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Election Cycles in Brazil:
New Evidence at the
Municipal Level**

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Opportunistic and Partisan Election Cycles in Brazil:

New Evidence at the Municipal Level

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Abstract

This article tests the hypothesis of opportunistic and partisan cycle models using a new large data set of Brazilian municipalities over the 1989-2005 period. The results show an increase in total and current expenditures and a decrease in municipal investments, local tax revenues and budget surplus in election years. They also show that partisan ideology exerts a relative influence on the performance of the local public accounts. These results confirm that both opportunistic and partisan cycles have occurred in the management of the budgets of Brazilian municipalities after the end of the military government.

JEL Classification: C23; H72;

Key words: Political cycles; Brazilian municipalities; Panel data

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1 - Introduction

This article seeks evidence of opportunistic and partisan cycles by examining an original sample covering more than 2,500 Brazilian municipalities¹ over a 17-year period (1989 to 2005). We use data on expenditures, revenues and fiscal balance to test the hypothesis that these variables behave differently as a function of the electoral cycle and of the party ideology of the mayors. Additionally, we analyze how these variables behave in the years before and after the election and how the possible opportunistic manipulation of the municipal budget differs among Brazilian political parties.

Analysis of the Brazilian case is of special interest for several reasons. First, Brazil is the largest and wealthiest country in Latin America.² Total public sector spending represents more than 35% of GDP, and of this amount, approximately one-fourth (about 9% of GDP) is spent by municipal governments. Hence, local spending is an important part of total public sector spending. Second, Brazil can be considered to be a relatively young democracy, since democracy returned only in 1984, after 20 years of military dictatorship. This implies that Brazilian voters have relatively limited experience with the process of choosing their leaders. The period analyzed here thus coincides with a period of learning by voters, theoretically making them more susceptible to opportunistic manipulation of the public budget by politicians.

There are other questions with particular bearing on the analysis of Brazilian local governing units. In the first place, our sample covers homogenous units from the standpoint of institutional regime, in contrast to studies of countries with significantly different political and economic characteristics, such as those of Brender & Drazen (2005) and Shi & Svensson (2006). In Brazil, the election rules and dates are uniform throughout the country. In particular, the electoral calendar is exogenous and known perfectly in advance by all agents.

Hence, opportunistic manipulations of the public purse can be carried out in synchrony with the electoral calendar and can assure greater visibility to voters during the run-up to the Election Day. In the second place, some studies in the political science literature state that Brazilian political parties are ideologically inconsistent, i.e., they do not clearly represent different public administration profiles.³ This is especially true at the municipal level, since local policies are influenced more by questions of party cronyism than ideology. Therefore, just as we seek to analyze the influence of the electoral calendar on the components of the local public budget, we also have the important additional purpose of investigating whether ideology makes any difference in the way public accounts are administered. Finally, because we use panel data with a large number of observations (more than 2,500 municipalities over 17 years), the results tend to be quite robust, giving importance to the findings for the relevant literature.

The evidence found in this study suggests that Brazilian municipal deficits increase in election years, as total and current expenditures rise and local tax revenues fall. The results also indicate that the party ideology of the mayors affects the way they administer their respective budgets.

The article is divided into five parts including this introduction. Section 2 provides a brief review of the literature and Section 3 describes the political and fiscal institutions in Brazil and also the methodology. The econometric results are presented in Section 4 and Section 5 presents the concluding remarks.

2 – Literature review

The literature on political cycles, defined generically as the possibility that political factors can affect the behavior of economic variables, contains some central references.

Nordhaus (1975) was one of the first to propose a theoretical model in which incumbent politicians would explore the short run trade-off of the Phillips curve ahead of elections, in order to gain electoral advantage. More specifically, by using fiscal and monetary policy instruments, politicians would be able to generate the so called “political business cycle”, i.e., favorable economic conditions prior to elections that may raise the incumbent politician's probability of reelection. However, as this model assumed that voters would form their expectations adaptively, it implied that voters could systematically be fooled by politicians before they cast their ballots, which is unlikely to be true.

In a well known article, Rogoff and Sibert (1988) developed an explanation for the existence of political cycles over time, by building a theoretical model with rational voters who lack perfect information (i.e., asymmetric information) regarding the competencies of elected officials. In this context, politicians would engage in electoral cycles by manipulating economic policy variables, such as taxes and government expenditures, as a way of signaling “competence” to voters, understood as an ability to produce a given level of public services with a lesser amount of revenue. Subsequently, Rogoff (1990) developed a similar model in which the incumbent manipulates the composition of total public expenditures before elections, by increasing spending that is more visible. Anyhow, this strand of the literature paid special attention to the manipulation of economic instruments, especially those regarding fiscal policy.

Parallel to the strand that emphasizes the electorally motivated cycles,⁴ a second theoretical approach emphasizes the influence of party ideological differences on the behavior of the economy. Hibbs (1977) was one of the first to show that a low unemployment and high inflation configuration is observed in nations under leftist governments. The conclusion is that governments pursue economic policies in accordance with the preferences of the constituencies they represent. By developing a theoretical model assuming rational voters,

Alesina (1987) also suggests that the economy tends to behave differently as a function of the ideological consistency of political parties once they are in power. In the United States, for instance, the author states that one should observe recessions at the beginning of Republican administrations, but output growth above trend and higher inflation at the beginning of Democratic governments.

The empirical evidence suggests distinct results regarding the possibility of electoral cycles and party cycles.⁵ Berger & Woitek (1997), for example, found evidence of expansions in aggregate output in periods leading up to German elections. More recently, Gonzalez (2002) evaluated the fiscal policy of the Mexican central government and also found evidence of opportunistic changes in election years. These results are in line with those identified by Grier (2008), who finds that the timing of elections exerts a significant influence on the American GDP growth during the 1961 – 2004 period. In contrast, the results of Alesina, Roubini and Cohen (1997) suggest the absence of electoral cycles in the OECD countries, and instead indicate the influence of party differences on the behavior of these economies. Particularly for Brazil, Fialho (1997) corroborated the hypothesis of expansion of aggregate output before presidential elections, while in an alternative assessment, Terra & Bonomo (2005) found evidence that domestic currency appreciations tend to occur before federal elections, while devaluations are normally observed after elections are held.

The more recent literature has sought to analyze fiscal behavior by examining databases covering countries at different levels of economic development. Brender & Drazen (2005) found evidence of the effect of electoral cycles on fiscal policy in a panel dataset, but showed that this result was due basically to the behavior of countries where democratic regimes are still recent, since in countries with stronger democratic traditions the electoral cycle phenomenon tends not to exist. Through a similar procedure, Shi & Svensson (2006) found robust evidence of fiscal deficit increases in election years, an effect that is much larger

in developing countries than in developed ones. For them, weak institutional constraints and the large share of uninformed and inexperienced voters in developing countries give politicians opportunities to engage in more effective fiscal policy manipulations, which might explain their results. Finally, in a more recent study which uses a panel of developing countries from 1975 to 2001, Vergne (2009) finds evidence that election-year public spending shifts towards more visible current expenditures, in particular wages and subsidies, and away from capital expenditures.

In line with the evidence provided by these country-panel studies, other authors have focused on the analysis of local units of single countries. Veiga & Veiga (2007) evaluated a panel composed of Portuguese municipalities during the 1979-2001 period and identified decreases in budget balance and local taxes and also increases in expenditures in election years, especially investment expenditures. Although they found little support for the influence of partisan ideology on public budget items, left-leaning incumbents tend to be more opportunistic than right-wing ones. Concerning developing countries, Akhmedov & Zhuravskaya (2004) investigated a panel of local Russian political jurisdictions and found an increase in public expenditures before elections and a decrease right afterwards. The public deficit also increased before elections, but no evidence was found of changes in local tax revenues before or after the voting period. Finally, Akhmedov & Zhuravskaya could not detect any evidence of partisan or ideological influences on the public budget. For Colombian local units, Drazen & Eslava (2010) showed that during the 1987-2002 period, infrastructure spending, including road construction and construction of power and water plants, increases prior to elections. In contrast, interest payments, transfers to retirees, and payments to temporary workers fall in election years. However, they did not test for the presence of partisan cycles.⁶ Finally, in a previous study using data similar to those used here, Sakurai and Menezes-Filho (2008) found that mayors who spend more during their term in office increase

the probability of their own reelection. This last result is connected with the recent study of Brender & Drazen (2008), who test whether an increase in the government's budget deficit during an election year helps the incumbent to get reelected. They find no evidence of that, whether the country is developed or not, or a new or and old democracy. However, they find that favorable macroeconomic performance, reflected in higher growth rates of real GDP per capita, is associated with a higher probability of reelection only in the less developed countries and in the new democracies - they do not find significant effects of growth on reelection in developed countries.

This brief review of the literature summarizes the main evidence on electoral and party cycles found to date. Based on this framework, the next section explains the methodology and the main questions addressed in this study.

3 – Brazilian institutions, methodology and data

As discussed previously, the more recent literature concerning political cycles has devoted special attention to the local government entities of developing countries, where democratic regimes are relatively recent. This is precisely the Brazilian case. The new Brazilian Constitution was enacted in 1988 after a military government that lasted from 1964 to 1984. According to the Constitution, voting is mandatory for all Brazilian citizens from 18 to 65 years of age (and optional for 16- and 17-year-olds and those over 65). The chief executives of the three government levels (federal, state and municipal) are chosen by majority vote and the legislators are chosen by a proportional rule based on party slates. For mayoralty elections in municipalities with fewer than 200,000 voters there is only one round, whereas in the larger ones there is a second round pairing the two candidates with the most first-round votes if no candidate obtains an absolute majority of the valid votes cast. However,

and more importantly, the Constitution states that local elections (for mayor and municipal council) are to be held every four years on a different cycle than the elections for governors and state and federal legislators. This implies that the electoral calendar is rigorously exogenous and that voters and candidates both are perfectly aware of the timing of the election cycle. During the sample period, 1992, 1996, 2000 and 2004 were years of local elections, which have been always held on the first or second Sunday of October.

Concerning fiscal issues, the Brazilian federalist system is highly centralized, in the sense that a significant amount of tax revenues are under the control of the federal government, and of the state governments to a lesser extent. In 2006, for example, federal tax revenues were close to 25% of Brazilian GDP, while the state and municipal taxes accounted for 9% and 1.5%, respectively. At the same time, expenditures are decentralized, given that the municipalities are largely responsible for important government functions such as education, health and sanitation. This means that local Brazilian governments, especially the smaller ones, are highly dependent on constitutional transfers from federal and state governments. Even though they have the legal right to develop their own tax systems, revenues from local sources are, in practice, residual, with the exception of the larger cities (generally the state capitals).

The sample analyzed in this article covers 2,527 municipalities between 1989⁷ and 2005; the dataset includes three types of variables: fiscal, political and demographic, the latter of which are used as controls in the estimations. The basic equations to be estimated can be summarized as follows:

$$FV_{it} = \alpha + f_i + \beta_1.FV_{it-1} + \beta_2.FV_{it-2} + \beta_3.election\ year\ dummy_{it} + \beta_4.ideology\ dummies_{it} + \beta_5.control\ variables_{it} + \epsilon_{it}$$

where i refers to each local unit, t refers to each year and α , f_i and ε_{it} are, respectively, the constant term, the municipal fixed effects and the idiosyncratic error. FV denotes each of the fiscal variables analyzed in this study, which are: (i) budget balance (total revenues minus total expenditures); (ii) total expenditures, which are decomposed between (iii) current expenditures and (iv) investment expenditures; and finally (v) municipal revenues from local taxes.

There are three key political variables in this study. The first of them, the election year dummy, is 1 in election years and 0 otherwise. The second involves the political ideology of Brazilian mayors, classified as left, center and right, following the methodology of Rodrigues (2002) (see Table 1). Therefore, there are three ideology dummies. The first assumes the value 1 if the mayor's party is on the right of the political spectrum (0 otherwise), the second is 1 if the party is on the left (0 otherwise), and the third is 1 if the mayor's party belongs to the group of other parties (0 otherwise), with the dummy of the centrist group kept as the reference. The investigation of political ideology is of great importance in this study, because it can add important findings to the literature on partisan cycles, mainly regarding developing countries and young democracies.

The third group of political variables refers to the alignment of the mayor with the governor and president. The first is a dummy equal to 1 if the mayor's party is part of the coalition that elected the state governor (0 otherwise) and the other equals 1 if the mayor's party is part of the coalition that elected the president (0 otherwise). In this respect, we should mention that differences between national and state alignments can happen when the governor comes from a different party coalition than that supporting the President. In Brazil, local and statewide party coalitions are not always the same as the national coalitions, i.e., parties are not always vertically consistent in the national, state and local coalitions they enter.

The estimations comprise a set of control variables, which include (i) municipal revenues from constitutional transfers (from the federal government and respective state governments); (ii) rate of urbanization; (iii) total population (in natural logarithms); (iv) proportion of young people (people under 14 years old) and (v) proportion of elderly (people over 65 years old) in each municipality. Finally, the estimations include time trends and a set of macroeconomic variables to control for common macroeconomic shocks.⁸

Given the usual persistence of fiscal variables over time, the estimations include two lags of the dependent variable. In this case, however, the lags are correlated with the error term, even if ε_{it} is not serially correlated, which implies that OLS estimates would be inconsistent, especially when there is a clear dominance of sectional units over time periods. In order to deal with this fact, we followed Veiga & Veiga (2007) and used the GMM system estimator proposed by Blundell and Bond (1998), which is preferable to the Arellano & Bond (1991) estimator when the dependent variable is persistent over time, which is likely to be the case here.

The data on public finances were obtained from the National Treasury, which is responsible for organizing and publishing federal, state and municipal financial data. The political data were obtained from the Superior Electoral Tribunal, the judicial authority in charge of overseeing election processes. Finally, the demographic data were obtained from the Brazilian Institute of Geography and Statistics (IBGE, the official census bureau). All fiscal data were converted into 2007 reais and are expressed in per capita values and natural logarithms, except for the case of the budget balance, which can assume negative values. Thus, the coefficient associated with revenue transfers and that associated with total population both can be interpreted as elasticities. The descriptive statistics are presented in the appendix, separately for election and non-election years. These data provide preliminary

evidence that total and current expenditures are higher in election years, but on the other hand, local taxes and budget balances seem to be lower.

4 - Results

This section presents the main results of the paper, obtained by applying the system-GMM two-step estimator to our data. The list of instruments, Sargan tests of instrument validity and the m_2 test of absence of second-order correlated errors terms are reported at the bottom of the tables. Windmeijer's (2005) robust standard errors (corrected for finite samples) are reported in parentheses.

4.1 – Electoral and party cycles

Table 2 here

We first examine the behavior of total expenditures of Brazilian municipalities. In order to compare different econometric procedures for panel data, Table 2 presents the results not only of the Blundell & Bond system-GMM procedure, but also for the random effects and fixed effects estimators. All three columns indicate that public expenditures are significantly higher in election years, the GMM coefficient being larger than the fixed and random-effects estimates. This means that municipalities tend to increase their expenditures in election relative to non-election years, our first evidence that opportunistic cycles exist in Brazil.

Additionally, the GMM estimates (column 3) indicate that ideology matters: left-wing parties tend to spend less than the centrist group, and so do the right-wing ones.⁹ Finally,

concerning the third group of political variables, the last column of Table 2 indicates that total expenditures in Brazilian municipalities are lower when the local mayor is politically aligned with the state governor. This result indicates that municipal expenditures are reduced when this alignment is present, perhaps because state-level spending on local projects replaces local budgetary resources. Hence, party alignment with the state government may not mean lower spending in the municipality. For the alignment with the federal government, the GMM estimates were not statistically significant.

Regarding the remaining covariates, the estimates indicate that it is important to take the dynamics of public spending into account, as the lags of the dependent variable are statistically significant in all specifications. With respect to the demographic variables, the GMM results indicate that expenditures decline with the proportion of young and old in the population

Table 3 here

Table 3 presents the system-GMM results regarding opportunistic and partisan cycles in the remaining fiscal variables. Each column refers to a different dependent variable and we preferred to keep the same specification across the columns, for the sake of comparison. When analyzing the composition of public expenditures, the hypothesis of opportunistic manipulation of public budgets in Brazil is once more corroborated by the results. The first column shows that current expenditures are increased significantly in election years. Local investments, on the other hand, tend to decrease in election years, since investments generally take time to produce visible outcomes. The results of the third column show that opportunistic manipulation also seems to hold in the case of the municipality's own revenues, given that the

election dummy is negative statistically significant. Finally, as a consequence of the previous results, budget surpluses tend to be significantly lower in election years.

Regarding the demographic variables, the coefficients indicate that current expenditures increase with the proportion of young voters, but decrease with the proportion of the elderly and with population size (conditional on the municipality fixed effects). In turn, local tax receipts are also negatively related to the proportion of people over 65 years old. For the remaining cases, the coefficients are not statistically significant at conventional levels.

In terms of the other political variables, the components of local Brazilian public budgets seem to be correlated weakly with mayors' political ideology. Leftist political parties promote a greater degree of budget balance, and a higher level of current expenditures is associated with the group "other parties". The remaining coefficients regarding political ideology are not statistically significant, suggesting no significant difference relative to the reference group, namely, the centrist parties.¹⁰ Finally, in terms of the political alignment with state and federal government, budget balance and investments seem to be lower when the local mayor and the President are members of the same political coalition. On the other hand, own tax revenues are higher when the local mayor and the state governor are politically aligned. Finally, the coefficients regarding the amount of transfers received from upper levels of government are positive and significant only in the cases of investment and budget balance – the first of them seems to be especially sensitive to grants, given that the estimated coefficient exceeds unity.

4.2 - Extensions

In this section we extend the analysis, following the previous literature on this subject.¹¹ Based on the earlier econometric work, the first modification is to include, besides the election year dummy, dummies for the years before and after the election to capture the dynamic of expenditures and tax revenues around election years. The results are shown in panel A of Table 4. A second modification of the basic model is to include interaction terms between party ideology and the election year dummy to capture the effects of electoral opportunism for each political group separately (panel B of Table 4). Finally, a third modification is to include interactions between the election year and dummies indicating political alignment with the federal and also with the state government. The results for these tests are presented in panel C of Table 4. In order to simplify the exposition, Table 4 reports only the coefficients of interest.

Table 4 here

In the case of total expenditures (column 1 of Table 4), the inclusion of the pre- and post-election year dummies show a particular dynamic of local expenses around the election year. The results indicate that the increase in election years tends to persist in the subsequent one, perhaps because some of the expenditures are difficult to cut back right away.¹² With respect to the second test (panel B), none of the interaction terms between party ideology and the election year dummy is statistically significant, suggesting that the manipulation of total expenditures in election years does not differ across the ideology groups. Finally, the results of panel C suggest that political alignment with the state government has a positive effect on total expenditures specifically in election years.

For the case of current expenditures (column 2 of Table 4), the amount spent in election years does not differ from the amounts observed in the year before an election or in

the year following one. It seems, therefore, that mayors cut expenditures only in the second year in office. Regarding panels B and C, the results are similar to those of total expenditures, that is, the opportunistic manipulation of current expenditures does not seem to differ across ideology groups, and the political alignment between local mayor and the state governor exerts a positive effect on these expenditures in election years.

In the case of investments (column 3 of Table 4), the results suggest that there are no electoral dynamics around the election year, given that all three parameters are not statistically different from zero. Regarding the interaction between the ideology dummies and the election year dummy (panel B), the evidence suggests that no political groups carry out opportunistic manipulations in the years before and after election years. The absence of statistical significance also holds for the interaction between political alignment and election year dummy (panel C).

According to the results in column 4, the decrease in the amount of tax collected by the local government occurs specifically in the election year. In turn, the inclusion of the interactions between the party ideology dummies and the election year dummy (panel B) and the interactions between political alignment and election year dummy (panel C) does not yield any significant results.

Finally, column 5 of Table 4 presents the results in terms of the budget balance. According to panel A, the balance tends to be lower specifically in the election year, similarly to the case of local revenues. Finally, the interactions between the party ideology dummies and the election year dummy and the interactions between political alignment and election year dummy are all statistically insignificant.

5 – Concluding remarks

This article sought evidence of electoral and partisan cycles in Brazilian municipalities by exploiting a sample covering most of the period after the country's return to democracy. The relevance of this study, however, should be seen in a broader context, because it sought to make a new contribution to the literature on political cycles by evaluating the case of a developing country that is also a relatively young democracy.

The results obtained suggest that there is a decrease in the fiscal surplus in election years, which occurs because current local expenditures increase and local tax revenues decline. Moreover, there is some evidence of a decrease in public investments in election years, since investments take some time to mature. These results are similar to those reported by Veiga & Veiga (2007) and Drazen & Eslava (2010), who find that local governments systematically change the composition of expenditures in election years. However, contrary to these studies, we find evidence that investments decline in election years. Therefore, this article provides evidence that countries with similar levels of economic development and political maturity (the cases of Brazil and Colombia) may present different results with respect to opportunistic cycles. The results also indicate that the political ideologies of Brazilian parties influence the behavior of municipal finances. Moreover, each fiscal variable examined behaves differently not only around the election year but also in relation to the political alignment with higher levels of government in the election year itself.

These results are important because they strengthen the evidence that developing countries that are considered young democracies are precisely those that are most susceptible to opportunistic fiscal manipulation. Moreover, this paper contributes to the literature on the importance of ideology in public finance, by examining how the party affiliations of Brazilian mayors influence the way local budgets are managed.

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Appendices

Appendix 1: Descriptive Statistics

	Non election years				Election years			
	Obs.	Mean (Std Dev)	Min	Max	Obs.	Mean (Std Dev)	Min	Max
Log of per capita total expenditures	23,949	6.58 (0.49)	4.78	8.51	9,375	6.61 (0.49)	5.00	8.47
Log of per capita current expenditures	23,949	6.39 (0.49)	4.47	8.37	9,375	6.43 (0.50)	4.71	8.38
Log of per capita investment expenditures	23,694	4.41 (0.90)	-2.39	7.57	9,333	4.40 (0.92)	-2.05	7.64
Log of per capita own municipal tax revenues	23,979	3.42 (1.31)	-10.11	7.66	9,339	3.39 (1.36)	-6.23	7.79
Per capita budget balance	23,949	59.34 (164.75)	-1,384.03	2,279.00	9,375	28.89 (172.07)	-2,004.47	1,970.57
Log of per capita transfer revenues	23,949	6.49 (0.50)	4.41	8.79	9,375	6.49 (0.50)	4.62	8.52
Young (%)	23,949	30.71 (5.00)	14.25	51.14	9,375	30.39 (4.92)	15.28	49.71
Elderly (%)	23,949	5.74 (1.58)	0.86	19.55	9,375	5.82 (1.61)	0.92	15.71
Urbanization rate (%)	23,949	63.78 (22.56)	6.68	100.00	9,375	64.31 (22.52)	8.01	100.00
Log of total population	23,949	9.53 (1.17)	6.50	16.23	9,375	9.54 (1.18)	6.71	16.22
Nationwide per capita GDP (thousand of R\$)	23,949	12.621 (0.970)	11.138	14.251	9,375	12.689 (0.932)	11.656	14.030
State level per capita GDP (thousand of R\$)	23,949	12.172 (4.496)	2.812	20.199	9,375	12.274 (4.420)	2.581	19.466
Inflation rate	23,949	506.505 (833.453)	1.232	2,708.170	9,375	318.277 (508.510)	9.326	1,157.836

Source: authors

Sources of data: Brazilian National Treasury, Superior Electoral Tribunal and IBGE

Note: fiscal variables are expressed in 2007 real, per capita values.

Endnotes

1 – The local political unit in Brazil is the municipality, which is much like a county in the United States, except it has a single administration, a mayor and a municipal council. The largest metropolitan areas, such as São Paulo and Rio de Janeiro, sprawl over several municipalities, while many rural municipalities may contain only a few small towns, one of which serves as the municipal seat. There are no unincorporated areas in Brazil; all territory falls within the municipalities.

2 – Brazil's population is around 190 million, which represents 34% of Latin America's total. Additionally, its 2006 GDP is approximately US\$ 1.1 billion, about 38% of the region's figure. In contrast, Mexico's GDP share is about 29%.

3 – See, for instance, Ames (1995) and Mainwaring & Scully (1995).

4 – The traditional literature concerning opportunistic cycles considers that politicians engage in fiscal manipulation in order to increase their chances of reelection (to get ego rents or to enhance their political careers, for instance). As an additional reason, Baleiras (1997) develops a model in which the fear of losing the income earned in the public sector might explain why an incumbent would generate opportunistic distortions in the public budget.

5 – See Drazen (2000) for a more detailed description of the literature concerning electoral and partisan cycles.

6 – The partisan effect is analyzed only when the authors test the influence of expenditures on the number of votes received by the incumbent.

7 – Although the military government ended in 1984, municipal elections were not held until 1988. However, we were not able to include this year in the sample, nor the last municipal election, held in 2008, given fiscal data is available only from 1989 to 2005.

8 – The macroeconomic indicators are third-order polynomials on time trend and inflation, plus the level and growth of national and state-level GDP per capita.

9 – For the system-GMM results, the hypothesis test provided a p-value equal to 0.019 for the null of equality of the right and left groups' coefficients.

10 – For current expenditures, own tax revenues and budget balance, the hypothesis tests suggest that right and left coefficients should not be regarded as different (p-values equal to 0.57, 0.32 and 0.22, respectively, for the null of equality). The exception is the case of investments, for which the p-value is equal to zero.

11 - The inclusion of dummies for the year before and after the election period was inspired by Akhmedov & Zhuravskaya (2004) and Veiga & Veiga (2007).

12 – The χ^2 statistics that the probability of the election year dummy is statistically equal to the post-election year dummy is 0.98 for the null of equality.

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Table 1: Brazilian Political Parties

Left	Center	Right
PT	PMDB	PFL
PDT	PSDB	PPB
PSB	PTB	PL
PC do B		PSD
PPS		PSC
PMN		Prona
PV		PSL
		PST

Source: Rodrigues (2002)

Note: Name of Brazilian political parties

PT = Partido dos Trabalhadores (Workers' Party)

PDT = Partido Democrático Trabalhista (Democratic Labour Party)

PSB = Partido Socialista Brasileiro (Brazilian Socialist Party)

PC do B = Partido Comunista do Brasil (Communist Party of Brazil)

PPS = Partido Popular Socialista (Socialist People Party)

PMN = Partido da Mobilização Nacional (National Mobilization Party)

PV = Partido Verde (Green Party)

PMDB = Partido do Movimento Democrático Brasileiro (Brazilian Democratic Movement Party)

PSDB = Partido da Social Democracia Brasileira (Brazilian Social Democratic Party)

PTB = Partido Trabalhista Brasileiro (Brazilian Labour Party)

PFL = Partido da Frente Liberal (Liberal Front Party)

PPB = Partido Progressista Brasileiro (Brazilian Progressive Party)

PL = Partido Liberal (Liberal Party)

PSD = Partido Social Democrata (Social Democratic Party)

PSC = Partido Social Cristão (Social Christian Party)

Prona = Partido de Reedificação da Ordem Nacional (Party of the National Order Rebuilding)

PSL = Partido Social Liberal (Social Liberal Party)

PST = Partido Social Trabalhista (Social Labour Party)

Table 2: Opportunistic and partisan cycles – Total Expenditures

	(1)	(2)	(3)
Log (total expenditures)	Random Effects	Fixed Effects	GMM
Election year dummy	0.051*** (0.002)	0.054*** (0.002)	0.146*** (0.030)
Left	-0.003 (0.002)	-0.003 (0.003)	-3.015*** (1.107)
Right	0.002 (0.002)	2.7E-05 (0.002)	-1.471* (0.852)
Other parties	0.007** (0.003)	0.003 (0.004)	2.844** (1.406)
Political alignment with President	0.005*** (0.002)	0.002 (0.002)	0.337 (0.419)
Political alignment with State Governor	-4.6E-04 (0.002)	4.2E-04 (0.002)	-0.661*** (0.197)
Log of total transfers	0.572*** (0.008)	0.728*** (0.015)	-0.012 (0.213)
Young	-0.002*** (2.7E-04)	-0.004*** (0.001)	-0.233** (0.098)
Elderly	-0.002*** (0.001)	-0.009*** (0.001)	-0.383** (0.171)
Urbanization rate	0.001*** (4.1E-05)	0.001*** (1.9E-04)	-0.009 (0.009)
Log of total population	0.040*** (0.001)	-0.084*** (0.011)	-0.323* (0.192)
Expenditures (t-1)	0.372*** (0.008)	0.206*** (0.008)	-0.024 (0.154)
Expenditures (t-2)	0.074*** (0.005)	-0.021*** (0.006)	-0.525*** (0.150)
Constant	1.819*** (0.267)	2.585*** (0.286)	19.308** (8.833)
Observations	33,224	33,224	33,224
Number of municipalities	2,527	2,527	2,527
R²	0.9246	0.8415	-
Hausman test (prob)	-	0.000	-
Instruments for differenced equation	-	-	y _{t-3}
Instrument for level equation	-	-	Δy _{t-1}
Sargan (prob)	-	-	0.8371
m₂ (prob)	-	-	0.4702

Notes: All models include the following set of macroeconomic indicators: third-order polynomials of time trend and of inflation, plus the level and growth of national and state-level GDP per capita. GMM refers to Blundell & Bond's GMM linear models for panel data; standard-errors in parentheses; Sargan is a test for valid instruments under the null hypothesis, asymptotically distributed as χ^2 , with degrees of freedom equal to the number of over-identifying restrictions. m_2 is a test for second-order serial correlation in the first-differenced residuals, asymptotically distributed as $N(0,1)$ under the null hypothesis of no serial correlation; Stars indicate statistical significance at 1% (***), 5% (**) and 10% (*) levels.

Table 3: Opportunistic and partisan cycles – Fiscal variables

	(1)	(2)	(3)	(4)
Coefficient (Standard error)	Current expenditures	Investments	Own tax revenues	Budget balance
Election year dummy	0.241*** (0.044)	-0.257** (0.124)	-0.156*** (0.045)	-153.677*** (55.388)
Left	-0.245 (1.674)	6.578 (4.255)	-2.277 (1.762)	1,341.514* (756.501)
Right	-0.867 (1.034)	-0.440 (4.601)	-1.437 (1.407)	260.296 (521.945)
Other parties	5.357** (2.398)	-1.319 (3.348)	-1.881 (2.131)	1,251.987 (998.278)
Political alignment with President	0.610 (0.639)	-3.092* (1.848)	0.007 (0.496)	-1,138.299* (657.323)
Political alignment with State Governor	-0.665 (0.434)	2.868 (4.035)	1.028*** (0.396)	209.027 (267.843)
Log of total transfers	-0.326 (0.325)	5.583*** (1.705)	0.226 (0.289)	901.291** (390.323)
Young	0.160* (0.082)	0.120 (0.361)	-0.383 (0.250)	26.369 (56.920)
Elderly	-0.309* (0.159)	0.326 (1.060)	-0.503*** (0.165)	144.775 (138.334)
Urbanization rate	-0.001 (0.010)	-0.045 (0.064)	-0.042 (0.063)	-2.378 (15.232)
Log of total population	-0.467** (0.208)	1.083 (0.862)	-0.118 (0.408)	209.544 (165.320)
First lag of dependent variable	-0.205 (0.233)	-0.221 (0.596)	0.443 (0.304)	0.218* (0.130)
Second lag of dependent variable	-0.467*** (0.126)	0.154 (0.231)	0.073 (0.067)	0.066 (0.058)
Constant	-15.719 (10.964)	-14.045 (42.895)	19.836 (12.387)	-12,528.900 (8,373.347)
Observations	33,324	33,027	33,318	33,324
Number of municipalities	2,527	2,527	2,527	2,527
Instruments for differenced equation	y_{t-4}	y_{t-3}	y_{t-3}	y_{t-3}
Instrument for level equation	Δy_{t-1}	Δy_{t-4}	Δy_{t-2}	Δy_{t-1}
Sargan (prob)	0.7462	0.7343	0.9539	0.9685
m_2 (prob)	0.1292	0.1159	0.1428	0.1480

Notes: All models estimated by means of Blundell & Bond's GMM linear models for panel data; the models include the following set of macroeconomic indicators: third-order polynomials on time trend and inflation, plus the level and growth of national and state-level GDP per capita; standard-errors in parentheses; Sargan is a test for valid instruments under the null hypothesis, asymptotically distributed as χ^2 , with degrees of freedom equal to the number of over-identifying restrictions. m_2 is a test for second-order serial correlation in the first-differenced residuals, asymptotically distributed as $N(0,1)$ under the null hypothesis of no serial correlation. Stars indicate statistical significance at 1% (***) and 5% (**) and 10% (*) levels.

Table 4: Opportunistic and partisan cycles – Additional tests

	(1)	(2)	(3)	(4)	(5)
Coefficient (Standard error)	Total expenditures	Current expenditures	Investments	Own tax revenues	Budget balance
Panel A					
Year before election	0.053 (0.073)	0.204*** (0.072)	-0.840 (1.311)	-0.063 (0.144)	33.645 (131.986)
Election year	0.137*** (0.045)	0.278*** (0.040)	-0.601 (0.657)	-0.201* (0.104)	-142.449** (66.283)
Year after election	0.135** (0.060)	0.235*** (0.052)	-0.605 (0.727)	-0.009 (0.088)	-1.578 (78.885)
Observations	33,324	33,324	33,027	33,318	33,324
Number of municipalities	2,527	2,527	2,527	2,527	2,527
Sargan (prob)	0.8286	0.4317	0.1345	0.8598	0.9333
m₂ (prob)	0.1983	0.1331	0.8979	0.8353	0.3468
Panel B					
Election year & Left	0.147 (0.918)	0.906 (0.790)	-3.072 (4.479)	-0.355 (1.642)	-493.251 (535.093)
Election year & Right	0.061 (0.866)	-0.004 (1.446)	-0.395 (2.737)	-0.507 (0.991)	-176.241 (176.735)
Election year & Other parties	1.847 (4.695)	2.221 (8.647)	6.156 (13.033)	1.149 (3.412)	-340.624 (1,056.150)
Observations	33,324	33,324	33,027	33,318	33,324
Number of municipalities	2,527	2,527	2,527	2,527	2,527
Sargan (prob)	0.7112	0.5790	0.7667	0.8511	0.8856
m₂ (prob)	0.4481	0.3059	0.2108	0.1488	0.2056
Panel C					
Election year & Political alignment with President	-0.084 (0.131)	0.166 (0.279)	-1.965 (2.708)	-0.216 (0.585)	32.058 (279.068)
Election year & Political alignment with State Governor	0.896** (0.386)	1.108** (0.517)	-0.835 (1.507)	0.309 (0.635)	-38.745 (431.028)
Observations	33,324	33,324	33,027	33,318	33,324
Number of municipalities	2,527	2,527	2,527	2,527	2,527
Sargan (prob)	0.6046	0.8836	0.7415	0.8022	0.9053
m₂ (prob)	0.6105	0.7666	0.9854	0;7462	0.2243

Notes: All models estimated by means of Blundell & Bond's GMM linear models for panel data; the models include the following set of macroeconomic indicators: third-order polynomials on time trend and inflation, plus the level and growth of national and state-level GDP per capita; standard-errors in parentheses; Sargan is a test for valid instruments under the null hypothesis, asymptotically distributed as χ^2 , with degrees of freedom equal to the number of over-identifying restrictions; m_2 is a test for second-order serial correlation in the first-differenced residuals, asymptotically distributed as $N(0,1)$ under the null hypothesis of no serial correlation. For all estimations, instruments for level and differenced equations are the same of those reported in table 2 and 3. Stars indicate statistical significance at 1% (***), 5% (**) and 10% (*) levels.