reverse causality, given the political-budget-cycles hypothesis (Rogoff and Sibert, 1988; Rogoff, 1990; Shi and Svensson, 2006)—that is, expansionary fiscal policy may be used before elections to boost economic activity in order to increase the incumbent's chances of being reelected. This issue is tackled with the inclusion of the twelve lagged deficits in equation 8 (that is, $\sum_{n=1}^{12} \beta_n d_{i,t-n}$), which control for any fiscal deficit increase before elections that is intended to affect $PROB_{it}$.

Following equation 8, the effect of the change in the probability of being voted out on the change in the fiscal deficit is

$$(9) \quad E(\Delta d | \text{Win}) = \text{INTERLUDE} - (\text{ELE} + \text{ELE} \times \text{PROB})$$

for electoral wins, and

$$(10) \quad E(\Delta d | \text{Defeat}) = \text{INTERLUDELOSS} + \text{INTERLUDE} \\ - (\text{ELE} + \text{ELE} \times \text{PROB})$$

for electoral defeats.

20. Results 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.

21. For a brief discussion, see footnote 16.

From equations 6 and 9, it follows that $E(\Delta d|\text{Win}) \approx d_2^* - d_1 \leq 0$, while from equations 7 and 10, $E(\Delta d|\text{Defeat}) \approx \tilde{d}_2^* - d_1 \geq 0$. Moreover, equation 6 establishes that the deficit decrease enlarges as the surprise win ($0 - p^R$) increases (both in absolute value); that is, $\Delta(d_2^* - d_1)/\Delta p^R < 0$. Note that $\Delta(d_2^* - d_1)/\Delta p^R < 0$ 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 equation 9 as follows:

$$\begin{aligned} [d_2^*(p_a^R) - d_1(p_a^R)] &\approx E(\Delta d|\text{Win}, \text{PROB} = p_a^R) < [d_2^*(p_b^R) - d_1(p_b^R)] \\ &\approx E(\Delta d|\text{Win}, \text{PROB} = p_b^R) < 0, \end{aligned}$$

for any $p_a^R > p_b^R$. Thus, the empirical tests I run are

$$\begin{aligned} (11) \quad E(\Delta d|\text{Win}, \text{PROB} = p_a^R) &< E(\Delta d|\text{Win}, \text{PROB} = p_b^R) \\ &< E(\Delta d|\text{Win}, \text{PROB} = 0) \approx 0, \end{aligned}$$

for $p_a^R > p_b^R > 0$, which implies that as the probability of electoral defeat increases, the magnitude of a surprise win increases, and therefore the reduction in the deficit increases (in absolute value). Analogously, for electoral defeats,

$$\begin{aligned} 0 < E(\Delta d|\text{Defeat}, \text{PROB} = p_a^R) &\approx [\tilde{d}_2^*(p_a^R) - d_1(p_a^R)] \\ &< E(\Delta d|\text{Defeat}, \text{PROB} = p_b^R) \approx [\tilde{d}_2^*(p_b^R) - d_1(p_b^R)], \end{aligned}$$

for any $p_a^R > p_b^R$, where the empirical tests to run are

$$\begin{aligned} (12) \quad E(\Delta d|\text{Defeat}, \text{PROB} = p_b^R) &> E(\Delta d|\text{Defeat}, \text{PROB} = p_a^R) \\ &> E(\Delta d|\text{Defeat}, \text{PROB} = 1) \approx 0, \end{aligned}$$

for $p_a^R > p_b^R > 0$, implying that as the probability of electoral defeat increases, the magnitude of the surprise defeat decreases, and therefore the expansion of the deficit decreases.

Equation 8 does not control for divided governments. Therefore, based on the explanation presented above, the estimations of equations 11 and 12 could be attenuated, since the results would be a weighted average of elections in which the president's party does not control the legislature (when there would be no effect) and elections in which president's party controls the legislature (when all the effects are expected to occur). To control for divided governments, I extend equation 8 as follows:

$$\begin{aligned}
 (13) \quad d_{it} = & \sum_{n=1}^{12} \beta_n d_{i,t-n} + \sum_{j=1}^N \alpha_j x_{jit} + \gamma \text{ELE}_{it} + \theta \text{ELE}_{it} \times \text{PROB}_{it} \\
 & + \tau \text{INTERLUDE}_{it} + \lambda \text{INTERLUDELOSS}_{it} + \nu \text{GOVCH}_{it} \\
 & + \gamma_Z \text{ELE}_{it} \times Z_{it} + \theta_Z \text{ELE}_{it} \times \text{PROB}_{it} \times Z_{it} \\
 & + \tau_Z \text{INTERLUDE}_{it} \times Z_{it} + \lambda_Z \text{INTERLUDELOSS}_{it} \\
 & \times Z_{it} + \sum_{i=1}^N \sum_{j=1}^6 \kappa_{ij} T_{it}^{(j)} + \sum_{i=1}^N \sum_{m=1}^{12} \phi_{im} D_{im} + e_{it},
 \end{aligned}$$

where $Z_{it} = 1 - \text{ALLHOUSE}$.

Thus, if $Z_{it} = 1$, the president's party does not control the legislature; $Z_{it} = 0$ otherwise. As explained earlier, the manipulation of fiscal policy for political gain may be exacerbated in times of unified government. Therefore, for a given probability of electoral defeat,

$$\begin{aligned}
 (14) \quad & \left| E(\Delta d | y, \text{PROB} = x_0, Z = 0) \right| > 0 \text{ and} \\
 & \left| E(\Delta d | y, \text{PROB} = x_0, Z = 1) \right| \approx 0,
 \end{aligned}$$

for $y = \{\text{Win, Defeat}\}$. That is, the predictions of equations 11 and 12 only apply when the president enjoys higher political discretion (that is, $Z = 0$), because he or she is able to manipulate the deficit more than when the legislature is controlled by the opposition (that is, $Z = 1$).

Finally, to test proposition 1, I note that

$$\begin{aligned}
 & E(\Delta d | \text{Defeat}, \text{PROB} = x_0) - E(\Delta d | \text{Win}, \text{PROB} = x_0) \\
 & = \text{INTERLUDELOSS} \approx \tilde{d}_2^* - d_2^* > 0.
 \end{aligned}$$

This means that the deficit is higher during interludes when an incumbent faces an electoral defeat. Here again, this difference should be significantly higher when the executive enjoys higher political discretion. That is,

$$E(\Delta d | \text{Defeat, PROB} = x_0, Z = 0) - E(\Delta d | \text{Win, PROB} = x_0, Z = 0) > 0$$

and

$$E(\Delta d | \text{Defeat, PROB} = x_0, Z = 1) - E(\Delta d | \text{Win, PROB} = x_0, Z = 1) \approx 0.$$

Estimation Results

In this section, I present the main empirical findings of the paper. I first estimate simpler versions of equations 8 and 13 without the inclusion of the probability of being defeated to provide a general idea of how the budget deficit behaves in the two relevant periods of the study: pre-electoral and presidential transition periods.

The first column of table 3 shows the results when the dummy variable for divided governments is not included (that is, $1 - \text{ALLHOUSE} = 1$ means that the legislative houses are not controlled by the president's party, while $1 - \text{ALLHOUSE} = 0$ means otherwise). As expected, the budget deficit increases during the last nine months before elections ($\text{ELE} = 0.072^{***}$). However, there is no statistically significant deficit increase during interludes when the president faces an electoral defeat (that is, INTERLUDELOSS is insignificant). In column 2, where $1 - \text{ALLHOUSE}$ is used as a measure of divided governments, the pre-electoral cycle is higher when governments are unified (that is, $\text{ELE} = 0.118^{***}$ in column 2, versus $\text{ELE} = 0.072^{***}$ in column 1). The pre-electoral cycle is canceled out under divided governments: that is, $\text{ELE} \times (1 - \text{ALLHOUSE}) = -0.073^{***}$, and $\text{ELE} + \text{ELE} \times (1 - \text{ALLHOUSE}) \approx 0$. This corroborates earlier findings that a divided government moderates the discretion of the executive in the United States (Alesina and Rosenthal, 1995) and in Latin America and the OECD (Streb, Lema, and Torrens, 2009; Streb and others, 2012). During presidential transitions, the budget deficit increases substantially when the executive faces an electoral defeat under unified governments ($\text{INTERLUDELOSS} = 0.258^{**}$), but not under divided ones: that is, $\text{INTERLUDELOSS} \times (1 - \text{ALLHOUSE}) = -0.285^*$ and $\text{INTERLUDELOSS} \times (1 - \text{ALLHOUSE}) + \text{INTERLUDELOSS} \approx 0$.

TABLE 3. The Effect of Electoral Defeats on the Fiscal Deficit around Interludes

Explanatory variable	$\ln(EXP_t) - \ln(REV_t)$			$(EXP_t - REV_t) / \text{Imputed GDP}$		
	(1)	(2)	(3)	(4)	(5)	(6)
ELE	0.072*** (0.013)	0.118*** (0.021)	-0.084 (0.065)	1.104*** (0.235)	1.694*** (0.346)	-0.846 (1.212)
ELE × PROB			0.348*** (0.107)			4.367** (1.929)
ELE × (1 - ALLHOUSE)		-0.073*** (0.026)	0.244*** (0.094)		-0.909** (0.453)	2.941* (1.775)
ELE × PROB × (1 - ALLHOUSE)			-0.502*** (0.145)			-6.098** (2.670)
INTERLUDE	0.029 (0.061)	-0.068 (0.095)	-0.074 (0.095)	0.855 (1.134)	-1.185 (1.563)	-1.276 (1.561)
INTERLUDE × (1 - ALLHOUSE)		0.171 (0.118)	0.182 (0.118)		3.530* (2.142)	3.671* (2.137)
INTERLUDELOSS	0.077 (0.071)	0.258** (0.124)	0.266** (0.124)	1.576 (1.382)	5.968*** (2.140)	6.075*** (2.137)
INTERLUDELOSS × (1 - ALLHOUSE)		-0.285* (0.147)	-0.298** (0.147)		-6.637** (2.770)	-6.800** (2.764)
GOVCH	-0.021* (0.013)	-0.024* (0.013)	-0.022* (0.013)	-0.382* (0.217)	-0.413* (0.224)	-0.389* (0.225)
No. observations	3,002	2,942	2,942	2,984	2,924	2,924
R ²	0.480	0.472	0.474	0.494	0.494	0.495

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Notes: This table shows regression results from estimating equation 8 (columns 1 and 4) and equation 13 (columns 2, 3, 5, and 6). The dependent variable in columns 1–3 is $\ln(EXP_t) - \ln(REV_t)$; in columns 4–6, $(EXP_t - REV_t) / \text{Imputed GDP}$. Controls included, but not reported, are twelve lags of the dependent variable, $\ln(1 + \text{INFLATION})$, the real import growth rate, month-country fixed effect, and deterministic sixth-order polynomial time trends per country. The following countries are included in the regressions: Argentina, Brazil Colombia, Costa Rica, Dominican Republic, Ecuador, Honduras, Mexico, Nicaragua, Panama, Peru, Uruguay, and Venezuela. Nondemocratic episodes were excluded from the sample, following the Polity IV Project. Robust standard errors are reported in parentheses.

This demonstrates the importance of controlling for moderating factors over executive discretion when studying the manipulation of fiscal policy for political gain. Overall, proposition 1 is upheld by the data when the executive's party controls the legislature. Precisely, $\text{INTERLUDELOSS} = 0.258^{**}$ means that the budget deficit increases around 26 percent during interludes when the president's party is voted out relative 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 explained above, the logarithmic difference is more reliable since a measurement error in the dependent variable is not introduced. I therefore use the logarithmic difference for the rest of my analysis below.²²

22. The full set of results with the deficit as a percentage of imputed GDP is available on request.

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 13, including the probability of being defeated interacted with pre-electoral dummy variables—that is, $ELE \times PROB$ and $ELE \times PROB \times (1 - ALLHOUSE)$. Results are displayed in table 3 (column 3) for the logarithmic difference. I then conduct the following tests of proposition 2: for electoral wins when the president's party controls the legislature, as shown in equation 11,

$$\begin{aligned} E(\Delta d | \text{Win}, \text{PROB} = p_a^R, Z = 0) &< E(\Delta d | \text{Win}, \text{PROB} = p_b^R, Z = 0) \\ &< E(\Delta d | \text{Win}, \text{PROB} = 0, Z = 0) \approx 0, \end{aligned}$$

for $p_a^R > p_b^R > 0$; and for electoral defeats, as shown in equation 12,

$$\begin{aligned} E(\Delta d | \text{Defeat}, \text{PROB} = p_b^R, Z = 0) &> E(\Delta d | \text{Defeat}, \text{PROB} = p_a^R, Z = 0) \\ &> E(\Delta d | \text{Defeat}, \text{PROB} = 1, Z = 0) \approx 0, \end{aligned}$$

for $p_a^R > p_b^R > 0$. I do not expect to find any effect when the president's party does not control the legislature (that is, $Z = 1$).²³ I perform these tests for the following ranges of the probability of electoral defeat: $\text{PROB} = \{1.00, 0.90, 0.50, 0.10, 0.00\}$. Results of the linear combinations are shown in table 4 (column 2) for the logarithmic difference.²⁴

Under unified governments ($Z = 0$), as the magnitude of a surprise win increases in absolute value (that is, as PROB increases), the deficit decrease enlarges. For example,

$$\begin{aligned} E(\Delta d | \text{Win}, \text{PROB} = 0.90, Z = 0) &< E(\Delta d | \text{Win}, \text{PROB} = 0.50, Z = 0) \\ &< E(\Delta d | \text{Win}, \text{PROB} = 0.10, Z = 0) \approx 0. \end{aligned}$$

23. As mentioned before, $Z = 1 - \text{ALLHOUSE}$.

24. The tests for deficit as a percentage of imputed GDP produce very similar results (available on request).

TABLE 4. Estimating the Effect of the Magnitude of the Electoral Surprise on the Fiscal Deficit: Linear Combinations of Estimators

Linear combination	(1) <i>Z = none</i>		(2) <i>Z = 1 - ALLHOUSE</i>	
	Point estimate	(Std. error)	Point estimate	(Std. error)
(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)

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Notes: This table displays linear combinations of estimators from the regression results of equation 8 (column 1) and equation 13 (column 2). The dependent variable used is $\ln(EXP_t) - \ln(REV_t)$. For column 1, the linear combinations that come from the regression results of equation 8 are $E(\Delta d|Win, PROB = x_i) = INTERLUDE - (ELE + ELE \times x_i)$ and $E(\Delta d|Defeat, PROB = x_i) = INTERLUDELOSS + INTERLUDE - (ELE + ELE \times x_i)$. For column 2, the linear combinations that come from the regression results of equation 13 are $E(\Delta d|Win, = x_i, Z) = INTERLUDE \times Z + INTERLUDE - (ELE + ELE \times x_i) - (ELE \times Z + ELE \times Z \times x_i)$ and $E(\Delta d|Defeat, PROB = x_i, Z) = INTERLUDELOSS \times Z + INTERLUDE \times Z + INTERLUDELOSS + INTERLUDE - (ELE + ELE \times x_i) - (ELE \times Z + ELE \times Z \times x_i)$. Controls included in the regressions, but not reported, are twelve lags of the dependent variable, $\ln(1 + INFLATION)$, the real import growth rate, month-country fixed effect, and deterministic sixth-order polynomial time trends per country. The following countries are included in the regressions: Argentina, Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, Honduras, Mexico, Nicaragua, Panama, Peru, Uruguay, and Venezuela. Nondemocratic episodes were excluded from the sample, following the Polity IV Project.

Analogously, as the magnitude of a surprise defeat increases (that is, as PROB decreases), the deficit increase enlarges. For example,

$$E(\Delta d|Defeat, PROB = 0.10, Z = 0) > E(\Delta d|Defeat, PROB = 0.50, Z = 0) > E(\Delta d|Defeat, PROB = 0.90, Z = 0) \approx 0.$$

However, as expected, these patterns are not replicated under divided government, that is, when $Z = 1 - ALLHOUSE = 1$ (see table 4, column 2,

rows 11–20). Finally, column 1 shows the linear combination results when controls for divided governments are not included.²⁵ As expected, those magnitudes of electoral surprise do not generate consistent patterns, as predicted by equations 11 and 12 above. Overall, this demonstrates that the data uphold the hypothesis on the strategic use of the deficit when the president's party controls the legislature.

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 in tests of that theoretical prediction.

This paper improves on the identification strategy of earlier studies of the strategic use of debt. I exploited the existence of extended interludes (that is, the time between the election and the date of the change of government) 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 that when the president's party controls the legislature, the higher the increase (decrease) in the probability of being defeated, the higher the increase (decrease) in the executed budget deficit between pre-electoral periods and interludes. However, I found no effects under divided government. This indicates that when the executive faces lax controls and constraints from the legislature, the budget deficit can be manipulated even after an electoral defeat. This is something new in the literature. While Streb, Lema, and Torrens (2009), Streb and others (2012), and Streb and Torrens (2013) show that political budget cycles are exacerbated under unified government, I show that the manipulation of budget deficits is exacerbated under unified government even after an electoral defeat, during presidential transitions.

In the online appendix (<http://economia.lacea.org/contents.htm>), I briefly study the role of budget institutions as an additional factor for moderating executive discretion over budget manipulation around interludes and elections. Although these exercises corroborate findings that budget institutions

25. Regression results used for constructing linear combinations of column 1 are not reported but are available on request.

in Latin America are effective in dampening fiscal indiscipline in the long run (Stein, Talvi, and Grisanti, 1998; Alesina and others, 1999; Filc and Scartascini, 2007), surprisingly, I found that they are not significantly effective in stopping defeated presidents from overspending during interludes when government is 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 legislature's role in budget oversight tends to be diluted (Messick, 2002; Santiso, 2004). Second, budget laws are more likely to be circumvented to allow budget modifications, since presidential decrees are used more often to achieve that goal under unified government, insofar as legislative approval is required (Mainwaring and Shugart, 1997; Negretto, 2004; Pereira, Power, and Rennó, 2005). I am not aware of any papers that use the interaction between budget institutions and divided versus unified government to study the effects on budget manipulations for political gain around elections. This paper conducts a first study of those interactions and their effects on fiscal policy around elections, which will likely raise questions for future research.

Studying the interludes is interesting in itself. In practice, different electoral systems work with widely different interludes. For example, Mexico has around four months, while Peru has only one. In the former country, there is an ongoing debate as to whether shortening interludes would be beneficial, to the extent that the outgoing incumbent's policies do not match citizens' current preferences. Moreover, policy disagreements between the outgoing and incoming presidents constitute additional risks that have to be reduced.²⁶ My findings suggest that the existence of extended interludes may give opportunistic incumbents enough time to overspend in order to leave fewer resources for the new administration to initiate its government, in particular when the legislature is controlled by the incumbent's party. Shortening interludes may thus generate welfare gains.

26. Rolando Ramos, "Acortarán período de transición presidencial." *El Economista*, 2 October 2012.

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Additional Readings

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