

LORENA G. BARBERIA  
GEORGE AVELINO

## Do Political Budget Cycles Differ in Latin American Democracies?

The literature on political business cycles has produced important insights on the extent to which politicians attempt to manipulate government monetary and fiscal policies to influence electoral outcomes. In particular, some of the strongest evidence produced to date suggests that electoral cycles are particularly marked in the case of government expenditures.<sup>1</sup> Governments in developing countries and so-called new democracies are often considered to be the most susceptible to the manipulation of fiscal and monetary policy to enhance their chances of reelection.<sup>2</sup> The experiences of recently reestablished Latin American democracies in a period marked by episodes of heightened macroeconomic volatility followed by the adoption of painful stabilization measures provide fertile ground for testing political budget cycle theories and recently formulated arguments on the acuteness of these patterns for young fragile democratic regimes in developing countries.

The case of Argentina is illustrative of the expected trajectory in Latin American countries. Following the return of democracy in 1983, the Alfonsín and Menem administrations spent an average of 12.94 percent of GDP and collected an average of 10.67 percent of GDP in tax revenue. During this early period of democracy, fiscal deficits averaged 2.28 percent of GDP. Budget deficits worsened to an average of 2.98 percent in an election year. The rise in the deficit was driven by the decrease in tax collection, which fell by 6.3 percent as spending only rose by 0.003 percent. Fiscal balances improved after Fernando de la Rúa assumed the presidency in 1999, with an average fiscal deficit of 1.20 percent of GDP between 2000 and 2008. Additionally, fiscal

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1. Drazen (2001); Franzese (2002).
2. Block (2002b); Brender and Drazen (2005c).

balances did not deteriorate during elections, but rather improved slightly. When Néstor Carlos Kirchner was elected president in 2003, Argentina ran a slight fiscal surplus of 0.12 percent.

This paper seeks to verify whether these patterns hold systematically for Latin America by exploring two questions. First, are elections catalysts for fiscal policy performance in Latin America? Second, are electoral competitions more likely to provoke larger increases in fiscal deficits during democratic transitions? To answer these questions robustly, we test for political deficit cycles in Latin American democracies employing different measures of democracy, transitions, and election cycles. Our results confirm that elections provoke increases in the fiscal deficit for Latin American democracies, but this pattern is not contingent on a country being in the early phase of its democratic transition. This highlights the importance of the selection criteria used to define democracy and competitive elections when testing for political budget cycles.

The paper is structured in the following way. The next section reviews existing theory on the behavior of democracies with respect to government spending, revenue collection, and budget deficits, as well as findings that might clarify why competitive elections held in Latin America during transitional democratic periods may prove to be particularly important and distinct. The paper then describes the time-series cross-sectional data set employed for hypothesis testing and introduces the measures used to test the impact of elections in all Latin American democracies and whether cycles differ when a democratic regime is in a transitional stage. In this section, we also discuss different measures for democracy and recent democratization and the importance of using these measures to undertake more robust testing of the findings reported in earlier studies on political budget cycles in recent democracies. The next section introduces the model specifications used for hypothesis testing in this paper and the battery of alternative models adopted to check the findings for robustness. We then present and discuss the results of the empirical analysis. The final section concludes the paper with a summary of the key findings.

## **Review of the Literature**

A crucial assumption of political business cycle models is that voters choose leaders on the basis of economic variables, so the degree, nature, and timing of economic policies influence citizens' decisions at the ballot box. The electoral

motivations that may guide government policies were discussed by Schumpeter in his study of business cycles and described by Kalecki, but the theoretical framework to describe the opportunistic (office-seeking) motivations of politicians was formally developed much later, by Nordhaus and Tufte.<sup>3</sup> These early and subsequent models are based on the same assumptions: elected leaders in control of monetary policy were able to successfully manipulate economic activity by surprising myopic voters, who were limited to basing their opinions solely on past incumbent performance and inflation rates. More recent theories have made important advances in two important realms.<sup>4</sup> First, models have incorporated forward-looking, rational expectations.<sup>5</sup> Second, research has explored the effects of right- and left-wing party orientation on macroeconomic outcomes during and after elections.<sup>6</sup>

Arguing that monetary surprises are an unconvincing driving force for political business cycles, a group of studies has reinvigorated efforts to develop and test models that emphasize fiscal policy as the motivating force for opportunistic cycles.<sup>7</sup> The basic rationale behind models that emphasize the political budget cycle is that governments will manipulate fiscal policy, in part, to obtain electoral success. Based on empirical research, a significant number of recent studies argue that political budget cycles are more acute and more marked in the case of less developed countries.<sup>8</sup>

Given the widespread political instability and macroeconomic fluctuations that have marked the region in recent decades, a significant share of the literature on political budget cycles in developing democracies has focused on Latin America.<sup>9</sup> Thus far, the evidence of the “electioneering” of government expenditures and fiscal balances in Latin America, however, has yielded inconclusive findings.

3. Schumpeter (1939); Kalecki (1943); Nordhaus (1975); and Tufte (1978).

4. Drazen (2001).

5. For example, Rogoff and Sibert (1988); and Rogoff (1990).

6. Alesina (1987). Franzese (2002) provides a valuable summary of the findings emerging from partisan cycles. The effects of ideological orientation on the findings reported in this paper will be a task for future research.

7. Drazen (2001). For a critique and dissenting view of political budget cycles, see Alt and Chrystal (1981).

8. Block (2002a, 2002b); Block, Ferree, and Singh (2003); Shi and Svensson (2002, 2006); Schuknecht (2000). In contrast, Persson and Tabellini (2003) find that political budget cycles are also present in developed democracies in a sample that also includes developing countries.

9. In this section, we have chosen to concentrate our analysis on a discussion emphasizing cross-national empirical research. There have been a number of notable contributions to the study of political budget cycles in specific Latin American countries, including Drazen and Eslava (2010).

Ames finds that government expenditures rose before and after the sixty-five elections that took place in seventeen Latin American countries between 1948 and 1970, although only post-election spending proved to be statistically significant.<sup>10</sup> In a later work based on the same group of countries, Ames reports that government expenditures increased by 6.3 percent in the year before and decreased by 7.6 percent in the year after the eighty-two elections that took place between 1947 and 1982.<sup>11</sup>

In a study of eight South American democracies during the 1980s, Remmer reports that the quarterly percentage change in the fiscal balance is heterogeneous across countries.<sup>12</sup> She argues that elections in Latin America in the 1980s provided leaders with greater political capital to enact reform, given voters' preferences for reduced income volatility and inflation. Underscoring the importance of the macroeconomic context in the region, she posits that there is evidence of an "anti-political business cycle" in presidential elections in Argentina (1989), Bolivia (1985), Brazil (1989), Ecuador (1984 and 1988), Peru (1990), and Venezuela (1988) for the exchange rate and inflation.<sup>13</sup> However, budget deficits were only reduced following the election of Carlos Andrés Pérez Rodríguez in Venezuela, while the election of Carlos Saúl Menem in Argentina was followed by fiscal expansion.

More recent studies on the political determinants of government spending and budget deficits in Latin America provide stronger evidence of political budget cycles, but the reported findings are based on only a subset of all Latin American democracies.<sup>14</sup> In a study of eight Latin American countries between 1983 and 1998, Mejía Acosta and Coppedge control for a multiplicity of political determinants and find that budget deficits worsen during elections, though government expenditures do not increase.<sup>15</sup> Their findings are confirmed by Amorim Neto and Borsani, who analyze the influence of presidential and cabinet effects in ten Latin American countries between 1980 and 1998.<sup>16</sup> The authors argue that fiscal difficulties during elections are driven by the reluctance of governments to increase taxes. In our paper, we use data from the entire sample of eighteen Latin American democracies for the period

10. Ames (1977).

11. Ames (1987).

12. Remmer (1993).

13. There is robust evidence that the timing of devaluations in Latin America is influenced by the election cycle. See Stein and Streb (1998, 2004) and Stein, Streb and Ghezzi (2005).

14. Amorim Neto and Borsani (2004); Mejía Acosta and Coppedge (2001).

15. Mejía Acosta and Coppedge (2001).

16. Amorim Neto and Borsani (2004),

between 1973 and 2008 to elucidate these earlier suggestive, albeit inconclusive, findings.

One of the problems that pose the greatest challenge for interpreting the empirical evidence produced to date is that all too often insufficient attention is given to the selection criteria used to define democracy and competitive elections. This point is underscored by Brender and Drazen, who conclude that “if the political budget cycle reflects the manipulation of fiscal policy to improve an incumbent’s reelection chances, then it only makes sense in countries in which elections are competitive.”<sup>17</sup> Our review of the studies that test for political budget cycles during elections in developing countries reveals that many include contests held under both democratic and authoritarian regimes.<sup>18</sup> For example, Block finds a marked increase in public expenditures on current consumption goods and a decrease in public investment in presidential election years in sixty-nine developing countries between 1975 and 1990.<sup>19</sup> However, this study includes both multi-party and single-party elections, thus confounding interpretation as to exactly how regime type might be influencing the reported results.

The same problem is found in research specific to Latin America. For example, both of the studies by Ames include elections during periods in which countries were ruled by the military.<sup>20</sup> Mejía Acosta and Coppedge include Mexican presidential elections in which electoral victories were dominated by the Partido Revolucionario Institucional (PRI) and compare these elections with the outcomes from decisions in Argentina, Brazil, Chile, Ecuador, Venezuela, and Uruguay after democracy had returned to these countries.<sup>21</sup> To address this concern, we carefully considered how to define democratic elections before we adopted a research design to test for political budget cycles.

An often-cited argument as to why we should expect to find greater political budget cycle effects in developing democracies focuses on the level of development of their political institutions.<sup>22</sup> These studies argue that the dynamics of political competition are very distinct in recent democracies based on both the

17. Brender and Drazen (2005c, p. 1274),

18. Block (2002a, 2002b); Block, Ferree, and Singh (2003); Shi and Svensson (2002, 2006).

19. Block (2002a).

20. Ames (1977, 1987).

21. Mejía Acosta and Coppedge (2001). The authors also recognize this problem stating, “although Mexico was not clearly democratic until the 2000 presidential election, it offers a useful example of fiscal performance in a hegemonic party system” (p. 9).

22. Persson and Tabellini (2003); Keefer (2005); Keefer and Khemani (2005); Brender and Drazen (2005c); González (2002).

experience level of voters and the maturity of political institutions. Because voters lack the experience and information to hold elected officials accountable in democracies that have recently transitioned from authoritarian rule, they are more apt to believe campaign promises and can therefore be more easily manipulated by politicians in the first few elections. In addition, political institutions such as the legislature, the judiciary, the central bank, and the media may not be autonomous or institutionalized in the early stages of democracy.<sup>23</sup>

In a related work on democratization, Przeworski argues that pressures to increase representation are largely driven by Keynesian coalitions that demand greater redistribution.<sup>24</sup> Accordingly, he argues that incoming elected governments during democratic transitions face a huge backlog of unfulfilled demands, which weakens their ability to effectively manage the economy. Based on the recognized confluence of economic and political crises that usually precipitate democratic transitions, some scholars argue that newly elected governments need to adopt policies that are unsustainable in the medium to long run given the threat of a reversion to autocracy.<sup>25</sup>

Brender and Drazen robustly test for the impact of recent democratization on political budget cycles in a cross-section of developed and developing countries from 1960 to 2001.<sup>26</sup> They argue that the pattern of political budget cycles in a large cross-section of countries is driven by new democracies and that fiscal manipulation is not statistically significant for established democracies once the sample is appropriately separated. Brender and Drazen find that there is a significant political deficit cycle for new democracies (defined as the first four competitive elections) and argue that higher election-year expenditures in the “first few elections” are the lever triggering this effect.<sup>27</sup> The authors believe that their findings resonate with earlier studies indicating that voters in developed economies are fiscal conservatives and often tend to

23. Schuknecht (2000).

24. Przeworski (1991).

25. Haggard and Kaufman (1989).

26. Brender and Drazen (2005c). This is not the only criterion that has been used to test for differences between new and established democratic periods based on a specific time period. Rodrik and Wacziarg (2005, p. 51) define a new democracy as a variable that “takes on a value of 1 in the year(s) and subsequent five years of any major democratization (as defined by Polity IV), unless the process is interrupted by another major regime change, in which case the dummy is coded as 1 until the interruption.” An established democracy is an indicator variable coded 1 for the sixth and subsequent years of a democracy.

27. In contrast to the findings we report for Latin America in this paper, Brender and Drazen (2005c) do not find evidence of a political tax revenue cycle.

remove deficit-producing incumbents from office.<sup>28</sup> They argue that voters in new democracies are less experienced with electoral economics and verify that the net result is higher spending and deficits associated with the first few elections after transition.

In a related vein, Block, Ferree, and Singh test whether economic policy performance improves in the early period of democratization.<sup>29</sup> The authors focus on so-called founding elections in sub-Saharan African countries between 1980 and 1995, which they define as the first competitive election in which the position of the head of office was openly contested. The authors argue that these elections may be particularly vulnerable to political budget cycles because authoritarian incumbents have much discretion to manipulate expenditures prior to elections. Moreover, nondemocratic leaders who are reluctantly holding elections may also dig deep into government coffers to scare off the opposition, so the winners will undoubtedly have to undertake painful stabilization measures. Countries that have only recently undergone democratization may have reduced capacities to check and balance the powers of the executive branch. Voters may also be more credulous, thus expanding the power of nondemocratic rulers to manipulate fiscal and monetary policies. Based on sixty-five presidential elections, the authors report that competitive multiparty elections (thirty-three of the total elections) are associated with higher monetary growth and government consumption as a share of GDP than noncompetitive elections. However, the hypothesis that founding elections have an additional effect on government spending is not validated.

In Latin America, some suggestive evidence that increased political competition during the transition to democracy fuels political budget cycles is provided by González, who studies autocratic Mexican presidential elections between 1957 and 1997.<sup>30</sup> She measures increased levels of democratization during elections through lower scores on the Index of Political Coercion and the Autocracy Index. Based on this questionable measure, she argues that greater levels of democracy exacerbated political budget cycles because the PRI responded to the growing threat of losing power by spending more and more resources on election campaigns to ensure its victory. Given that the development of Mexico's political institutions is leading to improvements in transparency and accountability, the study concludes by warning that the

28. Alesina and others (1998); Peltzman (1992).

29. Block, Ferree, and Singh (2003).

30. González (2002).

election effect will increase as the country becomes more accountable and democratic.

The majority of countries in Latin America experienced a founding election marked by the participation of formerly banned political parties and the retreat of the military between the late 1970s and the 1990s. Latin America thus represents an extremely relevant region for examining the vulnerability of democratizing countries to political budget cycles.<sup>31</sup> Specifically, transitions to democracy occurred in Argentina, Bolivia, Brazil, Chile, the Dominican Republic, Ecuador, El Salvador, Guatemala, Peru, and Uruguay between 1974 and 1990. Subsequently, democracy also returned to Panama and Paraguay in the mid-1990s and Mexico in 2000.

One of the striking features of the recent empirical research aimed at testing whether recent democratization is associated with decreases in tax collection and increases in fiscal deficits and government spending is that the beginning and end of the democratic transition is defined as a given number of elections (for example, the first election or the first four competitive elections). Alternative definitions for the period of democratic transition have been developed in political science, but they have not yet been used in empirical political budget cycle research. In this paper we test whether the results of studies that argue that new democracies or democratizing countries are susceptible to political budget cycles differ when these theoretically driven criteria for democratic transitions are employed.

## Data

The data we employ to test for political budget cycles are drawn from a variety of sources. We describe them below.

### *Fiscal Data*

The dependent variables in this paper are drawn from annual data on central government total expenditure, total revenue and grants, and balance from *Government Finance Statistics* (GFS) published by the International Monetary Fund (IMF).<sup>32</sup> We used the data set based on the IMF's GFS database that was revised by Brender and Drazen for 1973 to 2001 and added observations for

31. Huntington (1991).

32. IMF (2009).



2002 to 2008 for countries in which data were available from the IMF.<sup>33</sup> All three variables are defined in relative terms as a percentage of GDP, which is based on the figures reported by the IMF in its *International Finance Statistics* (IFS). In all eighteen countries, the fiscal calendar year follows the calendar year.

We use the terms fiscal balance and deficit interchangeably in the paper, as most countries ran persistent budget deficits throughout the period. A positive value of the fiscal balance should be interpreted as a budget surplus.

### *Democracy and Election Data*

One of the main motivations of this paper is to test the argument that new democracies are more susceptible to political budget cycles, which we do by testing whether study results differ when different criteria for democracy and democratic transitions are used. To explore these differences, we run all empirical tests using two different definitions for democracy and democratic transitions.

We restrict the sample to include only democratic years, and for this we employ two definitions of democracy. The first measure is based on Polity IV, analogous both to Brender and Drazen and to Persson and Tabellini; it restricts the sample to countries that received a score between 0 and 10 on the political regime scale, which ranges from -10 (autocracy) to 10 (the highest level of democracy).<sup>34</sup> This is the standard measure used in most empirical research on political budget cycles. The data are based on country assessments by academics using the available literature.<sup>35</sup> However, the measure is subjective and thus is not easily reproducible.

The second measure is based on a dichotomous definition of democracy. In contrast to Polity IV, this measure derives from a conceptual definition of democracy, and it is built on empirical observables rather than subjective judgments. The measure is based on minimalist criteria, which we describe as such throughout the paper.<sup>36</sup> The minimalist criterion for the democracy

33. Brender and Drazen (2005c). The raw GFS data was supplemented by IFS data by Brender and Drazen. The procedures are described in Brender and Drazen (2005b). The data set is available online at [www.econ.umd.edu/~drazen/](http://www.econ.umd.edu/~drazen/). A dummy variable was included in all model estimations to code for the observations added for the period 2001–08. The results reported in this paper are also robust if the data are restricted to 1973–2001.

34. Brender and Drazen (2005c); and Persson and Tabellini (2005).

35. Marshall, Jagers, and Gurr (2008).

36. Democracy is defined simply as the regime in which government offices are filled through competitive elections. See Álvarez and others (1996) for more details.

dummy variable is drawn from an updated database developed by Cheibub, Gandhi, and Vreeland, which extends the dataset first published in Álvarez, and others in terms of both coverage (country and year) and variables.<sup>37</sup>

Under either Polity IV or the Cheibub and others data set, Colombia, Costa Rica, and Venezuela are considered democratic during the entire period. In each case, however, the sample is unbalanced in that the other fifteen countries enter the sample in only some years. In some cases, the Polity IV measure and the minimalist definition are in agreement on the period of democracy. For example, Argentina is excluded in both samples between 1976 and 1982. In other cases, there are major differences in the year of entry or exit of a particular country.

The most important differences between Polity IV and the minimalist criterion are in the treatment of Mexico and Peru. Based on Polity IV, Mexico is included as a democracy starting in 1988 with the election of Carlos de Salinas de Gortari. In contrast, Cheibub, Gandhi, and Vreeland consider Mexico to be a democracy after the 2000 election in which Vicente Fox assumed power after the Partido Revolucionario Institucional (PRI)—which had dominated Mexican presidential elections since 1910—ceded power to the Partido Acción Nacional (PAN).<sup>38</sup> In the case of Peru, the period between the election in 1990, after which Alberto Fujimori staged a coup d'état in April 1992, and Fujimori's resignation in 2000 is considered autocratic by Cheibub, Gandhi and Vreeland, but it is considered part of an uninterrupted period of democracy that began in 1980 if the Polity IV data set is used. As a result of these differences and additional ones for a smaller number of years in the cases of Bolivia, Chile, the Dominican Republic, Ecuador, Guatemala, and Nicaragua, there are forty-six years that are coded differently depending on which measure is used.

To replicate the models tested by Brender and Drazen, we used the “rule of the year” to create a dichotomous dummy variable to code the election year period.<sup>39</sup> Using this rule, we assigned a value of one if an election occurred during the year in question and zero otherwise.<sup>40</sup> Election data are drawn from Nohlen and the Political Database of the Americas (PDBA).<sup>41</sup> Table 1 presents

37. Cheibub, Gandhi, and Vreeland (2010); Álvarez and others (1996).

38. Cheibub, Gandhi, and Vreeland (2010).

39. Brender and Drazen (2005c).

40. We also tested an alternative measure based on the rule of the semester. According to this rule, if an election was held during the first half of year  $t$ , then the election year is coded as the year before, or  $t - 1$ . The results from this alternative method provide a check on the results reported in this paper and are presented in the appendix.

41. Nohlen (2005). The PDBA is maintained by the Center for Latin American Studies at Georgetown University; we used data accessed in 2009.

**TABLE 1. Presidential Elections in Latin America, 1973–2008**

<i>Country</i>	<i>Presidential election dates</i>	<i>Elections excluded by minimalist criterion</i>	<i>Elections excluded by Polity IV criterion</i>
Argentina	9/1973, 10/1983, 5/1989, 5/1995, 10/1999, 4/2003, 10/2007	None	None
Bolivia	6/1980, 7/1985, 5/1989, 6/1993, 6/1997, 6/2002, 12/2005	6/1980	None
Brazil	1/1985, 11/1989, 10/1994, 10/1998, 10/2002, 10/2006	None	1/1985
Chile	12/1989, 12/1993, 12/1999, 12/2005	12/1989	None
Colombia <sup>a</sup>	4/1974, 4/1978, 5/1982, 5/1986, 5/1990, 6/1994, 6/1998, 5/2002, 5/2006	None	None
Costa Rica <sup>a</sup>	2/1974, 2/1978, 2/1982, 2/1986, 2/1990, 2/1994, 2/1998, 2/2002, 2/2006	None	None
Dominican Republic	5/1974, 5/1978, 5/1982, 5/1986, 5/1990, 5/1994, 6/1996, 5/2000, 5/2004, 5/2008	None	5/1974
Ecuador	4/1979, 1/1984, 1/1988, 7/1992, 7/1996, 6/1998, 10/2002, 10/2006	None	None
El Salvador	3/1984, 3/1989, 4/1994, 3/1999, 3/2004	None	None
Guatemala	3/1974, 3/1978, 11/1985, 11/1990, 11/1995, 11/1999, 11/2003, 9/2007	11/1985	3/1974, 3/1978, 11/1985
Honduras	11/1981, 11/1985, 11/1989, 11/1993, 11/1997, 11/2001, 11/2005	11/1981	None
Mexico	7/1988, 8/1994, 7/2000, 7/2006	7/1988, 8/1994	None
Nicaragua	11/1984, 2/1990, 10/1996, 11/2001, 11/2006	None	11/1984
Panama	12/1989, 5/1994, 5/1999, 5/2004	None	None
Paraguay	3/1989, 5/1993, 5/1998, 4/2003, 4/2008	None	None
Peru	5/1980, 4/1985, 4/1990, 4/1995, 4/2001, 4/2006	4/1990, 4/1995	None
Uruguay	11/1984, 11/1989, 11/1994, 10/1999, 10/2004	11/1984	None
Venezuela <sup>a</sup>	12/1973, 12/1978, 12/1983, 12/1988, 12/1993, 12/1998, 7/2000, 12/2006	None	None

a. No democratic transition.

a summary of the elections that are included and specifies which elections are points of contention depending on whether the Cheibub, Gandhi, and Vreeland database or Polity IV are used to define democratic regimes.

Using either the Polity IV or minimalist criterion, there are 108 presidential elections in the data set. All eighteen countries had at least one presidential election, but different elections are included or excluded depending on the criterion adopted. On average, there are 6.5 presidential elections per country. We focus on presidential elections and do not include midterm legislative elections. This approach follows the literature; studies that include congressional elections do not find that these elections have distinct impacts on electoral cycles.<sup>42</sup>

42. Drazen (2001).

We also created an interactive term to code elections in which the incumbent president could be reelected. Reelection is prohibited in most Latin American countries; only five countries in the sample permitted immediate reelection during specific periods between 1973 and 2008.<sup>43</sup> Incumbents won in eleven of these sixteen elections. The cases of successful immediate reelection are Argentina (Carlos Saúl Menem in 1995), Brazil (Fernando Henrique Cardoso in 1998 and Luiz Inácio “Lula” da Silva in 2006), Colombia (Álvaro Uribe in 2006), the Dominican Republic (Joaquín Balaguer in 1974, 1986, 1990, and 1994 and Leonel Fernández in 2008), and Venezuela (Hugo Chávez in 2000 and 2006). The dummy variable was coded to equal one if reelection of the president was possible and zero otherwise.

As for the coding of democracy, we also test if the results suggesting that there are differences in the behavior of political budget cycles in young democracies are influenced by whether an ad hoc criterion is used. The first measure follows the definition adopted by Brender and Drazen, in which observations for the first four competitive elections are defined as occurring in a new democracy. According to this criterion, 60 of the 108 elections represent new democratic elections.<sup>44</sup>

The second measure for recent democratization is based on theoretical underpinnings rather than an arbitrary time period. We created a dichotomous dummy variable that codes one for the democratic transition period. For this measure, the beginning of democratic transition is defined as the year of the inauguration of the first democratic regime following a period of authoritarian rule.<sup>45</sup> Huntington defends the alternation in power of opposition parties as an important criterion for defining the consolidation of democracy.<sup>46</sup> He defines the onset of stable democracy as the second consecutive democratic turnover in which there is a change in the political party controlling the presidency. This two-turnover test, in his opinion, is an unambiguous measure of the resilience of democracy. This definition is also consistent with the definition of democracy adopted in this study following Álvarez and others, who argue that this regime is characterized by the opposition rising to power through elections.<sup>47</sup>

43. Payne and others (2007).

44. Brender and Drazen (2005c).

45. O'Donnell and Schmitter (1986).

46. Huntington (1991).

47. Álvarez and others (1996).

**TABLE 2. Summary Statistics for Democracy and Elections in Latin America, 1973–2008<sup>a</sup>**

<i>Summary statistic</i>	<i>Polity IV criterion</i>	<i>(b) Minimalist criterion</i>
Number of democratic years	478	472
Number of democratic transition years	288	222
Number of non-transition years	190	250
Percentage of democratic transition years	60	47
Number of elections (year rule)	108	108
Number of elections in democratic transition period	60	53
Percentage of elections in democratic transition period	56	49

a. The Polity IV criterion for a new democracy is the first four consecutive elections following the end of autocratic rule. The minimalist criterion for a transitional democracy is the founding election, with the democratic transition phase lasting through two election turnovers.

According to the two-turnover test, the democratic transition period is coded as the years between the year of the founding election and the year of the second election in which an opposition party wins and assumes office. In the case of Argentina, for example, this implies that the transitional period is between 1983 and 1999 (the year Fernando de la Rúa was elected to the presidency, returning the Unión Cívica Radical to power). The year after the de la Rúa election is defined as the first year of post-transition democracy. As table 2 summarizes, fifty-three elections in the sample meet these criteria.

One of the key challenges in the analysis of elections is the extent to which they may be endogenous, as the end of a particular regime is sometimes not predetermined, but coincides with economic crises.<sup>48</sup> There are a few reasons why the endogeneity of elections does not seem to be a significant problem for the questions explored in this paper. First, the problem of simultaneity bias is much more severe in political budget cycle studies that employ economic growth, unemployment, and inflation as dependent variables, since declines in the performance of these variables are precisely what tend to trigger the collapse of particular administrations. Second, unlike parliamentary democracies, elections are typically held on a fixed schedule in presidential democracies such as those found in Latin America. Of course, there are some notable exceptions. In Bolivia, Hernán Siles Zuazo held presidential elections one year earlier than the end of his term in 1985 in response to rampant hyperinflation. In Argentina, Raúl Alfonsín similarly ceded power earlier than anticipated, though only by a few months. In 2001 Fernando de la Rúa resigned from the Argentine presidency after only two years in office in light of massive protests and a spiraling economic crisis.

48. Przeworski and Limongi (1993); Haggard and Kaufman (1997).

### *Control Variables*

The demographic and economic variables included as control variables are analogous to those used by Brender and Drazen.<sup>49</sup> Demographic characteristics of the population are likely to influence government spending. Two demographic variables representing the fraction of the population aged fifteen to sixty four and aged sixty-five and over are used as controls. A higher percentage of elderly and young people in the population are expected to positively increase budget allocations for social programs and social security, leading to increases in fiscal spending and the worsening of budget deficits. Unless otherwise noted, the control variables data are from *World Development Indicators*.<sup>50</sup>

Given the heterogeneity in income and growth rates across the region, it is important to include economic controls. The first is the level of economic development, defined as the real gross domestic product per capita and measured in constant 2000 U.S. dollars. Per capita income is included in the model to control for Wagner's law, which holds that the level of public spending is positively correlated with levels of economic development. Higher levels of per capita income are expected to be correlated with higher levels of government spending. A control for the output gap or the proportion of growth that is unexpected in a given year is also included, again following Brender and Drazen.<sup>51</sup> We use the log-difference between real GDP and its (country-specific) trend (computed using the Hodrick-Prescott filter).

Trade liberalization increased dramatically in Latin America in the 1990s. We thus include a measure of trade integration to control for the degree of an economy's integration with world markets. Trade is calculated as the sum of imports and exports relative to GDP, where the denominator is calculated by converting domestic local currency to current U.S. dollars based on exchange rate conversions. In addition to these variables, a dummy variable was included to control for the additional years that were added to the Brender and Drazen data set from the IMF's GFS database.

### **Estimation Procedure and Model Specification**

The baseline model used to test the effect of elections on fiscal variables is as follows:

49. Brender and Drazen (2005c).

50. World Bank (2009).

51. Brender and Drazen (2005c).

$$(1) \quad Y_{i,t} = \alpha_t + \hat{\beta}_1 Y_{i,t-1} + \hat{\beta}_2 \mathbf{Z}_{i,t} + \hat{\beta}_3 \text{ELEC}_{i,t} + c_i + \mu_{i,t}.$$

The three measures of fiscal policy, which are analogous to those used by Brender and Drazen, are total government spending as a share of GDP, total revenue collection as a share of GDP, and the budget balance as a share of GDP.<sup>52</sup>  $\mathbf{Z}$  is a vector of control variables as described earlier, and  $\alpha$  represents year dummies. The index  $i$  refers to the  $N$  observational units (or panels), and  $t$  indexes the  $T$  time periods. The term  $c_i$  is a dummy variable for each country, intended to capture unobserved country-specific effects, while  $\mu_{it}$  is an error term associated with unit  $i$  at time  $t$ .

This model follows the literature and tests whether there are differences in spending prior to elections by including a dummy variable, ELEC, for the election year. We check the robustness of political budget cycles to alternative definitions of democracy by employing the two different definitions described in the previous section of this paper. Specifically, we code a given election year as one if a country received a score indicating that it was a democracy based on the Polity IV criteria, and we then compare these results with those obtained when democratic elections are determined using the minimalist criterion defined by Cheibub, Gandhi, and Vreeland.<sup>53</sup> We seek to verify if both measures yield a positive coefficient that is significantly different from zero in the year of the election.

Based on the assumption that past fiscal policy levels influence future levels, we include a lagged dependent variable in each specification. We used a series of alternative estimation strategies to check for consistency and robustness of the results; these are reported in the next section of this paper. First, we estimated pooled ordinary least squares (OLS) regressions with panel corrected standard errors (column 1).<sup>54</sup> We also estimated country fixed effects (column 2) and year and country fixed effects (column 3).<sup>55</sup> In addition, two

52. Brender and Drazen (2005c).

53. Cheibub, Gandhi, and Vreeland (2010).

54. The model was estimated with the Stata XTPCSE command.

55. For fixed  $T$ , Nickell (1981) demonstrates that the within-group estimate of the coefficient is likely to be biased downward by a factor of  $1/T$ , where  $T$  is the length of the panel. Thus, the magnitude of the bias in the fixed-effects estimates can be calculated for the within-group estimator for a dynamic model with fixed individual effects. The exact magnitude depends on which sample and indicator are used, as some countries do not report data for the entire period. In a panel of all countries from 1973 to 2008, the length of the sample ranges from thirty-six years to a minimum length of nineteen years for three countries (Honduras, Nicaragua, and Paraguay). Hence, the bias from using a fixed-effects estimator in these regressions is likely to range from 2.77 percent (1/36) to 5.26 percent (1/19).

generalized method of moments (GMM) procedures were used: Arellano and Bond's first-differenced GMM estimator and Blundell and Bond's system GMM estimator (columns 4 and 5).<sup>56</sup> Therefore, tables 3 through 6 consist of five columns. The GMM difference and systems equations use two lags of the dependent variable. The GMM estimates use the Arellano-Bond (difference) and Blundell-Bond (system) procedures with orthogonal deviations to adjust for an unbalanced panel; the deviations were collapsed to minimize the number of instruments following the recommendations of Roodman.<sup>57</sup> Per capita GDP and the log difference between real GDP and its (country-specific) trend (computed using the Hodrick-Prescott filter) were also included as endogenous variables in the GMM estimations. For GMM estimates, standard errors are reported as *t* statistics based on Windmeijer finite sample correction and corrected for serial correlation and heteroskedasticity.<sup>58</sup>

To test whether the election effect depends on an election taking place under either a new democracy or a transitional democracy, we undertake a second estimation:

$$(2) \quad Y_{i,t} = \alpha_t + \hat{\beta}_1 Y_{i,t-1} + \hat{\beta}_2 Z_{i,t} + \hat{\beta}_3 \text{ELEC}_{i,t} + \hat{\beta}_4 \text{RECENTDEM}_{i,t} \\ + \hat{\beta}_5 (\text{ELEC} \cdot \text{RECENTDEM})_{i,t} + c_i + \mu_{i,t},$$

where ELEC and RECENTDEM are dummy variables coding years considered election and democratic transition years. The variable ELEC · RECENTDEM is an interactive variable equal to one if the presidential election took place during the transitional period and zero otherwise. The marginal impact of the recent democratization period on fiscal performance is captured by  $\hat{\beta}_4$ . The marginal effect of an election during the democratic transition phase is captured by  $\hat{\beta}_5$ .

In the next section of the paper, we present the results of the test carried out to verify whether fiscal spending and deficits increase during elections in recent democracies. We do so by examining if  $\hat{\beta}_3 + \hat{\beta}_5$  (the total marginal

56. Arellano and Bond (1991); Blundell and Bond (1998). The exercise and commands for GMM estimation are based on Roodman (2006) and were carried out using Stata 10.1. We also carried out GMM estimates controlling for year fixed effects. The results coincided with the GMM results without controls for year fixed effects.

57. Roodman (2006).

58. Windmeijer (2005). We also tested an error correction model (ECM), which is also appropriate for highly persistent series, with panel corrected standard errors based on the first difference of the dependent variables; our findings did not change.



effect of an election in a recent democracy) is significantly different from zero.<sup>59</sup> We also further test the robustness of political budget cycles to alternative definitions of transitional democracy. Our intention here is to focus on whether the observational criteria of democratic transitions produce results that are different from measures that rely on subjective operational rules.

## Results

This section summarizes the findings from tests on political budget cycles in Latin American democracies in the nearly four decades between 1973 and 2008.<sup>60</sup> Regardless of whether Polity IV or a minimalist criterion is adopted for democracy, the results suggest that there are political budget cycles in Latin American democracies. In this respect, our tests confirm Brender and Drazen's findings.<sup>61</sup> However, our results show that arguments that these cycles are driven by recently democratized countries are less robust. Specifically, we find that evidence of political budget cycles in recent democracies is dependent on the definition of a transitional democracy. As we report below, the results produced when models are estimated based on Polity IV definitions of democracy and new democracies are not confirmed when we use the minimalist criterion of two turnovers of political power to define the transition period.

Tables 3 and 4 examine whether there are troughs in revenue collection or peaks in government spending and the fiscal deficit in the year of a presidential election in Latin America. As observed earlier, all of the dependent variables are measured as a share of GDP. For presentation purposes, only the estimate of the coefficient for the dummy variable for the election is presented.<sup>62</sup> The base group is all other democratic years. Table 3 presents the results of the five specifications in which the election year was only coded as valid if the country was judged a democracy based on Polity IV. Table 4 presents the results of the same test based on the minimalist definition of democracy.

The results in both tables suggest that there are important increases in fiscal deficits (panel C) in Latin America. The fiscal balance can be either negative or positive; a negative coefficient indicates a worsening of the government's

59. Braumoeller (2004); Brambor, Clark, and Golder (2006).

60. We also carried out the same tests using the original Brender and Drazen (2005c) data set for the period between 1973 and 2000. The results of that exercise not only confirmed the findings reported here, but generally were stronger in terms of statistical significance.

61. Brender and Drazen (2005c).

62. The complete results are available on request.

**TABLE 3. The Effect of Elections on Political Budget Cycles in Latin America, 1973–2008: Polity IV Definition<sup>a</sup>**

<i>Dependent and explanatory variable</i>	<i>Pooled OLS</i> (1)	<i>Pooled OLS with country fixed effects</i> (2)	<i>Pooled OLS with country and year fixed effects</i> (3)	<i>GMM one-step first difference</i> (4)	<i>GMM one-step system</i> (5)
<b>A. Government spending/GDP</b>					
Election year (ELEC <sub><i>t</i></sub> )	0.029 (0.280)	0.132 (0.263)	0.054 (0.272)	0.133 (0.299)	0.098 (0.310)
<i>Summary statistic</i>					
No. observations	421	421	421	410	421
Avg. time series length	23.39	23.39	23.39	22.17	22.78
R squared	0.834	0.855	0.871		
No. instruments				9	17
Arellano-Bond test for AR(2) ( <i>p</i> value) <sup>b</sup>				0.302	0.253
Hansen test for joint validity of instruments ( <i>p</i> value)				0.302	0.172
Diff. Sargan tests for all system instruments ( <i>p</i> value)					0.154
<b>B. Government revenue/GDP</b>					
Election year (ELEC <sub><i>t</i></sub> )	-0.412 (0.296)	-0.447 (0.272)	-0.544* (0.280)	-0.511 (0.355)	-0.399 (0.343)
<i>Summary statistic</i>					
No. observations	412	412	412	400	412
Avg. time series length	22.89	22.89	22.89	22.22	22.89
R squared	0.836	0.862	0.880		
No. instruments				9	17
Arellano-Bond test for AR(2) ( <i>p</i> value) <sup>b</sup>				0.679	0.627
Hansen test for joint validity of instruments ( <i>p</i> value)				0.732	0.339
Diff. Sargan tests for all system instruments ( <i>p</i> value)					0.257
<b>C. Fiscal balance/GDP</b>					
Election year (ELEC <sub><i>t</i></sub> )	-0.633** (0.309)	-0.740** (0.296)	-0.704** (0.291)	-0.776* (0.376)	-0.769* (0.422)
<i>Summary statistic</i>					
No. observations	412	412	412	400	412
Avg. time series length	22.89	22.89	22.89	22.22	22.89
R squared	0.411	0.462	0.548		
No. instruments				9	17
Arellano-Bond test for AR(2) ( <i>p</i> value) <sup>b</sup>				0.853	0.805
Hansen test for joint validity of instruments ( <i>p</i> value)				0.290	0.424
Diff. Sargan tests for all system instruments ( <i>p</i> value)					0.439

\*Statistically significant at the 10 percent level.

\*\*Statistically significant at the 5 percent level.

a. The covariates include lags of the dependent variable, the log of per capita GDP, the ratio of international trade (sum of merchandise exports and imports) to GDP, the fraction of the population over age sixty-five, the fraction of the population between ages fifteen and sixty-four, and the log-difference between real GDP and its (country-specific) trend, estimated using a Hodrick-Prescott filter. Pooled OLS regressions were estimated with panel corrected standard errors that correct for groupwise heteroskedasticity and contemporaneous correlations of the errors. Where noted, country and year dummy variables were included in the regressions, but they are not reported above for reasons of space. The two GMM specifications estimate the Arellano-Bond (difference) and Blundell-Bond (system) procedures with orthogonal deviations to adjust for an unbalanced panel; they are collapsed to minimize the number of instruments following the recommendations of Roodman (2006). Per capita GDP and growth were also included as endogenous variables in the GMM estimations. Standard errors are in parentheses. For the GMM estimates, standard errors are reported as *t* statistics based on Windmeijer (2005) finite sample correction and are corrected for serial correlation and heteroskedasticity.

b. The Arellano-Bond tests for first-order and second-order serial correlation are on the first-differenced residuals. The *p* values are the probability of rejecting the null hypothesis of no autocorrelation.

**TABLE 4. The Effect of Elections on Political Budget Cycles in Latin America, 1973–2008: Minimalist Criterion<sup>a</sup>**

<i>Dependent and explanatory variable</i>	<i>Pooled OLS</i> (1)	<i>Pooled OLS with country fixed effects</i> (2)	<i>Pooled OLS with country and year fixed effects</i> (3)	<i>GMM one-step first difference</i> (4)	<i>GMM one-step system</i> (5)
<i>A. Government spending/GDP</i>					
Election year (ELEC <sub>t</sub> )	−0.020 (0.291)	0.079 (0.271)	−0.004 (0.289)	0.047 (0.277)	0.021 (0.319)
<i>Summary statistic</i>					
No. observations	409	409	409	395	409
Avg. time series length	22.72	22.72	22.72	21.94	22.72
R squared	0.831	0.854	0.870		
No. instruments				9	17
Arellano-Bond test for AR(2) ( <i>p</i> value) <sup>b</sup>				0.307	0.262
Hansen test for joint validity of instruments ( <i>p</i> value)				0.355	0.237
Diff. Sargan tests for all system instruments ( <i>p</i> value)					0.207
<i>B. Government revenue/GDP</i>					
Election year (ELEC <sub>t</sub> )	−0.461 (0.305)	−0.451 (0.279)	−0.688** (0.296)	−0.519 (0.358)	−0.467 (0.346)
<i>Summary statistic</i>					
No. observations	400	400	400	385	400
Avg. time series length	22.22	22.22	22.22	21.39	22.22
R squared	0.835	0.864	0.881		
No. instruments				9	17
Arellano-Bond test for AR(2) ( <i>p</i> value) <sup>b</sup>				0.835	0.864
Hansen test for joint validity of instruments ( <i>p</i> value)				0.835	0.864
Diff. Sargan tests for all system instruments ( <i>p</i> value)					0.230
<i>C. Fiscal Balance/GDP</i>					
Election year (ELEC <sub>t</sub> )	−0.598* (0.323)	−0.669** (0.305)	−0.709** (0.315)	−0.732* (0.370)	−0.697 (0.404)
<i>Summary statistic</i>					
No. observations	400	400	400	385	400
Avg. time series length	22.22	22.22	22.22	21.39	22.22
R squared	0.372	0.445	0.517		
No. instruments				9	14
Arellano-Bond test for AR(2) ( <i>p</i> value) <sup>b</sup>				0.971	0.833
Hansen test for joint validity of instruments ( <i>p</i> value)				0.310	0.109
Diff. Sargan tests for all system instruments ( <i>p</i> value)					0.104

\*Statistically significant at the 10 percent level.

\*\*Statistically significant at the 5 percent level.

a. The covariates include lags of the dependent variable, the log of per capita GDP, the ratio of international trade (sum of merchandise exports and imports) to GDP, the fraction of the population over age sixty-five, the fraction of the population between ages fifteen and sixty-four, and the log-difference between real GDP and its (country-specific) trend, estimated using a Hodrick-Prescott filter. Pooled OLS regressions were estimated with panel corrected standard errors that correct for groupwise heteroskedasticity and contemporaneous correlations of the errors. Where noted, country and year dummy variables were included in the regressions, but they are not reported above for reasons of space. The two GMM specifications estimate the Arellano-Bond (difference) and Blundell-Bond (system) procedures with orthogonal deviations to adjust for an unbalanced panel; they are collapsed to minimize the number of instruments following the recommendations of Roodman (2006). Per capita GDP and growth were also included as endogenous variables in the GMM estimations. Standard errors are in parentheses. For the GMM estimates, standard errors are reported as *t* statistics based on Windmeijer (2005) finite sample correction and are corrected for serial correlation and heteroskedasticity.

b. The Arellano-Bond tests for first-order and second-order serial correlation are on the first-differenced residuals. The *p* values are the probability of rejecting the null hypothesis of no autocorrelation.

fiscal balance. Relative to nonelection years, both models predict an increase in the budget deficit in an election year in Latin America between six- and eight-tenths of one percent of GDP. Independently of the criteria used to define a democratic election in the sample, the findings of a marked political budget cycle are robust across almost all specifications, and the coefficients are consistently the same sign and general value.

The exact levers that are driving the propensity of governments to incur higher fiscal deficits, however, are not confirmed in either table. We cannot reject the hypothesis that the increase in election-year government spending relative to GDP (panel A) is statistically equal to zero. Both tables provide some suggestive evidence that tax policy, rather than expenditures as commonly assumed, may be the driving force for political budget cycles in Latin America (panel B). The coefficient measuring the impact of an election on tax revenue collection is negative and statistically significant at the ten percent level or lower after controlling for country and year fixed effects (column 3) in both tables. As tables A1 and A2 in the appendix confirm, this pattern is even more robust when the rule of the semester is employed to test for political budget cycles in recent Latin American democracies.

Following the recent literature on political budget cycles in developing democracies, we also tested whether the results on fiscal policy are influenced by whether an incumbent is eligible for reelection.<sup>63</sup> As we cited earlier, reelection is not allowed in most countries in Latin America, and those that do permit incumbents to run for office only began doing so in recent years. When the regressions reported in tables 3 and 4 are estimated with an interactive term for elections in which incumbents could be reelected, the marginal effect of these elections is not statistically significant in any specification using either Polity IV or the minimalist definition of democracy.<sup>64</sup>

Given that a significant share of Latin American countries experienced a transition to democracy in the late 1970s and early 1980s, the results reported in tables 3 and 4 could be driven by the failure to account for the effects of electoral competition following authoritarian rule, a period in which voters had not had enough experience with elections, as argued by Brender and Drazen.<sup>65</sup> Tables 5 and 6 present the results after we include appropriate multiplicative

63. Brender and Drazen (2005a); Drazen and Eslava (2006); Arvate, Avelino, and Tavares (2009).

64. The results are available on request.

65. Brender and Drazen (2005c).

**TABLE 5. The Effect of Elections and New Democracies on Political Budget Cycles in Latin America, 1973–2008: Polity IV<sup>a</sup>**

<i>Dependent and explanatory variable</i>	<i>Pooled OLS (1)</i>	<i>Pooled OLS with country fixed effects (2)</i>	<i>Pooled OLS with country and year fixed effects (3)</i>	<i>GMM one-step first difference (4)</i>	<i>GMM one-step system (5)</i>
<i>A. Government spending/GDP</i>					
Election year (ELEC <sub><i>t</i></sub> )	−0.238 (0.404)	0.0124 (0.385)	−0.0877 (0.425)	0.213 (0.496)	−0.106 (0.437)
New democracy (RECENTDEM <sub><i>t</i></sub> )	−0.274 (0.280)	−0.205 (0.454)	−0.237 (0.421)	0.254 (0.492)	−0.425 (0.564)
RECENTDEM <sub><i>t</i></sub> * ELEC <sub><i>t</i></sub>	0.432 (0.557)	0.197 (0.526)	0.223 (0.564)	−0.134 (0.564)	0.297 (0.508)
<i>Summary statistic</i>					
No. observations	421	421	421	410	421
Avg. time series length	23.39	23.39	23.39	22.78	23.39
R squared	0.835	0.855	0.871		
No. instruments				11	19
Arellano–Bond test for AR(2) ( <i>p</i> value) <sup>b</sup>				0.300	0.258
Hansen test for joint validity of instruments ( <i>p</i> value)				0.309	0.195
Diff. Sargan tests for all system instruments ( <i>p</i> value)					0.176
Total RECENTDEM <sub><i>t</i></sub> * ELEC <sub><i>t</i></sub> ( $\beta_3 + \beta_5$ )	0.193 (0.382)	0.209 (0.357)	0.134 (0.359)	0.079 (0.333)	−0.191 (0.395)
<i>B. Government Revenue/GDP</i>					
Election year (ELEC <sub><i>t</i></sub> )	−0.403 (0.465)	−0.383 (0.437)	−0.693 (0.455)	−0.489 (0.389)	−0.484 (0.326)
New democracy (RECENTDEM <sub><i>t</i></sub> )	−0.321 (0.308)	−0.909** (0.429)	−0.787* (0.408)	−0.618 (0.444)	−0.273 (1.009)
RECENTDEM <sub><i>t</i></sub> * ELEC <sub><i>t</i></sub>	−0.0489 (0.605)	−0.144 (0.560)	0.222 (0.594)	−0.0539 (0.661)	0.120 (0.637)
<i>Summary statistic</i>					
No. observations	412	412	412	400	412
Avg. time series length	22.89	22.89	22.89	22.22	22.89
R squared	0.836	0.864	0.881		
No. instruments				11	19
Arellano–Bond test for AR(2) ( <i>p</i> value) <sup>b</sup>				0.701	0.654
Hansen test for joint validity of instruments ( <i>p</i> value)				0.733	0.269
Diff. Sargan tests for all system instruments ( <i>p</i> value)					0.198
Total RECENTDEM <sub><i>t</i></sub> * ELEC <sub><i>t</i></sub> ( $\beta_3 + \beta_5$ )	−0.452 (0.386)	−0.527 (0.347)	−0.471 (0.363)	−0.542 (0.541)	−0.364 (0.525)

(continued)

**TABLE 5. The Effect of Elections and New Democracies on Political Budget Cycles in Latin America, 1973–2008: Polity IV<sup>a</sup> (Continued)**

<i>Dependent and explanatory variable</i>	<i>Pooled OLS</i> (1)	<i>Pooled OLS with country fixed effects</i> (2)	<i>Pooled OLS with country and year fixed effects</i> (3)	<i>GMM one-step first difference</i> (4)	<i>GMM one-step system</i> (5)
<i>C. Fiscal Balance/GDP</i>					
Election year (ELEC <sub><i>t</i></sub> )	-0.453 (0.477)	-0.494 (0.461)	-0.572 (0.468)	-0.665 (0.459)	-0.663 (0.501)
New democracy (RECENTDEM <sub><i>t</i></sub> )	-0.543* (0.320)	-0.771* (0.441)	-0.776* (0.396)	-0.281 (0.697)	-0.930* (0.453)
RECENTDEM <sub><i>t</i></sub> * ELEC <sub><i>t</i></sub>	-0.385 (0.626)	-0.453 (0.603)	-0.235 (0.627)	-0.198 (0.502)	-0.241 (0.529)
<i>Summary statistic</i>					
No. observations	412	412	412	400	412
Avg. time series length	22.89	22.89	22.89	22.22	22.89
R squared	0.419	0.467	0.552		
No. instruments				11	19
Arellano-Bond test for AR(2) ( <i>p</i> value) <sup>b</sup>				0.848	0.812
Hansen test for joint validity of instruments ( <i>p</i> value)				0.291	0.498
Diff. Sargan tests for all system instruments ( <i>p</i> value)					0.522
Total RECENTDEM <sub><i>t</i></sub> * ELEC <sub><i>t</i></sub> ( $\beta_3 + \beta_5$ )	-0.837** (0.404)	-0.947** (0.387)	-0.807** (0.388)	-0.862* (0.442)	-0.904* (0.479)

\*Statistically significant at the 10 percent level.

\*\*Statistically significant at the 5 percent level.

a. The Polity IV definition of a new democracy encompasses the first four consecutive elections. The covariates include lags of the dependent variable, the log of per capita GDP, the ratio of international trade (sum of merchandise exports and imports) to GDP, the fraction of the population over age sixty-five, the fraction of the population between ages fifteen and sixty-four, and the log-difference between real GDP and its (country-specific) trend, estimated using a Hodrick-Prescott filter. Pooled OLS regressions were estimated with panel corrected standard errors that correct for groupwise heteroskedasticity and contemporaneous correlations of the errors. Where noted, country and year dummy variables were included in the regressions, but they are not reported above for reasons of space. The two GMM specifications estimate the Arellano-Bond (difference) and Blundell-Bond (system) procedures with orthogonal deviations to adjust for an unbalanced panel; they are collapsed to minimize the number of instruments following the recommendations of Roodman (2006). Per capita GDP and growth were also included as endogenous variables in the GMM estimations. Standard errors are in parentheses. For the GMM estimates, standard errors are reported as *t* statistics based on Windmeijer (2005) finite sample correction and are corrected for serial correlation and heteroskedasticity.

b. The Arellano-Bond tests for first-order and second-order serial correlation are on the first-differenced residuals. The *p* values are the probability of rejecting the null hypothesis of no autocorrelation.

interaction terms to test whether the effect of an election year in a recent democracy is statistically significant. Table 5 tests the hypothesis that political budget cycles are more prevalent in elections in new democracies. Table 6 reports the results based on a theoretically grounded definition of the democratic transition period, in which only elections that took place before and including the year in which the two-turnover criterion was satisfied are

**TABLE 6 . The Effect of Elections and Transitional Democracy on Political Budget Cycles in Latin America, 1973–2008: Minimalist Criterion<sup>a</sup>**

<i>Dependent and explanatory variable</i>	<i>Pooled OLS (1)</i>	<i>Pooled OLS with country fixed effects (2)</i>	<i>Pooled OLS with country and year fixed effects (3)</i>	<i>GMM one-step first difference (4)</i>	<i>GMM one-step system (5)</i>
<i>A. Government spending/GDP</i>					
Election year (ELEC <sub>t</sub> )	0.086 (0.385)	0.170 (0.361)	−0.001 (0.367)	−0.320 (0.713)	0.110 (0.473)
New democracy (RECENTDEM <sub>t</sub> )	−0.120 (0.274)	0.327 (0.392)	0.565 (0.388)	0.113 (0.748)	−0.257 (1.021)
RECENTDEM <sub>t</sub> * ELEC <sub>t</sub>	−0.226 (0.584)	−0.218 (0.543)	−0.0640 (0.538)	0.793 (1.375)	−0.191 (0.473)
<i>Summary statistic</i>					
No. observations	409	409	409	395	409
Avg. time series length	22.72	22.72	22.72	21.94	22.72
R squared	0.831	0.855	0.870		
No. instruments				11	19
Arellano–Bond test for AR(2) ( <i>p</i> value) <sup>b</sup>				0.313	0.251
Hansen test for joint validity of instruments ( <i>p</i> value)				0.335	0.280
Diff. Sargan tests for all system instruments ( <i>p</i> value)					0.257
Total RECENTDEM <sub>t</sub> * ELEC <sub>t</sub> ( $\beta_3 + \beta_5$ )	−0.139 (0.440)	−0.049 (0.408)	−0.065 (0.426)	0.472 (0.791)	−0.082 (0.306)
<i>B. Government Revenue/GDP</i>					
Election year (ELEC <sub>t</sub> )	−0.229 (0.410)	−0.338 (0.387)	−0.602 (0.377)	−0.327 (0.340)	−0.334 (0.284)
New democracy (RECENTDEM <sub>t</sub> )	0.0141 (0.293)	0.302 (0.381)	0.141 (0.385)	0.607 (0.450)	−0.0628 (1.098)
RECENTDEM <sub>t</sub> * ELEC <sub>t</sub>	−0.505 (0.612)	−0.266 (0.557)	−0.205 (0.550)	−0.442 (0.658)	−0.289 (0.729)
<i>Summary statistic</i>					
No. observations	400	400	400	385	400
Avg. time series length	22.22	22.22	22.22	21.39	22.22
R squared	0.835	0.864	0.881		
No. instruments				11	19
Arellano–Bond test for AR(2) ( <i>p</i> value) <sup>b</sup>				0.686	0.650
Hansen test for joint validity of instruments ( <i>p</i> value)				0.764	0.404
Diff. Sargan tests for all system instruments ( <i>p</i> value)					0.308
Total RECENTDEM <sub>t</sub> * ELEC <sub>t</sub> ( $\beta_3 + \beta_5$ )	−0.733 (0.455)	−0.603 (0.402)	−0.806* (0.435)	−0.768 (0.611)	−0.623 (0.678)

(continued)

**TABLE 6. The Effect of Elections and Transitional Democracy on Political Budget Cycles in Latin America, 1973–2008: Minimalist Criterion<sup>a</sup> (Continued)**

<i>Dependent and explanatory variable</i>	<i>Pooled OLS</i> (1)	<i>Pooled OLS with country fixed effects</i> (2)	<i>Pooled OLS with country and year fixed effects</i> (3)	<i>GMM one-step first difference</i> (4)	<i>GMM one-step system</i> (5)
<i>C. Fiscal Balance/GDP</i>					
Election year (ELEC <sub><i>t</i></sub> )	−0.549 (0.434)	−0.669 (0.417)	−0.709* (0.397)	−0.0155 (0.745)	−0.704* (0.380)
New democracy (RECENTDEM <sub><i>t</i></sub> )	−0.194 (0.299)	−0.163 (0.401)	−0.796* (0.410)	0.699 (1.019)	−0.244 (0.438)
RECENTDEM <sub><i>t</i></sub> * ELEC <sub><i>t</i></sub>	−0.111 (0.646)	0.0134 (0.611)	0.0880 (0.594)	−1.593 (1.901)	0.0194 (0.659)
<i>Summary statistic</i>					
No. observations	400	400	400	385	400
Avg. time series length	22.22	22.22	22.22	21.39	22.22
<i>R</i> squared	0.373	0.445	0.521		
No. instruments				11	19
Arellano-Bond test for AR(2) ( <i>p</i> value) <sup>b</sup>				0.968	0.868
Hansen test for joint validity of instruments ( <i>p</i> value)				0.308	0.209
Diff. Sargan tests for all system instruments ( <i>p</i> value)					0.206
Total RECENTDEM <sub><i>t</i></sub> * ELEC <sub><i>t</i></sub> ( $\beta_3 + \beta_5$ )	−0.660 (0.480)	−0.655 (0.449)	−0.621 (0.472)	−1.609 (1.282)	−0.685 (0.652)

\*Statistically significant at the 10 percent level.

\*\*Statistically significant at the 5 percent level.

a. The minimalist criterion for a new democracy is the founding election, with the democratic transition phase lasting through two election turnovers. The covariates include lags of the dependent variable, the log of per capita GDP, the ratio of international trade (sum of merchandise exports and imports) to GDP, the fraction of the population over age sixty-five, the fraction of the population between ages fifteen and sixty-four, and the log-difference between real GDP and its (country-specific) trend, estimated using a Hodrick-Prescott filter. Pooled OLS regressions were estimated with panel corrected standard errors that correct for groupwise heteroskedasticity and contemporaneous correlations of the errors. Where noted, country and year dummy variables were included in the regressions, but they are not reported above for reasons of space. The two GMM specifications estimate the Arellano-Bond (difference) and Blundell-Bond (system) procedures with orthogonal deviations to adjust for an unbalanced panel; they are collapsed to minimize the number of instruments following the recommendations of Roodman (2006). Per capita GDP and growth were also included as endogenous variables in the GMM estimations. Standard errors are in parentheses. For the GMM estimates, standard errors are reported as *t* statistics based on Windmeijer (2005) finite sample correction and are corrected for serial correlation and heteroskedasticity.

b. The Arellano-Bond tests for first-order and second-order serial correlation are on the first-differenced residuals. The *p* values are the probability of rejecting the null hypothesis of no autocorrelation.

coded as transitional election years. In both tables, the estimated total effect of an election year on fiscal policy for recent democracies and its standard variation are presented in the last two rows of each panel.

Table 5 confirms the patterns reported by Brender and Drazen for new democracies.<sup>66</sup> Recent Latin American democracies increase fiscal deficits by

66. Brender and Drazen (2005c).



between eight-tenths of one percent and one percent in the election year. In table 6, the total effect of an election year in a transitional democracy is again predicted to worsen government fiscal balances. However, the coefficient of the combined effect of an election year in a transitional democracy is no longer statistically significant. Thus, once objective criteria of democratic transitions are employed, the magnitude of the coefficient of the total effect of an election for a transitional democracy is not robust.

The results obtained in tables 3 and 4 suggested that government decreases in tax revenue collection in the election year drive political budget cycles in Latin America. Table 6 provides limited evidence that this pattern is caused by Latin American governments seeking to win the votes of taxpayers during elections in transitional democracies. After controlling for country and year fixed effects, governments in transitional democracies are predicted to reduce revenue collection efforts by eight-tenths of one percent of GDP in the election year (panel B, column 3).

To verify our results, we estimated the same models employing the rule of the semester. Under this alternative rule, the evidence of political budget cycles is weaker when Polity IV criteria are used (table A3 in the appendix) and non-existent when minimalist criteria for democracy and transitional democracy are employed (table A4). Our results also suggest that governments seek to reduce political uncertainty and instability by signaling fiscal responsibility in the transitional democratic period. Under the rule of the semester, presidential administrations are predicted to decrease government spending by eight-tenths of one percent in the election year (table A4, panel a).

As table 7 shows, the secular decline in fiscal deficits appears to be only weakly linked to the democratic transition process. There are ten Latin American democracies for which we can compare data on fiscal deficits during elections in the democratic transition and post-transition periods. Democratic regimes in the transitional phase incurred higher deficits in only five countries. Thus, though we expect to find greater levels of opportunistic spending during competitions when there is greater political uncertainty and instability, not all transitional democracies in Latin America followed this pattern.

## Conclusion

There is a need for greater understanding of the differences and commonalities between Latin America and other democracies in either developing or more advanced regions. This paper has sought to undertake a theoretically

**TABLE 7. Average Fiscal Deficits in Election Years in Transitional and Established Democracies, 1973–2008**

Country	<i>Minimalist criterion democracies</i>	
	<i>Transitional democracy</i>	<i>Established democracy</i>
Argentina	–2.98	0.12
Bolivia	–3.08	–5.27
Brazil	–5.51	1.14
Chile	1.84	...
Colombia <sup>a</sup>	...	...
Costa Rica <sup>a</sup>	...	...
Dominican Republic	–1.13	0.74
Ecuador	–0.04	0.75
El Salvador	–1.61	–1.80
Guatemala	–0.70	–2.42
Honduras	–6.33	–3.53
Mexico	–1.25	...
Nicaragua	–6.94	...
Panama	–0.34	–5.23
Paraguay	0.49	NA
Peru	–0.72	NA
Uruguay	–2.60	–3.13
Venezuela <sup>a</sup>	...	...

... Not applicable.

a. No democratic transition elections.

grounded exploration of political cycles in fiscal policy performance for Latin America during the most profound and widespread period of democratization. We have addressed several gaps in past empirical research by considering what happens to performance measures prior to and immediately after elections and when these competitions occur during the transition period prior to the stabilization of democratic institutions.

Based on a battery of specifications, this paper provides compelling evidence confirming that multiparty competitive elections do catalyze fiscal policy in Latin America. The patterns we find, however, differ from what we would expect based on theoretical models, such as Rogoff's political budget model, and empirical research on recent democracies.<sup>67</sup> This underscores the need for further research on how political budget cycles are affected by the transitional stages of democratic rule.

In particular, we find that prior evidence suggesting that recent Latin American democracies are more likely to engage in opportunistic spending

67. Rogoff (1990).

during elections is highly dependent on the criteria used to measure democracy and the evolution of its institutional character. Our findings partially confirm the results presented by Brender and Drazen, who argue that recent democracies are more prone to political budget cycles.<sup>68</sup> In the period following authoritarian rule and prior to the stabilization of the regime, new Latin American democracies are more apt to engage in fiscal indiscretion in an election year than in a nonelection year. These findings are not robust, however, when different criteria for democracy and transitional democracy are employed.

Furthermore, we show that the evidence of political budget cycles in Latin America is highly dependent not only on the definitions used for democracy and recent democracy but also on the rule used to code the election year. The use of the semester rule did not change the predicted direction of our results for fiscal behavior in elections, but it did entail a loss of statistical significance for most coefficients. This loss of significance is particularly surprising as most studies on political budget cycles in emerging democracies devote only limited discussion to how findings are affected by the adoption of either the year or rule of the semester. The semester and year rules are different ways to specify the peculiarity of the electoral year, which is defined as the twelve-month period prior to elections. The year rule coding captures the preceding twelve-month period more precisely in samples where more elections are held toward the end of the year. Conversely, when elections are held toward the beginning of the year, the semester rule better captures the electoral year.

Of the 108 presidential elections in our data set, 57 were held during the first semester according to the minimalist definition of democracy. Thirty of these elections were held in either May or June, the last two months of the first half of the year, which can be considered a twilight zone for coding. On the other hand, only 4 elections were held in either July or August, the first two months of the second half, which could also be considered a twilight zone. As elections dates concentrate toward the end of both halves, one possible explanation for the loss of significance of the coefficient measuring opportunistic fiscal behavior is that the year rule is doing a better job in capturing the effects of the twelve-month period before elections.

Our study also sheds new light on the levers that Latin American governments use during elections, revealing a pattern that is contrary to theoretical

68. Brender and Drazen (2005c, 2007).

predictions. While we find that fiscal deficits worsen in the election year, government spending does not increase. Rather, political budget cycles appear to be linked to reductions in government efforts to collect taxes. One potential explanation for this pattern may be that governments are eager to appease those interests that are most threatening to their destabilization—namely, the upper classes and military elites. If this argument is true, our results further suggest that these fears of a reversion to military rule are not unique to the politically uncertain period of democratic transition.

**Appendix: Supplemental Tables**

**T A B L E A 1 . The Effect of Elections on Political Budget Cycles in Latin America, 1973–2008: Polity IV and the Semester Rule<sup>a</sup>**

<i>Dependent and explanatory variable</i>	<i>Pooled OLS</i> (1)	<i>Pooled OLS with country fixed effects</i> (2)	<i>Pooled OLS with country and year fixed effects</i> (3)	<i>GMM one-step first difference</i> (4)	<i>GMM one-step system</i> (5)
<i>A. Government spending/GDP</i>					
Election year (ELEC <sub>t</sub> ), with semester rule	−0.282 (0.282)	−0.137 (0.266)	−0.428 (0.271)	−0.425 (0.332)	−0.338 (0.310)
<i>Summary statistic</i>					
No. observations	421	421	421	410	421
Avg. time series length	23.39	23.39	23.39	22.78	23.39
R squared	0.835	0.855	0.872		
No. instruments				9	17
Arellano-Bond test for AR(2) ( <i>p</i> value) <sup>b</sup>				0.273	0.235
Hansen test for joint validity of instruments ( <i>p</i> value)				0.305	0.159
Diff. Sargan tests for all system instruments ( <i>p</i> value)					0.141
<i>B. Government Revenue/GDP</i>					
Election year (ELEC <sub>t</sub> ), with semester rule	−0.429 (0.296)	−0.385 (0.272)	−0.495* (0.279)	−0.400** (0.171)	−0.416* (0.221)
<i>Summary statistic</i>					
No. observations	412	412	412	400	412
Avg. time series length	22.89	22.89	22.89	22.22	22.89
R squared	0.836	0.862	0.880		
No. instruments				9	17
Arellano-Bond test for AR(2) ( <i>p</i> value) <sup>b</sup>				0.608	0.566
Hansen test for joint validity of instruments ( <i>p</i> value)				0.719	0.387
Diff. Sargan tests for all system instruments ( <i>p</i> value)					0.300

**TABLE A 1 . The Effect of Elections on Political Budget Cycles in Latin America, 1973–2008: Polity IV and the Semester Rule<sup>a</sup> (Continued)**

<i>Dependent and explanatory variable</i>	<i>Pooled OLS (1)</i>	<i>Pooled OLS with country fixed effects (2)</i>	<i>Pooled OLS with country and year fixed effects (3)</i>	<i>GMM one-step first difference (4)</i>	<i>GMM one-step system (5)</i>
<i>C. Fiscal Balance/GDP</i>					
Election year (ELEC <sub><i>t</i></sub> ), with semester rule	−0.401 (0.310)	−0.471 (0.297)	−0.230 (0.297)	−0.395 (0.323)	−0.449 (0.262)
<i>Summary statistic</i>					
No. observations	412	412	412	400	412
Avg. time series length	22.89	22.89	22.89	22.22	22.89
R squared	0.408	0.457	0.543		
No. instruments				9	17
Arellano–Bond test for AR(2) ( <i>p</i> value) <sup>b</sup>				0.770	0.719
Hansen test for joint validity of instruments ( <i>p</i> value)				0.288	0.415
Diff. Sargan tests for all system instruments ( <i>p</i> value)					0.431

\*Statistically significant at the 10 percent level.

\*\*Statistically significant at the 5 percent level.

a. The covariates include lags of the dependent variable, the log of per capita GDP, the ratio of international trade (sum of merchandise exports and imports) to GDP, the fraction of the population over age sixty-five, the fraction of the population between ages fifteen and sixty-four, and the log-difference between real GDP and its (country-specific) trend, estimated using a Hodrick–Prescott filter. Pooled OLS regressions were estimated with panel corrected standard errors that correct for groupwise heteroskedasticity and contemporaneous correlations of the errors. Where noted, country and year dummy variables were included in the regressions, but they are not reported above for reasons of space. The two GMM specifications estimate the Arellano–Bond (difference) and Blundell–Bond (system) procedures with orthogonal deviations to adjust for an unbalanced panel; they are collapsed to minimize the number of instruments following the recommendations of Roodman (2006). Per capita GDP and growth were also included as endogenous variables in the GMM estimations. Standard errors are in parentheses. For the GMM estimates, standard errors are reported as *t* statistics based on Windmeijer (2005) finite sample correction and are corrected for serial correlation and heteroskedasticity.

b. The Arellano–Bond tests for first-order and second-order serial correlation are on the first-differenced residuals. The *p* values are the probability of rejecting the null hypothesis of no autocorrelation.

**TABLE A 2 . The Effect of Elections on Political Budget Cycles in Latin America, 1973–2008: Minimalist Criterion and the Semester Rule<sup>a</sup>**

<i>Dependent and explanatory variable</i>	<i>Pooled OLS (1)</i>	<i>Pooled OLS with country fixed effects (2)</i>	<i>Pooled OLS with country and year fixed effects (3)</i>	<i>GMM one-step first difference (4)</i>	<i>GMM one-step system (5)</i>
<i>A. Government spending/GDP</i>					
Election year (ELEC <sub><i>t</i></sub> ), with semester rule	−0.401 (0.300)	−0.270 (0.281)	−0.551* (0.290)	−0.484 (0.334)	−0.381 (0.322)
<i>Summary statistic</i>					
No. observations	409	409	409	395	409
Avg. time series length	22.72	22.72	22.72	21.94	22.72
R squared	0.831	0.855	0.871		
No. instruments				9	17

(continued)

**TABLE A 2. The Effect of Elections on Political Budget Cycles in Latin America, 1973–2008: Minimalist Criterion and the Semester Rule<sup>a</sup> (Continued)**

<i>Dependent and explanatory variable</i>	<i>Pooled OLS</i> (1)	<i>Pooled OLS with country fixed effects</i> (2)	<i>Pooled OLS with country and year fixed effects</i> (3)	<i>GMM one-step first difference</i> (4)	<i>GMM one-step system</i> (5)
Arellano-Bond test for AR(2) ( $p$ value) <sup>b</sup>				0.275	0.241
Hansen test for joint validity of instruments ( $p$ value)				0.360	0.222
Diff. Sargan tests for all system instruments ( $p$ value)					0.193
<i>B. Government Revenue/GDP</i>					
Election year (ELEC <sub><i>t</i></sub> ), with semester rule	-0.329 (0.317)	-0.339 (0.290)	-0.544* (0.300)	-0.444** (0.205)	-0.415* (0.217)
<i>Summary statistic</i>					
No. observations	400	400	400	385	400
Avg. time series length	22.22	22.22	22.22	21.39	22.22
<i>R</i> squared	0.835	0.864	0.881		
No. instruments				9	17
Arellano-Bond test for AR(2) ( $p$ value) <sup>b</sup>				0.596	0.562
Hansen test for joint validity of instruments ( $p$ value)				0.798	0.348
Diff. Sargan tests for all system instruments ( $p$ value)					0.261
<i>C. Fiscal Balance/GDP</i>					
Election year (ELEC <sub><i>t</i></sub> ), with semester rule	-0.298 (0.332)	-0.368 (0.314)	-0.216 (0.324)	-0.459 (0.348)	-0.474 (0.276)
<i>Summary statistic</i>					
No. observations	400	400	400	385	400
Avg. time series length	22.22	22.22	22.22	21.39	22.22
<i>R</i> squared	0.368	0.440	0.512		
No. instruments				9	17
Arellano-Bond test for AR(2) ( $p$ value) <sup>b</sup>				0.883	0.774
Hansen test for joint validity of instruments ( $p$ value)				0.303	0.104
Diff. Sargan tests for all system instruments ( $p$ value)					0.101

\*Statistically significant at the 10 percent level.

\*\*Statistically significant at the 5 percent level.

a. The covariates include lags of the dependent variable, the log of per capita GDP, the ratio of international trade (sum of merchandise exports and imports) to GDP, the fraction of the population over age sixty-five, the fraction of the population between ages fifteen and sixty-four, and the log-difference between real GDP and its (country-specific) trend, estimated using a Hodrick-Prescott filter. Pooled OLS regressions were estimated with panel corrected standard errors that correct for groupwise heteroskedasticity and contemporaneous correlations of the errors. Where noted, country and year dummy variables were included in the regressions, but they are not reported above for reasons of space. The two GMM specifications estimate the Arellano-Bond (difference) and Blundell-Bond (system) procedures with orthogonal deviations to adjust for an unbalanced panel; they are collapsed to minimize the number of instruments following the recommendations of Roodman (2006). Per capita GDP and growth were also included as endogenous variables in the GMM estimations. Standard errors are in parentheses. For the GMM estimates, standard errors are reported as *t* statistics based on Windmeijer (2005) finite sample correction and are corrected for serial correlation and heteroskedasticity.

b. The Arellano-Bond tests for first-order and second-order serial correlation are on the first-differenced residuals. The *p* values are the probability of rejecting the null hypothesis of no autocorrelation.

**TABLE A 3 . The Effect of Elections and New Democracies on Political Budget Cycles in Latin America, 1973–2008: Polity IV and the Half Rule<sup>a</sup>**

<i>Dependent and explanatory variable</i>	<i>Pooled OLS (1)</i>	<i>Pooled OLS with country fixed effects (2)</i>	<i>Pooled OLS with country and year fixed effects (3)</i>	<i>GMM one-step first difference (4)</i>	<i>GMM one-step system (5)</i>
<i>A. Government spending/GDP</i>					
Election year (ELEC <sub>t</sub> ), with half rule	−0.468 (0.430)	−0.246 (0.414)	−0.703 (0.427)	−0.617 (0.428)	−0.650 (0.408)
New democracy (RECENTDEM <sub>t</sub> )	−0.236 (0.276)	−0.191 (0.449)	−0.258 (0.418)	0.133 (0.478)	−0.486 (0.616)
RECENTDEM <sub>t</sub> * ELEC <sub>t</sub>	0.298 (0.567)	0.181 (0.538)	0.432 (0.539)	0.321 (0.460)	0.497 (0.420)
<i>Summary statistic</i>					
No. observations	421	421	421	410	421
Avg. time series length	23.39	23.39	23.39	22.78	23.39
R squared	0.835	0.855	0.871		
No. instruments				11	19
Arellano–Bond test for AR(2) ( <i>p</i> value) <sup>b</sup>				0.264	0.234
Hansen test for joint validity of instruments ( <i>p</i> value)				0.307	0.183
Diff. Sargan tests for all system instruments ( <i>p</i> value)					0.166
Total RECENTDEM <sub>t</sub> * ELEC <sub>t</sub> ( $\beta_3 + \beta_5$ )	−0.170 (0.370)	−0.066 (0.344)	−0.271 (0.341)	−0.296 (0.378)	−0.153 (0.335)
<i>B. Government Revenue/GDP</i>					
Election year (ELEC <sub>t</sub> ), with half rule	−0.398 (0.494)	−0.385 (0.464)	−0.612 (0.476)	−0.454 (0.302)	−0.490* (0.245)
New democracy (RECENTDEM <sub>t</sub> )	−0.298 (0.302)	−0.903** (0.420)	−0.741* (0.406)	−0.652 (0.433)	−0.267 (1.024)
RECENTDEM <sub>t</sub> * ELEC <sub>t</sub>	−0.0489 (0.616)	0.0324 (0.572)	0.203 (0.583)	0.0551 (0.533)	0.116 (0.635)
<i>Summary statistic</i>					
No. observations	412	412	412	400	412
Avg. time series length	22.89	22.89	22.89	22.22	22.89
R squared	0.836	0.864	0.881		
No. instruments				11	19
Arellano–Bond test for AR(2) ( <i>p</i> value) <sup>b</sup>				0.619	0.577
Hansen test for joint validity of instruments ( <i>p</i> value)				0.716	0.271
Diff. Sargan tests for all system instruments ( <i>p</i> value)					0.200
Total RECENTDEM <sub>t</sub> * ELEC <sub>t</sub> ( $\beta_3 + \beta_5$ )	−0.446 (0.367)	−0.352 (0.332)	−0.409 (0.340)	−0.399 (0.328)	−0.375 (0.447)

(continued)

**TABLE A 3 . The Effect of Elections and New Democracies on Political Budget Cycles in Latin America, 1973–2008: Polity IV and the Half Rule<sup>a</sup> (Continued)**

<i>Dependent and explanatory variable</i>	<i>Pooled OLS (1)</i>	<i>Pooled OLS with country fixed effects (2)</i>	<i>Pooled OLS with country and year fixed effects (3)</i>	<i>GMM one-step first difference (4)</i>	<i>GMM one-step system (5)</i>
<i>C. Fiscal Balance/GDP</i>					
Election year (ELEC <sub>t</sub> ), with half rule	–0.312 (0.516)	–0.345 (0.496)	–0.0394 (0.509)	–0.347 (0.648)	–0.342 (0.448)
New democracy (RECENTDEM <sub>t</sub> )	–0.560* (0.317)	–0.775* (0.431)	–0.731* (0.396)	–0.293 (0.685)	–0.933* (0.463)
RECENTDEM <sub>t</sub> * ELEC <sub>t</sub>	–0.159 (0.643)	–0.185 (0.619)	–0.284 (0.626)	–0.0963 (0.634)	–0.187 (0.394)
<i>Summary statistic</i>					
No. observations	412	412	412	400	412
Avg. time series length	22.89	22.89	22.89	22.22	22.89
R squared	0.414	0.461	0.546		
No. instruments				11	19
Arellano–Bond test for AR(2) ( <i>p</i> value) <sup>b</sup>				0.768	0.727
Hansen test for joint validity of instruments ( <i>p</i> value)				0.290	0.346
Diff. Sargan tests for all system instruments ( <i>p</i> value)					0.357
Total RECENTDEM <sub>t</sub> * ELEC <sub>t</sub> ( $\beta_3 + \beta_5$ )	–0.471 (0.385)	–0.530 (0.369)	–0.323 (0.363)	–0.443** (0.211)	–0.528*** (0.181)

\*Statistically significant at the 10 percent level.

\*\*Statistically significant at the 5 percent level.

a. The Polity IV definition of a new democracy encompasses the first four consecutive elections. The covariates include lags of the dependent variable, the log of per capita GDP, the ratio of international trade (sum of merchandise exports and imports) to GDP, the fraction of the population over age sixty-five, the fraction of the population between ages fifteen and sixty-four, and the log-difference between real GDP and its (country-specific) trend, estimated using a Hodrick-Prescott filter. Pooled OLS regressions were estimated with panel corrected standard errors that correct for groupwise heteroskedasticity and contemporaneous correlations of the errors. Where noted, country and year dummy variables were included in the regressions, but they are not reported above for reasons of space. The two GMM specifications estimate the Arellano-Bond (difference) and Blundell-Bond (system) procedures with orthogonal deviations to adjust for an unbalanced panel; they are collapsed to minimize the number of instruments following the recommendations of Roodman (2006). Per capita GDP and growth were also included as endogenous variables in the GMM estimations. Standard errors are in parentheses. For the GMM estimates, standard errors are reported as *t* statistics based on Windmeijer (2005) finite sample correction and are corrected for serial correlation and heteroskedasticity.

b. The Arellano-Bond tests for first-order and second-order serial correlation are on the first-differenced residuals. The *p* values are the probability of rejecting the null hypothesis of no autocorrelation.



**TABLE A 4 . The Effect of Elections and Transitional Democracies on Political Budget Cycles in Latin America, 1973–2008: The Minimalist Criterion and the Half Rule<sup>a</sup>**

<i>Dependent and explanatory variable</i>	<i>Pooled OLS (1)</i>	<i>Pooled OLS with country fixed effects (2)</i>	<i>Pooled OLS with country and year fixed effects (3)</i>	<i>GMM one-step first difference (4)</i>	<i>GMM one-step system (5)</i>
<i>A. Government spending/GDP</i>					
Election year (ELEC <sub>t</sub> ), with half rule	−0.088 (0.393)	0.047 (0.370)	−0.357 (0.370)	−0.175 (0.380)	−0.201 (0.454)
New democracy (RECENTDEM <sub>t</sub> )	−0.030 (0.269)	0.468 (0.389)	0.684* (0.380)	0.463 (0.662)	−0.209 (0.980)
RECENTDEM <sub>t</sub> * ELEC <sub>t</sub>	−0.685 (0.604)	−0.710 (0.563)	−0.463 (0.534)	−0.686 (0.713)	−0.419 (0.704)
<i>Summary statistic</i>					
No. observations	409	409	409	395	409
Avg. time series length	22.72	22.72	22.72	21.94	22.72
R squared	0.832	0.856	0.872		
No. instruments				11	19
Arellano–Bond test for AR(2) ( <i>p</i> value) <sup>b</sup>				0.302	0.246
Hansen test for joint validity of instruments ( <i>p</i> value)				0.323	0.250
Diff. Sargan tests for all system instruments ( <i>p</i> value)					0.350
Total RECENTDEM <sub>t</sub> * ELEC <sub>t</sub> ( $\beta_3 + \beta_5$ )	−0.772* (0.459)	−0.663 (0.426)	−0.819** (0.419)	−0.860 (0.608)	−0.619 (0.520)
<i>B. Government Revenue/GDP</i>					
Election year (ELEC <sub>t</sub> ), with half rule	−0.349 (0.418)	−0.344 (0.393)	−0.648* (0.388)	−0.417 (0.274)	−0.383 (0.226)
New democracy (RECENTDEM <sub>t</sub> )	−0.112 (0.288)	0.212 (0.377)	−0.00435 (0.376)	0.454 (0.399)	−0.130 (1.010)
RECENTDEM <sub>t</sub> * ELEC <sub>t</sub>	0.0406 (0.642)	−0.00232 (0.583)	0.230 (0.562)	−0.0272 (0.392)	−0.0764 (0.266)
<i>Summary statistic</i>					
No. observations	400	400	400	385	400
Avg. time series length	22.22	22.22	22.22	21.39	22.22
R squared	0.835	0.864	0.880		
No. instruments				11	19
Arellano–Bond test for AR(2) ( <i>p</i> value) <sup>b</sup>				0.600	0.570
Hansen test for joint validity of instruments ( <i>p</i> value)				0.757	0.425
Diff. Sargan tests for all system instruments ( <i>p</i> value)					0.328
Total RECENTDEM <sub>t</sub> * ELEC <sub>t</sub> ( $\beta_3 + \beta_5$ )	−0.308 (0.486)	−0.346 (0.431)	−0.418 (0.437)	−0.444 (0.289)	−0.459 (0.271)

(continued)

**TABLE A 4 . The Effect of Elections and Transitional Democracies on Political Budget Cycles in Latin America, 1973–2008: The Minimalist Criterion and the Half Rule<sup>a</sup> (Continued)**

<i>Dependent and explanatory variable</i>	<i>Pooled OLS</i> (1)	<i>Pooled OLS with country fixed effects</i> (2)	<i>Pooled OLS with country and year fixed effects</i> (3)	<i>GMM one-step first difference</i> (4)	<i>GMM one-step system</i> (5)
<i>C. Fiscal Balance/GDP</i>					
Election year (ELEC <sub><i>t</i></sub> ), with half rule	−0.525 (0.442)	−0.585 (0.424)	−0.389 (0.419)	−0.681 (0.472)	−0.649 (0.427)
New democracy (RECENTDEM <sub><i>t</i></sub> )	−0.322 (0.296)	−0.321 (0.398)	−0.932** (0.406)	0.0970 (0.962)	−0.350 (0.408)
RECENTDEM <sub><i>t</i></sub> * ELEC <sub><i>t</i></sub>	0.489 (0.672)	0.496 (0.636)	0.433 (0.605)	0.542 (0.409)	0.396 (0.586)
<i>Summary statistic</i>					
No. observations	400	400	400	385	400
Avg. time series length	22.22	22.22	22.22	21.39	22.22
R squared	0.370	0.441	0.517		
No. instruments				11	19
Arellano-Bond test for AR(2) ( <i>p</i> value) <sup>b</sup>				0.901	0.780
Hansen test for joint validity of instruments ( <i>p</i> value)				0.306	0.215
Diff. Sargan tests for all system instruments ( <i>p</i> value)					0.217
Total RECENTDEM <sub><i>t</i></sub> * ELEC <sub><i>t</i></sub> ( $\beta_3 + \beta_5$ )	−0.036 (0.504)	−0.089 (0.472)	0.043 (0.466)	−0.139 (0.296)	−0.252 (0.369)

\*Statistically significant at the 10 percent level.

\*\*Statistically significant at the 5 percent level.

a. The minimalist criterion for a new democracy is the founding election, with the democratic transition phase lasting through two election turnovers. The covariates include lags of the dependent variable, the log of per capita GDP, the ratio of international trade (sum of merchandise exports and imports) to GDP, the fraction of the population over age sixty-five, the fraction of the population between ages fifteen and sixty-four, and the log-difference between real GDP and its (country-specific) trend, estimated using a Hodrick-Prescott filter. Pooled OLS regressions were estimated with panel corrected standard errors that correct for groupwise heteroskedasticity and contemporaneous correlations of the errors. Where noted, country and year dummy variables were included in the regressions, but they are not reported above for reasons of space. The two GMM specifications estimate the Arellano-Bond (difference) and Blundell-Bond (system) procedures with orthogonal deviations to adjust for an unbalanced panel; they are collapsed to minimize the number of instruments following the recommendations of Roodman (2006). Per capita GDP and growth were also included as endogenous variables in the GMM estimations. Standard errors are in parentheses. For the GMM estimates, standard errors are reported as *t* statistics based on Windmeijer (2005) finite sample correction and are corrected for serial correlation and heteroskedasticity.

b. The Arellano-Bond tests for first-order and second-order serial correlation are on the first-differenced residuals. The *p* values are the probability of rejecting the null hypothesis of no autocorrelation.