Fundação Getúlio Vargas
Escola de Administração de Empresas de São Paulo

FABIO ALVIM KLEIN

ELECTIONS AND FISCAL POLICY AT THE MUNICIPAL LEVEL IN BRAZIL

São Paulo
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Política e Economia do Setor Público

Orientador: Prof. Dr. George Avelino Filho

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Data de Aprovação: 24/02/2012

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ABSTRACT

This thesis adds to the political business cycles (PBC) literature by studying the relationships between elections, term limits, political parties and fiscal policies in 3,393 Brazilian municipalities between 2001 and 2008. The results show that first term mayors increase total revenues and keep reasonable levels of spending during elections, thus preserving or either increasing budget balances. They also change their budget composition from current expenditures (e.g. personnel) towards capital related ones (e.g. investments) as elections approach. In fact, only first term mayors seem to benefit from opportunistic increases in fiscal variables, especially in current and personnel expenditures. Yet, first term mayors are not necessarily less fiscally responsible than second term mayors along their term in office (non-electoral years) or during elections. In this sense, elections with first term and second term mayors seem to promote a competitive feature which appears to enhance electoral and fiscal accountability. This thesis also points at a significant association between opportunistic and partisan fiscal cycles at the local level in Brazil. During elections, right-wing parties increase the budget balance, while left-wing parties increase capital related expenditures and reduce current and personnel expenditures, but in this last case not as much as other parties. By doing so, these parties partially meet voters' fiscal preferences. During the term (non-electoral years), however, right-wing parties present a slightly looser budget balance, while left-wing parties invest less than other parties, and these policies are not favoured by voters. Overall, this study shows that voters in Brazil recognize a sustainable fiscal management, enjoying both higher government revenues and spending, especially rewarding higher capital expenditures and investments throughout the incumbent's term and increases in current and personnel expenditures in the electoral year. In any case, voters' fiscal preferences are mostly independent of ideological preferences.

Keywords: *fiscal policy, elections, political business cycles*

RESUMO

Esta tese contribui para a literatura sobre ciclos políticos de negócios ao estudar as relações entre eleições, limites à reeleição, partidos e política fiscal em 3.393 municípios brasileiros entre 2001 e 2008. Os resultados mostram que prefeitos de primeiro mandato aumentam receitas totais e mantém níveis razoáveis de gastos durante as eleições, preservando ou até aumentando o balanço orçamentário. Eles também alteram sua alocação orçamentária reduzindo despesas correntes (e.g. pessoal) e aumentando despesas de capital (e.g. investimentos) à medida que as eleições se aproximam. Em realidade, apenas prefeitos de primeiro mandato parecem se beneficiar de aumentos oportunistas nas variáveis fiscais, especialmente em despesas correntes e de pessoal. No entanto, prefeitos de primeiro mandato não são necessariamente menos responsáveis fiscalmente do que prefeitos de segundo mandato ao longo da gestão (anos não eleitorais) ou durante as eleições. Nesse sentido, eleições com prefeitos de primeiro e segundo mandatos parecem promover condições competitivas que potencialmente aumentam a responsabilização eleitoral e fiscal. Essa tese também aponta para uma significativa associação entre ciclos fiscais oportunistas e partidários no nível local no Brasil. Durante as eleições, partidos de direita aumentam o balanço orçamentário, enquanto partidos de esquerda aumentam despesas de capital e reduzem despesas correntes, mas nesse último caso não tanto quanto os demais partidos. Ao fazerem isso, esses partidos atendem parcialmente às preferências dos eleitores. Durante o mandato (anos não eleitorais), entretanto, partidos de direita apresentam um balanço orçamentário levemente mais baixo, enquanto partidos de esquerda investem menos do que os demais partidos, e essas políticas não são favorecidas pelos eleitores. De forma geral, esse estudo mostra que os eleitores no Brasil reconhecem uma administração fiscalmente responsável, e têm uma preferência por mais receitas e gastos públicos, especialmente premiando maiores despesas de capital e investimentos ao longo do mandato político e aumentos em receitas e despesas correntes no ano eleitoral. De qualquer modo, as preferências fiscais dos eleitores são independentes das preferências ideológicas.

Palavras-chave: *política fiscal, eleições, ciclos políticos de negócios*

Introduction

The literature on political business cycles (PBC) studies the relationships between elections, political parties and economic policies. In the *opportunistic* PBC models, politicians take electoral periods as an opportunity to increase their reelection chances by promoting positive shocks in the economy right before elections. In the *partisan* PBC models, business cycles are partially caused by changes in economic policy according to the different ideological positions of the elected parties. These ideas are very intuitive, but have not found complete adherence to empirical data. This study adds to the PBC literature using fiscal and electoral data of 3,393 Brazilian municipalities between 2001 and 2008. It is the first known study to empirically test the presence, magnitude and electoral effects of political fiscal cycles in local elections in Brazil under the new institutional context brought about after the implementation of the Reelection Amendment (ER), the new Electoral Legislation (EL) – both in 1997, and the Law of Fiscal Accountability (LRF) in 2000.

Chapter 1 studies the effects of term limits on fiscal policy by comparing the fiscal behaviour of first term mayors (who are eligible for reelection) and second term mayors (who are legally banned to run for a second mandate). Surprisingly, the literature on opportunistic PBC has usually neglected the effects of term limits on fiscal behaviour. This omission is critical, since incumbents who are not eligible for reelection should lack the main individual incentive which according to theory presumably causes opportunistic fiscal policy. The results show that while second term mayors reduce most government revenues and spending during elections, first term mayors increase total revenues and the budget balance, while still keep reasonable levels of spending. Besides, first term mayors change their budget composition by moving from current expenditures towards capital related ones, while adjust their tax revenues losses with higher revenues from grants, so that budget balance is preserved. Finally, first term mayors are not necessarily less fiscally responsible than second term mayors along their term in office (non-electoral years). In this sense, elections with first term and second term mayors seem to promote a competitive feature which appears to enhance electoral and fiscal accountability.

Chapter 2 studies the effects of fiscal policies on reelection probabilities. More specifically, it checks if these effects are stronger for first term mayors who are granted the chance to run for reelection. Results show that during non-electoral years, both mayors increase their reelection chances by promoting balanced budgets and higher levels of total

revenues, total spending, capital expenditures and investment expenditures, although the effects are stronger under first term mayors. The fact that first term mayors are particularly favoured by higher term's average (non-electoral years) capital expenditures and capital investments is consistent with the idea that they have an additional incentive to increase capital expenditures in the first years in office, once they can individually benefit from the electoral returns and political dividends such investments generate in the longer run (e.g. second mandate). During elections, only first term mayors seem to benefit from opportunistic increases in fiscal variables, with the strongest effects being observed for current expenditures and personnel expenditures. A suggestive explanation is again related to the greater reelection incentives faced by first term mayors, whose benefits derived from a second term in office might pay the costs and risks associated with increases in current and personnel expenditures in the electoral year, once these are subject to restrictions and prohibitions according to the electoral and fiscal legislation.

Chapter 3 checks if opportunistic fiscal policies change according to partisan differences. The empirical literature on PBC has traditionally analysed opportunistic and partisan cycles separately. However, there is no theoretical or practical reason why this should be so. For instance, partisan fiscal cycles can be characterized not only by distinct fiscal policies along a party's mandate, but also by distinct movements along fiscal policies as elections approach. The results from this chapter point at a significant association between opportunistic and partisan fiscal cycles at the local level in Brazil. During elections, left-wing parties increase capital related expenditures and reduce current and personnel expenditures, but in this last case not as much as other parties, getting an electoral advantage over their competitors. Right-wing parties promote a positive change in the budget balance in electoral year, which also finds voters' support. No significant partisan differences are observed for the fiscal policies implemented over the term in office (non-electoral years), except by slightly looser budget balances under right-wing administrations and lower investments under left-wing ones. Overall, this study shows that voters in Brazil recognize a sustainable fiscal management, enjoying both higher government revenues and spending, especially rewarding higher capital expenditures and investments throughout the incumbent's term and increases in current and personnel expenditures in the electoral year. In any case, voters' fiscal preferences are mostly independent of ideological preferences.

Chapter 1 - Does the permission to run for reelection affect fiscal policy?

Abstract By exploring the different electoral incentives faced by mayors who are eligible for reelection (i.e. first term mayors) and those who are legally banned to run for a second mandate (i.e. second term mayors), this article provides strong evidence in favour of significant fiscal differences between both types of mayors in Brazil. As elections get close, first term mayors change their budget composition by moving from current expenditures towards capital related ones, while adjust their tax revenues losses with higher revenues from grants, so that budget balance is preserved. Moreover, first term mayors are not necessarily less fiscally responsible than second term mayors along their term in office (non-electoral years). These findings are consistent with recently developed signalling models of PFCs, where incumbents running for reelection change the composition of the budget in electoral years in a fiscally responsible manner, so as to signal his levels of competence or policy preferences to rational, fiscal conservative and heterogeneous voters.

I. Introduction

Since Nordhaus (1975) launched his very suggestive model of political business cycle (PBC) – in which incumbent politicians seeking to enhance their reelection chances behave opportunistically by promoting an expansionary economic policy before elections, usually followed by a contractionary one after elections – a large body of empirical work testing his theory has been produced in the last 30 years. Overall, evidence has given only little support to Nordhaus' predictions.

In a review of the PBC literature, Drazen and Eslava (2003) resume what many authors have concluded as reasons for such weak evidence in favour of Nordhaus' monetary based model: the assumption that politicians control monetary policy; that inflation has a central role in determining unemployment, and that voters are irrational. This explains why further models on PBCs which focused on fiscal variables and were based on rational expectations of both politicians and voters seemed to better fit the empirical data (PERSSON; TABELLINI, 1990; ROGOFF, 1990; ROGOFF; SIBERT, 1988).

Be it on a monetary or fiscal approach, the main independent variable of interest in most empirical studies of opportunistic political cycles is a time dummy reflecting an election period, with the interest of analysis focusing on how it affects dependent variables such as output growth, inflation, unemployment rates, total government spending and revenues, capital expenditures, budget balance and so on. If an opportunistic PBC exists, this election dummy should significantly affect the dependent variable, in which during electoral periods one would observe an expansionary policy, followed by a contractionary one after elections.[1]

Among the many political motivations driving PBCs, perhaps the main one is the search for reelection (of a politician or party)[2]. Therefore, the legal and real possibility of an incumbent politician or party for getting reelected is a necessary condition for the emergence of political fiscal cycles (PFCs)[3].

However, not all incumbents are eligible to run for reelection, and not all seek reelection. Most of the literature ignores that fact, not clearly explaining whether the eligibility and/or the decision to run for reelection affect the fiscal behaviour of incumbents and parties. This omission is critical, since incumbents who are not eligible for reelection should lack the main individual incentive which according to theory presumably causes opportunistic fiscal policy.

How, then, do the fiscal strategies of politicians who are eligible for reelection differ from those who cannot stand for a second mandate? In other words, does the permission to run for reelection affect fiscal policy? Few works have attempted to provide answers to this crucial question, as will be see in the following section. If the theoretical predictions of opportunistic fiscal cycles are correct, one should expect more loose fiscal policies in the last years of a mandate (i.e. election years) for the group of first term politicians (who are eligible for reelection) than for the group of last term politicians (who are legally impeded to run for reelection).[4]

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[1] Many studies also test the effects of pre and post electoral years on economic and fiscal variables, but the main concept is the same: an expansionary policy might start in the year before elections, while a contractionary policy would take place in the year after elections. The idea is that political opportunism is intrinsically not sustainable in the long run, thus the need to adjust.

[2] See Franzese and Jusko (2006, page 3): "In all democracies, all policymakers and policies ultimately must survive evaluation in partisan electoral contests. As a result, political-economic cycles should always emerge (…)"

[3] In the following pages I shall use the terminology "Political Fiscal Cycles" (PFC) to refer to political cycles on fiscal variables.

[4] Note that this hypothesis relies on the assumption that politicians behave opportunistically because voters respond positively to such opportunistic policies. However, many studies have actually found that voters are

Surely, the assumption that first term incumbents are more inclined to behave opportunistically compared with those at their last term could be false if one considers that even last term incumbents still have incentives to behave opportunistically, for example if he is aiming at the reelection of his party, election of a party belonging to his coalition, or promoting his own political career whenever running for other posts. Moreover, it could be that last term incumbents would be inclined to generate higher deficits whenever transferring office to a political opponent, leaving behind a bad fiscal situation to the following government.

The above arguments are very plausible, but suggest that politicians would pretty much adopt the same fiscal strategy regardless of their electoral conditions and political motivations. On the other hand, splitting incumbents into two distinct groups (first and last term incumbents) is both feasible and meaningful for an appropriate empirical analysis of the opportunistic-type PFCs and a sufficient condition for accurately testing its existence and magnitude.

By applying a Difference-in-Differences (DD) econometric approach – a treatment effect analysis used to identify behavioural differences between two groups of individuals over time – and relying on fiscal and electoral data of 3,393 Brazilian municipalities between 2001 and 2008, this research provides strong evidence in favour of significant fiscal differences between first term and second term mayors during elections. As elections get close, first term mayors change their budget composition by moving from current expenditures towards capital related ones, while adjust their revenues losses from taxes with higher revenues from grants, so that budget balance is preserved. Moreover, first term mayors are not necessarily less fiscally responsible than second term mayors along their term in office (non-electoral years). These findings are consistent with recently developed signalling models of PFCs, where incumbents running for reelection behave opportunistically by changing the composition of the budget in electoral years, but in a fiscally responsible manner, so as to signal his levels of competence or policy preferences to rational, fiscal conservative and heterogeneous voters who have a preference for targeted expenditures.

The article is structured as follows. In the next section, it is shown why Brazil should be considered an interesting case study to test the hypothesis of fiscal opportunism during elections. In Section III, a brief literature review on political business cycles is presented,

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fiscal conservatives, punishing higher government spending or budget deficits during the term and/or in electoral years (BRENDER, 2003; BRENDER; DRAZEN, 2005; PELTZMAN, 1992).

together with explanations on how this study relates to it. In section IV, descriptive statistics and tests are provided, followed by the formulation of empirical strategy in section V. The main results are analysed in section VI, followed by concluding remarks in section VII.

II. Brazil as an interesting case study

Brazil is an interesting case study to test the opportunistic fiscal cycle at the local level for a number of reasons. First, Brazil has 5,565 municipalities, making it one of the biggest and most politically decentralized federalist countries in the world, providing important features for statistical inference and econometric tests.

Second, municipalities constitute the smaller electoral district in Brazil, being the main geographical unit where votes are cast in local, state and national elections. In this sense, much of the political game is played at the municipal level.

Third, municipalities are subject to a number of common constitutional rules, being comparable in a broad range of institutional features. For example, since the new Constitution (1988), voting has become mandatory for all Brazilian citizens over 18 years of age (and optional for those between 16 and 18 and those above 70), with local elections being held every four years, with a fixed date common to all municipalities, making the electoral calendar strictly exogenous and predictable.

In terms of public finance, most Brazilian municipalities, especially the smaller ones, have a big share of their total revenues dependent on constitutional transfers from federal and state-level governments[5]. But while tax revenues are highly centralized, expenditures and provision of basic public services are much decentralized at the local level, so that mayors are key decision makers regarding the use and management of local public finance, especially on the spending side.

Moreover, Brazil has recently undergone important institutional changes affecting fiscal and electoral behaviour. Three deserve special attention: the new Electoral Legislation (EL),[6] the Reelection Amendment (ER),[7] and the Law of Fiscal Accountability (LRF).[8]

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[5] On average, current transfers represent 80% of the municipalities' total revenues.
[6] Lei n.9504, 30th of September 1997.
[7] Emenda Constitucional n. 16, 4th of June 1997.
[8] Lei Complementar n. 101, 4th of May 2000.

The EL tackles the problems associated with electoral opportunism by imposing limits to reelection candidates on various administrative and fiscal decisions prior to elections. According to this legislation, incumbent politicians are legally impeded, three months before elections, to participate in the inauguration of public works; to implement administrative changes affecting staff, public employees and civil servants (especially promoting new hires and nominations); to make voluntary transfers from the Union to federal states and municipalities, or from states to municipalities, except to cover ongoing expenses of maintenances and services already at work and with predefined schedule, or destined to meet emergency situations. Additionally, six months before elections incumbent politicians cannot adopt revision of salaries and payments of public employees to a level superior to the inflation rates of the ongoing election year.[9]

The ER reduced term limits by authorizing the reelection of officials from the Executive for one consecutive term, which has probably enhanced electoral accountability in Brazil. As Besley and Case (1995) put it, it is expected that incumbents care more about their reputation if they are eligible to run for a second mandate. In turn, incumbents who intend to run for reelection are expected to be more accountable and to adopt fiscal policies that maximize voters' preferences. In this sense, the mayoral elections held in 2000 can be viewed as a turning point in the country's political competition at the local level, being the first time in which reelection of mayors became possible in Brazil after redemocratization.[10]

The LRF imposed restrictions on the fiscal management of all government levels, especially restricting deficit-making policies. For example, it defined limits to the share of personnel expenditures over net current revenues.[11] Besides, it introduced new rules regarding transparency, control and monitoring of fiscal activity, providing voters with more information and capability to evaluate the fiscal performance of governments.

If the permission to run for reelection enhances electoral accountability and the restrictions on the management of fiscal policies reduce politicians' means for conducting budget deficits and electoral year increases in expenditures, it is probable that these laws reduced the magnitude of opportunistic fiscal deficits in Brazil. However, this does not mean

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[9] The sanctions applied to those who do not follow these rules are strong, varying from financial penalties to the revocation of the right to run for reelection.

[10] The state and national elections held in 1998 were the first in which governors and the President were allowed to run for reelection. The period of redemocratization starts with the end of the military regime in 1985 and is consolidated with the new democratic Constitution of 1988.

[11] The LRF imposed the following cap limits on the share of personnel expenditures over net current revenues for each government level: 50% for the Union, 60% for the states and 60% for the municipalities.

that they ended fiscal opportunism completely. As Drazen and Eslava (2010) suggest, politicians may engage in opportunistic fiscal policies by changing the composition of the budget without increasing total expenditures or promoting deficits, especially in a world of fiscally conservative voters (i.e. voters who dislike deficits or overall increase in government spending), but who have a taste for targeted expenditures.

III. Literature Review

According to Alesina and Roubini (1992), the models of political cycles are divided into two main categories: opportunistic and partisan cycles.[12] On the original opportunistic models (NORDHAUS, 1975; LINDBECK, 1976), politicians seek to maximise their popularity and reelection chances through pursuing expansionary policies during electoral periods, usually followed by contractionary policies afterwards. The first partisan models (HIBBS, 1977) proposed that the presence of different policy preferences amongst the electorate motivates the emergence of different parties to represent these preferences. As a consequence, the shape of fiscal policies reflects the preferences of the ruling party.

While these early models have assumed myopic voters, whose perceptions over policies could be constantly managed and manipulated by opportunistic politicians at every election, further theoretical works on PFC have relaxed this assumption by adding the concept of rational expectations both to opportunistic (PERSSON; TABELLINI, 1990; ROGOFF, 1990; ROGOFF; SIBERT, 1988) and partisan models (ALESINA, 1987). In the rational expectations models, voters have the ability to partially learn from past elections and observe governments' performance and thus update their beliefs about any given incumbent's ability, punishing or rewarding them in following elections (ALESINA; ROUBINI, 1992).

If most of the conceptual problems found in the early monetary-based approaches (as seen in the Introduction) were solved by fiscally-based rational expectation models (DRAZEN; ESLAVA, 2003), evidence have yet been quite mixed. First, while some studies have found significant pre-electoral expansion in aggregate spending and/or a deterioration of

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[12] The first works on political business cycles (PBC) are credited to Kramer (1971), Nordhaus (1975), Tufte (1975), Lindbeck (1976), Fair (1978) – among others – who focused on cycles on monetary (macro) variables. Subsequent studies have switched attention to political cycles on fiscal variables, being the works of Rogoff and Sibert (1988), Rogoff (1990) and Peltzman (1992) the main initial references. Drazen (2000) suggests mixing both monetary and fiscal policies in his *active-fiscal, passive-monetary* model of opportunistic PBC. For good reviews on the PBC literature, refer to Drazen (2000), Drazen and Eslava (2003) and Franzese and Jusko (2006).

the budget balance (AMORIM NETO; BORSANI, 2004; BARBERIA; AVELINO, 2011; BRENDER; DRAZEN, 2005; SHI; SVENSSON, 2003; VEIGA; VEIGA, 2007), a greater number of works have rejected opportunistic increases in aggregate fiscal policy, but found pre-electoral increases in *certain types* of expenditures, especially those with greater visibility to the electorate (ALESINA; ROUBINI, 1992; DRAZEN; ESLAVA, 2005; VEIGA; VEIGA, 2007)[13]. Second, many studies looking at how voters respond to fiscal policies have shown that voters are fiscal conservatives, punishing incumbents who promote high levels of deficits (ARVATE; AVELINO; TAVARES, 2009; BRENDER, 2003; BRENDER; DRAZEN, 2008; DRAZEN; ESLAVA, 2005; PELTZMAN; 1992). These two facts together bring into question the core idea of opportunistic PFCs, i.e. opportunistic, rational incumbents are expected to promote expansionary fiscal policies during electoral periods in order to enhance their reelection chances, and such fiscal behaviour is rewarded by voters. In fact, the most recent studies of political fiscal cycles view voters as being fiscal conservatives (i.e. voters dislike deficits or overall increases in total expenditures), but having preferences for increased spending in some areas. In this case, politicians and parties seek to satisfy the mix of preferences that maximize their chances of reelection without the need to increase overall spending and as a consequence incur in undesirable fiscal deficits. According to this perspective, political fiscal cycles can take place via a change in the composition of spending while total spending is unchanged (DRAZEN; ESLAVA, 2010).

3.2. Does the permission to run for reelection affect fiscal policy?

None of the studies mentioned above have properly discussed whether the permission to run for reelection affects fiscal policy, especially as elections get closer. Some few works have provided partial answers to this question: Rosenberg (1992), Besley and Case (1995), Meneguin e Bugarin (2001) and Nakaguma e Bender (2006).

Rosenberg (1992) develops and tests a model in which a PFC depends on the incumbent's probability of reelection. In his model, the decision to run for reelection is based on three things: the direct and indirect benefits (utility) derived by the incumbent from the current and the second mandate's budget (e.g. salary and transfers from interest groups), the utility derived from alternative income in the private sector, and the probability of reelection.

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[13] For a great review of the empirical and theoretical literature on political cycles up to year 2000, refer to Drazen (2000).

His model suggests that uncertainty about the outcome of elections, especially if the probability of reelection is low, reduces the chances for the incumbent to derive utility from the second mandate's expenditures. Therefore, an incumbent whose reelection chances are low may decide not to run and derive all the utility only from the current term. As a consequence, Rosenberg's model predicts that incumbents who *do not* run for reelection present a *greater* budgetary deviation in the pre-election period than a comparable incumbent who runs for reelection, since only the first term generates utility for a non-running incumbent. He tests his theoretical predictions using data for development expenditures for 10 cities in Israel between 1964 and 1982 and show that the election year expenditure deviation for non-runners are four times greater than for those who run for reelection, although all incumbents (runners and non-runners) spend more in election periods.[14]

The study of Besley and Case (1995) is also a theoretical and empirical work addressing the question as to whether the permission to run for reelection has any effects on fiscal policy. They develop a model in which incumbents put effort in building their reputation by providing policies that voters care about, where such effort depends on the possibility of running for office again. The idea is that incumbents care more about their reputation if they are eligible to run for a second mandate. The main proposition that stands out from their model is that when two (or more) terms are allowed, incumbents who give higher first-term payoffs to voters have higher chances of being reelected. When reelection is not allowed, then incumbents in their last term put in less effort and give lower payoffs to voters, on average, compared with their first term in office[15]. They provide empirical evidence on the effect of term limits on taxes, expenditures, wages and workers' compensation for the 48 U.S. states from 1950 to 1986[16]. Their results point to a positive and significant effect of term limits on sales taxes, income taxes, and per capita expenditures, suggesting that governors who cannot stand for reelection tax and spend more during their whole mandate[17]. They also find that governors facing term limits reduce the levels of state minimum wages, while the effects on corporate tax, total taxes and compensations to workers are weaker and

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[14] Given the long panel with few observations (T > N), the estimations in Rosenberg probably present strong serial correlation, a problem ignored by the author. For a detailed discussion on the main causes of serial correlation in a Difference-in –Differences (DD) estimation, refer to Bertrand *et al.* (2004)

[15] According to their theoretical and empirical explanations, higher spending per capita is viewed as promoting lower pay-offs to voters. In footnote 11, the authors agree that such view is very pessimistic, since it suggests that American voters find government spending as valueless. However, there is evidence that corroborates this view (PELTZMAN, 1992).

[16] The same problems raised in footnote 14 apply here, although the authors partially controlled the problem by including state and year effects.

[17] The authors check public revenues and spending separately, not analysing the effects of reelection permission on budget balances.

less robust. Besides checking how reelection eligibility affects the fiscal and economic policies across the mandates of first and second term incumbents, Besley and Case (1995) also explore if these policies change as elections get closer. Overall, they do not find an electoral fiscal cycle for each of the two groups of governors, although they find a difference in levels of taxation and spending between these two groups for their whole term, where governors in their second (and last) term tax and spend more than those in their first term in all years. They argue that such finding is consistent with the idea that governors in their second term care less about building a reputation for the future, which shows parallels with Rosenberg's work.

Meneguin e Bugarin (2001) test a hypothesis similar to Rosenberg's (1992), in which electoral year spending is expected to be lower for incumbents with high chances of reelection. They analyse the elections held in 1994 for the 27 state governors in Brazil, running a simple cross-sectional regression in which the main variable of interest is a dummy receiving the value of 1 if the incumbent's party or coalition was reelected in the 1994 elections, and 0 if not, while the dependent variable is the log of total expenditures in this same electoral year. Their results suggest that the reelection dummy is negative on the electoral year spending, meaning that reelected governors present lower levels of total spending.

While Meneguin e Bugarin (2001) "scratch the surface" about how reelection affects fiscal policies in Brazilian state elections, Nakaguma e Bender (2006) develop a more complete and robust analysis, checking whether the institutional changes promoted by the Reelection Amendment (ER) and the Law of Fiscal Accountability (LRF) have affected the magnitude of state-level PFC. Their results show that the decision to run for reelection positively affects current revenues, credit operations, current expenses, and spending on education and transport. However, they do not find a statistically significant effect of reelection on total spending, total revenues and on budget balance. They also test the presence of electoral cycles on fiscal variables, checking the effects of pre-, post- and electoral year dummies. Their results point to the presence of PFC, especially on the spending side. However, they do not interact these time dummies with the reelection variable, not answering the question if reelection runners are more opportunistic than non-runners.

Worth pointing out is that these works have given different empirical treatments to the "reelection" variable. Sometimes reelection is measured as the decision to run, as in Rosenberg (1992) and Nakaguma e Bender (2006), others as the probability of winning, as in

Meneguin e Bugarin (2001), while others as the permission to run, as in Besley and Case (1995). Moreover, the specifications are either confusing or incorrect. In Rosenberg (1992), it is not clear whether the group of non-runners include both first term incumbents who give up running and second term incumbents who cannot run. In Meneguin e Bugarin (2001), they use the real reelection outcome as a proxy for reelection probability. By doing so, they incur in a serious specification error in which a variable in the future (i.e. the incumbent's party or coalition being reelected or not) causes a variable today (i.e. the fiscal decision).[18] With this specification, they ignore the fact that reelection is uncertain and dependent of fiscal choices (indeed, many incumbents fail to be reelected). In Nakaguma e Bender (2006), they look only at differences between reelection runners and non-runners, not distinguishing, among the non-runners, those who can and those who cannot run for reelection.

Despite the empirical problems outlined above, those studies share a common idea: the legal permission and the real chances of reelection are associated with "better" fiscal policies, i.e. policies that are less expansionary and deficitary.[19]

In sum, the studies above have provided at most incomplete empirical answers to the question of whether the permission to run for reelection affects fiscal policy during elections. The present study contributes to such discussion by comparing differences in the fiscal behaviour of first term and second term mayors during electoral periods in Brazil.

IV. Data and Descriptive Statistics

The electoral data used in this study were obtained from the Superior Electoral Tribunal[20], while municipal fiscal data were taken from the Secretary of National Treasury[21] and demographic and economic data from the Brazilian Institute of Geography and

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[18] Besides this specification error in which the explanatory variable "tomorrow" affects the dependent variable "today", their results should be taken with cautious, since they are based on a single-cross section of a small number of observations (n = 27), and within these, only 6 observations were "reelected", which is not enough evidence to conclude that there are any significant group distinctions.

[19] Nakaguma e Bender (2006) raise the possibility that reelection has a dual effect on fiscal policy: in one way, reelection enhances opportunistic fiscal cycles by reelection runners who can individually benefit from a second mandate; but as the permission for reelection enhances the electoral effects of today's fiscal policies, voters have a strong instrument to punish or reward the fiscal choices of incumbents, which is aligned with the electoral control literature (see, for example, Barro, 1973 and Ferejohn, 1986).

[20] www.tse.gov.br

[21] www.stn.fazenda.gov.br

Statistics[22]. All fiscal variables are in real per capita terms, in Brazilian currency units (Real—R$) at 2008 prices[23]. The sample consists of an eight year panel (2001-2008) of 3,393 Brazilian municipalities, which represents 61% of the 5,565 municipalities.[24]

To motivate an initial empirical analysis about how the permission to run for reelection affects fiscal policy at the municipal level in Brazil, the graphics below are a good starting point. Graphics 1 through 3 show the average per capita values of total revenues, total spending and budget balance for first term and second term mayors for each year of the panel. The graphics depict the curves along two municipal mandates (2001-2004 and 2005-2008), in which 2004 and 2008 are the electoral years.

The first two graphics show that revenues and spending have had a substantial real growth along these years for both first term and second term mayors, except for the year 2003. In fact, only in 2003 the average budget balance was negative (Graphic 3)[25]. The almost convex increase in revenues and spending for all years does not provide much support for the PFC hypothesis, i.e. more loose fiscal policies should be observed during electoral years, subsequently followed by tighter policies after elections.

As for differences between first term and second term mayors, it seems that first term mayors present somehow lower total revenues and spending for all years, although their budget balance appears to be higher in electoral years. This may be indicative evidence of higher concerns on the part of first term mayors over the electoral effects related to the quality of their fiscal management.

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[22] www.ibge.gov.br

[23] This adjustment was based on the accumulated inflation between 2001 and 2008 using the IPCA inflation index (Wholesale Consumer Price Index), obtained from the IPEA Data (Institute of Applied Economic Research) at www.ipeadata.gov.br

[24] Due to data unavailability for important variables in this study, the remaining 2,167 municipalities had to be excluded from the sample. This exclusion may generate a sample bias if quality and consistency of fiscal reporting is an attribute of the "best" local administrations. In this sense, the true effects of fiscal opportunism might be different than those found here. For instance, the excluded municipalities might present worse fiscal conditions than those in the present sample.

[25] Between 2002 and 2003 Brazil faced a vigorous political competition for the Presidential electoral race between Lula (Labour Party, PT) and José Serra (Social Democratic Party, PSDB), marked by some reasonable degree of economic instability.
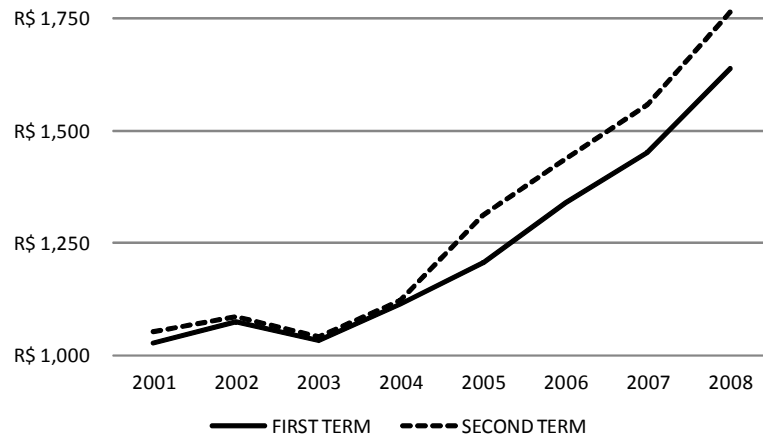
Graphic 1 - Average Total Revenues per Capita
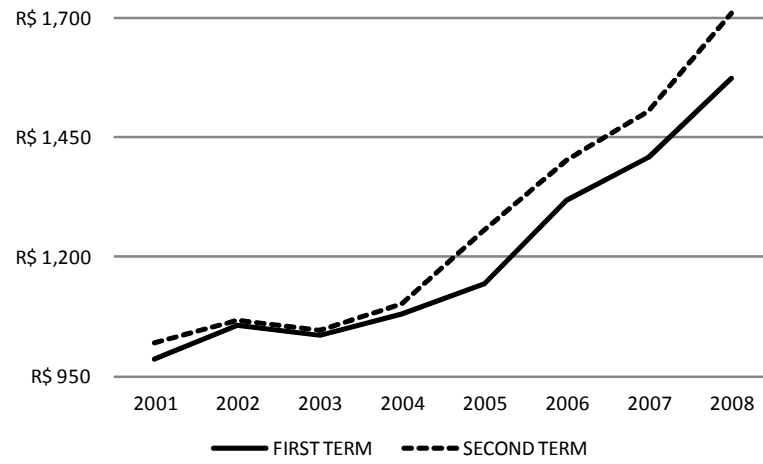
Graphic 2 - Average Total Spending per Capita
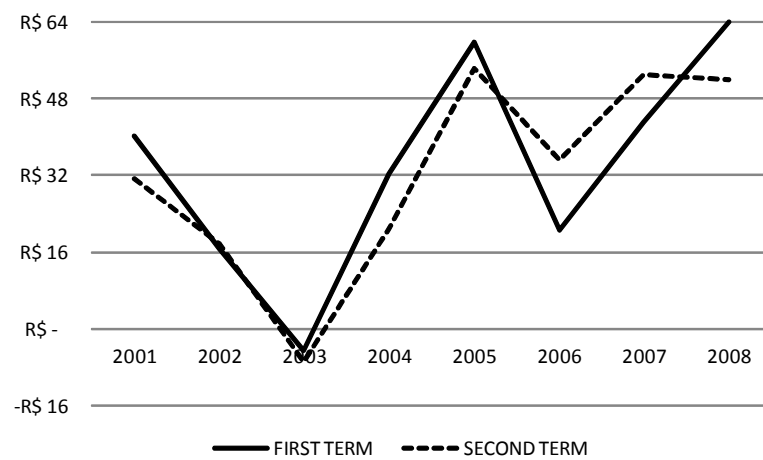
Graphic 3 - Average Budget Balance per Capita

In order to check whether these figures are statistically significant, let us refer to Table 1. This table provides t-tests for the difference in means in fiscal variables between electoral and non-electoral years (columns A and B) and first term and second term mayors (columns C and D) for all years in the panel, so that each value represents the mean value for the whole period (2001-2008). Additionally, it provides tests for the difference-in-differences (DD) in fiscal variables between the treatment and control groups (columns E and F).

Columns A and B of Table 1 show that there is a positive and significant difference between the electoral and non-electoral years for *all* fiscal variables. Although this might suggest fiscal differences related to the electoral cycle, it confirms what the graphics have shown: revenues have increased along all these years, and so had spending and the budget balance. Probably more than the effects of electoral incentives, these results may reflect the increasing growth of economic activity in Brazil between 2001 and 2008 which have probably promoted positive changes in fiscal revenues and balances.[26]

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[26] Between 2001 and 2008, real GDP in Brazil has experienced an average annual growth rate of 3.64%. These figures were even higher for the 2004 and 2008 electoral years: 5.7% and 5.1% respectively.

TABLE 1 - Mean Differences in Fiscal Variables for First Term and Second Term Mayors (2001-2008)

Fiscal Variables	Electoral Year (A)		Non Electoral Years (B)		Difference (A - B)	First Term Mayors (C)		Second Term Mayors (D)		Difference (C - D)	Treatment Group (A x C) (E)		Control Groups (AxD; BxC; BxD) (F)		Difference (E - F)
	Obs	Mean	Obs	Mean	Diff	Obs	Mean	Obs	Mean	Diff	Obs	Mean	Obs	Mean	Diff
Total Revenues (TR)	6,786	1,391.9	20,358	1,213.4	178.5 ***	19,068	1,262.2	8,076	1,248.3	13.9	4,767	1,399.6	22,377	1,227.9	171.7 ***
Tax Revenues	6,786	92.2	20,358	79.8	12.4 ***	19,068	82.7	8,076	83.5	-0.8	4,767	91.7	22,377	81.1	10.6 ***
Current Transfers Grants	6,786	28.7	16,965	23.6	5.1 ***	16,902	25.2	6,849	24.7	0.5	4,767	29.2	18,984	24.0	5.2 ***
Capital Transfers Grants	6,786	46.5	16,965	33.6	12.9 ***	16,902	37.1	6,849	37.7	-0.6	4,767	47.9	18,984	34.6	13.3 ***
Total Spending (TS)	6,786	1,347.1	20,358	1,184.0	163.1 ***	19,068	1,226.9	8,076	1,219.6	7.4	4,767	1,349.9	22,377	1,198.1	151.8 ***
Current Expenditures	6,786	1,145.9	20,358	1,025.9	120.0 ***	19,068	1,064.2	8,076	1,036.5	27.7 **	4,767	1,153.5	22,377	1,035.1	118.3 ***
Capital Expenditures	6,786	201.2	20,358	158.0	43.1 ***	19,068	162.8	8,076	183.1	-20.3 ***	4,767	196.4	22,377	162.9	33.5 ***
Personel Expenditures	6,786	571.6	20,358	505.7	65.9 ***	19,068	528.0	8,076	508.5	19.5 ***	4,767	577.3	22,377	510.4	66.9 ***
Capital Investments	6,786	177.3	20,358	136.0	41.3 ***	19,068	140.3	8,076	160.5	-20.2 ***	4,767	172.4	22,377	140.7	31.7 ***
Budget Balance (TR - TS)	6,786	44.8	20,358	29.4	15.3 ***	19,068	35.2	8,076	28.7	6.5 ***	4,767	49.7	22,377	29.8	19.9 ***

Means are expressed in per capita Reais (R$), at 2008 prices using the IPCA inflation index

Columns A and B show the mean difference in fiscal variables between electoral and non-electoral years for both first term and second term mayors (i.e. time effect)

Columns C and D show the mean difference in fiscal variables between first term and second term mayors for all years in the panel (i.e. individual effect)

Columns E and F show the mean difference in fiscal variables between first term mayors in electoral years and first term and second term mayors in both electoral and non-electoral years (i.e. time and individual effects)

*** 1% significance level; ** 5% significance level; * 10% significance level

Columns C and D show that differences in total revenues and spending between first term and second term mayors are positive in favour of the former, although not significant. Thus, the differences displayed by the curves in graphics 1 and 2 are not confirmed statistically. Concerning differences in the budget balance, they are positive and significant in favour of first term mayors, similarly to what is shown in graphic 3. Additionally, the tests indicate that first term mayors seem to have lower mean values of capital expenditures and capital investments, while higher values for current expenditures and personnel expenditures. Remember that these refer to the mean values for the whole period (2001-2008), thus not capturing group differences between electoral and non-electoral years.

Columns E and F show that there is a positive and significant difference between the treatment group (first term mayors in electoral years) and the control group (first term mayors in non-electoral years and second term mayors in both electoral and non-electoral years) for *all* fiscal variables, suggesting that the degree of fiscal opportunism might be related to individual reelection incentives.

Table 2 provides t-tests for the difference in means in all control variables to be used in this paper between first term and second term mayors for all years in the panel. From this table, we see that first term and second term mayors seem to differ in all political control variables, although no significant difference is observed for the share of current transfers, population and real GDP per capita. Thus, it is important that such variables are controlled for in the regressions, especially if they are correlated with the dependent fiscal variables.

Considering that Table 1 presents only univariate tests of mean differences in fiscal variables, not controlling for other variables that might affect fiscal behaviour or other time and individual effects, its results should be taken with caution. A more complete and robust analysis is provided in the next section.

**TABLE 2 - Mean Differences in Control Variables
for First Term and Second Term Mayors (2001 - 2008)**

Control Variables	First Term Mayors (A)		Second Term Mayors (B)		Difference (A - B)
	Obs	Mean	Obs	Mean	Diff
Current Transfers / Total Revenues (%)	19,068	82.90%	8,076	82.80%	0.1%
Total Votes	19,068	9,553	8,076	10,774	-1,221 **
Share of votes (%)	19,068	53.9%	8,076	58.1%	-4.1% ***
Fractionalization index	19,068	0.53	8,076	0.49	0.03 ***
Mayor same party Governor (1st half)	19,068	23.3%	8,076	31.1%	-7.8% ***
Mayor same party President (1st half)	19,068	11.6%	8,076	16.4%	-4.8% ***
Mayor same party Governor (2nd half)	19,068	20.0%	8,076	25.3%	-5.3% ***
Mayor same party President (2nd half)	19,068	7.1%	8,076	4.3%	2.8% ***
Population (total)	19,068	39,263	8,076	40,966	-1,702
Real GDP per capita	19,068	R$ 10,231	8,076	R$ 10,249	-R$ 19

*** 1% significance level; ** 5% significance level; * 10% significance level

V. Empirical Strategy

This study follows the work of Besley and Case (1995) by testing the effects of term limits on fiscal behaviour, but with an emphasis on the electoral year.[27] It does not address fiscal differences related to the *individual decision* to run, but only to the *permission to* run. Here, first term mayors who are eligible to run for reelection, but choose not to do so, are still assigned as treated.

There is a good methodological reason for looking only at the permission to run for reelection rather than going further into looking at the decision to run. While the permission to run for reelection is mostly an exogenous rule, the decision to run is clearly an endogenous choice of politicians. Thus, a regression of fiscal variables on the decision to run for reelection would not be free from self-selection bias. This self-selection might well depend on fiscal variables (so that causality may go, at least in part, from fiscal policy to the decision to run, and not the opposite way) and also on other unobservable variables, producing biased estimates. The usual way to deal with the endogeneity present in the decision to run is to apply treatment effects econometric models where the endogeneous treatment variable is controlled through the use of instrumental variables (IV). Unfortunately, finding appropriate instruments to circumvent the endogeneity present on the individual choice of running for reelection is no easy task. Hopefully, this challenge should be overcome by future work.

5.1. Difference-in-Differences (DD)

To test the presence and magnitude of an opportunistic fiscal cycle in Brazil, this paper relies on a Difference-in-Differences (DD) econometric approach. The DD estimate combines both time and individual effects in order to identify differences in outcomes before and after a program intervention for individuals affected by the program (treatment group) to the same difference for unaffected individuals (control group). The greatest advantages of using DD estimation come from its simplicity and its potential to circumvent problems of endogeneity that typically arise in comparisons between heterogeneous individuals (BERTRAND *et al*, 2004). Thus, DD estimates are valid under the assumption that the treatment is randomly assigned.

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[27] Ferraz and Finan (2010) addressed the effects of term limits on Brazilian mayors' political corruption. Their results suggest that Brazilian mayors in their first term are less corrupt than those in their second and last term.

For the present study, the two individual groups are *first term mayors* (who are eligible to run for reelection) and *second term mayors* (who cannot run for reelection), while the two time-periods are electoral and non-electoral years. Thus, a completely treated individual is a first term mayor observed in an electoral year.

To the present case, the DD effects of term limits on the fiscal variables along electoral and non-electoral years can be modelled according to the following linear panel model[28]:

$$FV_{it} = \alpha_i + \beta_1 ELEC_t + \beta_2 TERM_i + \beta_3 ELEC_t * TERM_i + \delta_1 T + X'_{it} \beta_x + \varepsilon_{it} \qquad (1)$$

where the dependent variable FV_{it} is the natural log of a fiscal variable observed for municipality i in year t[29], α_i is an individual (municipal) effect that can be either random or fixed, $ELEC_t$ is a time dummy equal to 1 in the electoral year and 0 othwerwise, $TERM_i$ is a an individual dummy equal to 1 if the mayor is in his first term and 0 if he is in his second term (so that it identifies which mayors are eligible to run for reelection and which are not)[30], T is a linear time trend accouting for a potential upward trend in FV_{it} as suggested by Graphics 1 and 2[31], and ε_{it} is the idiosyncratic error.

The fourth term in (1), given by the interaction $ELEC_t * TERM_i$, is the main variable of interest in this study. It equals 1 when the time is an election year *and* the mayor is in his first term, and 0 otherwise. Thus, β_3 identifies the treatment (DD) effect.

To see how, first assume no correlation between the treatment, the covariates and the error term (zero conditional mean):

$$E\left(\varepsilon_{it} / ELEC, TERM, ELEC * TERM, X\right) = 0 \qquad (2)$$

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[28] For detailed explanations of how the DD method can be modelled as a linear regression similar to (1), please refer to Lee (2005).

[29] All fiscal variables are expressed in logs, except by Budget Balance, which is expressed in levels, since it can take negative values for which the natural log cannot be computed.

[30] The construction of the dummy variable *TERM* (identifying either a first term mayor or a second term mayor) was based on the results of the municipal elections of 2000, 2004 and 2008. With these results, it was possible to apply the correct treatment (*TERM* = 1 or 0) for each of the incumbent mayors along the four year mandates analysed henceforth (2001-2004 and 2005-2008 mandates). In the period 2001-2004, 63.8% of the 3,393 mayors were at their first term, while for the period 2005-2008, there were 76.6% first term mayors.

[31] It is thus expected that $\delta_1 > 0$, pointing to a positive average annual growth rate in FV_{it} for the sample period. This time variable is coded as T = 1 for 2001, T = 2 for 2002, ..., T = 8 for 2008.

Now, let us observe the conditioned expected values of the dependent variable on each of the possible values for *ELEC* and *TERM*:

$$\text{(i) } E\left(FV_{it} \,/\, ELEC = 1, TERM = 1\right) = \alpha_i + \beta_1 + \beta_2 + \beta_3 + \beta_x E(X'_{it})$$

$$\text{(ii) } E\left(FV_{it} \,/\, ELEC = 0, TERM = 1\right) = \alpha_i + \beta_2 + \beta_x E(X'_{it})$$

$$\text{(iii) } E\left(FV_{it} \,/\, ELEC = 1, TERM = 0\right) = \alpha_i + \beta_1 + \beta_x E(X'_{it})$$

$$\text{(iv) } E\left(FV_{it} \,/\, ELEC = 0, TERM = 0\right) = \alpha_i + \beta_x E(X'_{it})$$

If we subtract equation (ii) from (i), we get the estimator of the difference in fiscal variable between an electoral year (*ELEC* = 1) and a non-electoral year (*ELEC* = 0) for the treatment group of first term mayors (*TERM* = 1):

$$\text{(v) } E\left(FV_{i1} - FV_{i0} \,/\, TERM = 1\right) = \beta_1 + \beta_3$$

Equation (v) resembles the so called average treatment effect on the treated (ATT), since here the electoral opportunism on the fiscal variable is being observed for the group of first term mayors who are granted the chance to participate on the treatment by running for reelection in the electoral year. Given the electoral incentives for first term mayors as pointed by the PFC literature, we expect a positive difference on (v) for spending related variables, so that $E\left(FV_{i1} - FV_{i0} \,/\, TERM = 1\right) > 0$.

If we subtract equation (iv) from (iii), we get the estimator of the difference in fiscal variable between an electoral year (*ELEC* = 1) and a non-electoral year (*ELEC* = 0) for the control group of second term mayors (*TERM* = 0):

$$\text{(vi) } E\left(FV_{i1} - FV_{i0} \,/\, TERM = 0\right) = \beta_1$$

Equation (vi) shows the difference in the fiscal variable for the group of second term mayors who *are not* eligible for reelection and thus cannot participate on the treatment given in the electoral year. Because second term mayors usually lack the electoral incentives related to reelection, it is hard to make any strong hypothesis coming from the PFC literature regarding the sign of equation (vi), unless other explanations are in play, as already pointed in the Introduction and Section III. Thus, it could be that $E(FV_{i1} - FV_{i0} / TERM = 0) > 0$ for spending related variables even when second term mayors cannot run for reelection.

Finally, by subtracting equation (vi) from (v), we get the DD estimator for the difference in fiscal variable between first term and second term mayors over the electoral and non-electoral periods:

$$DD = E(FV_{i1} - FV_{i0} / TERM = 1) - E(FV_{i1} - FV_{i0} / TERM = 0) = \beta_3 \qquad (3)$$

Under the assumption that the above linear model has external validity for the whole population of Brazilian municipalities, the DD in equation (3) identifies the treatment effect for first term mayors during electoral years, with sign and magnitude given by β_3.[32] According to the main PFC hypotheses, it is expected that $\beta_3 > 0$ for expenditure variables (on average, first term mayors increase public spending during electoral years more than second term mayors) and $\beta_3 < 0$ for revenues variables (on average, first term mayors reduce taxation and collection during electoral years more than second term mayors). Given higher spending and lower revenues, it is expected that $\beta_3 < 0$ for budget balance.

It is important to emphasize that DD estimations with panel data can suffer from serial correlation problems. In a review of empirical studies which have used DD estimation, Bertrand *et al* (2004) show that out of the 92 papers surveyed, 65 suffered from potential serial correlation, whereas only 5 papers explicitly dealt with it. They argue that serial correlation becomes a special issue in most DD estimations for three main reasons: first, the typical use of long time series; second, the use of dependent variables which are highly positively serially correlated; and third, the fact that the treatment variable (i.e. an individual

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[32] In most DD applications, a group of individuals receive a treatment only in the second period, while another group (the control group) is never treated in both periods. In the present study, the treatment condition does not change within a mandate, even before or after the electoral year, since each municipality is always treated (first term) or untreated (second term) along a four years mandate. On the other hand, municipalities can be assigned different treatment conditions between the 2001-2004 and the 2005-2008 mandates, whenever a first term mayor in 2001-2004 runs for reelection and wins, or when the mayor is in his second term in 2001-2004.

receiving the intervention in period 2) changes little within a state over time. The authors investigate various techniques to solve serial correlation under DD estimations and point to the *pros* and *cons* of each. Along their analysis, they suggest the combination of DD models with more efficient techniques that explicitly deal with serial correlation, such as GLS (generalized least squares) or GMM (generalized method of moments) estimation of dynamic panel data models. Among the tested techniques, the authors show that estimating a variance-covariance matrix of the error term is a feasible and efficient solution for large samples. They show that this solution works well for both a homogenous autocorrelation process between states over time under homoskedastic errors as well as under any serial correlation pattern with heteroskedastic errors.

Following the recommendations of Bertrand et al (2004), we apply a DD approach using both pooled OLS (ordinary least squares) and GLS RE (generalized least squares with random effects) estimations all clustered at the municipal level and compare the results for robustness check. The combination of a DD approach with a GLS RE estimation should be particularly efficient in the present study, given its data characteristics. First, it consists of a strongly balanced and very large sample size (3,393 municipalities) with a relatively short time series (8 years), which should reduce serial correlation. Second, the treatment variable (first term mayors in the election year) is not so static over time both within and between municipalities. For example, the exact same individual mayor is analysed under two different situations for 23.3% of the municipalities: mayor is in his first term in the 2001-2004 mandate, but in his second term in the 2005-2008 mandate, corresponding to first term mayors who got reelected in the 2004 elections.[33] For those municipalities with second term mayors in the 2001-2004 mandate (36.2% of the cases), their mayor's status necessarily changed from second term to first term in the following 2005-2008 mandate. Thus, there is a considerable change of treatment status along the period both within and between municipalities in electoral years. Finally, given the short panel structure of the data (N is large relative to T), cluster-robust standard errors with clustering at the municipal level are used for the variance-covariance matrix of the estimators, which should help circumvent both a

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[33] For the 2001-2004 mandate, 63.8% of the municipalities had first term mayors, from which 62.4% ran for reelection in 2004, and of these 58.7% got reelected. For the 2005-2008 mandate, 76.6% of the municipalities had first term mayors, from which 71.35% ran for reelection in 2008, and of these 70.25% got reelected.

problem of heteroskedasticity of the error across municipalities and a serial correlation of the error term within municipalities.[34]

Note that fixed-effects (FE) estimations is not too suited for the present study, although it has the great appeal of eliminating observable and non-observable time-constant municipal variables. The reason for not running FE regressions is because the *TERM* dummy accounting for reelection eligibility is constant across the four years of a mayoral mandate, and so would be discarded in a fixed-effect estimation (if we look at the mandates separately). For the 1,374 municipalities who experienced first term mayors in both mandates (2001-2004 and 2005-2008), which represent 40.4% of the sample, the *TERM* dummy would be completely dropped. For such observations, the DD effect as captured by the interaction *ELEC*TERM* would be confounded with the time effect of the dummy *ELEC*, and would simply measure the effect of elections within these municipalities with first term mayors, and not the true DD effect we are interested in. For the remaining 59.6% municipalities who changed mayor status from first to second term mayor and vice-versa, a FE regression of *ELEC*TERM* on *FV* would be capturing the correct within DD effect. Overall, however, summing up the whole sample, a FE estimation would not be correctly measuring the true DD effect due to the dropping of the dummy *TERM*. The same problem holds for a GMM dynamic panel model, such as the well-know Arellano-Bond GMM (A&B) estimation, since it implements a regression in first-differences.[35] Because our main interest relies on testing the fiscal differences between first term and second term mayors, especially during electoral years, we cannot accept the exclusion of the *TERM* dummy whenever running FE or A&B, so these models are not applicable to our purposes.

5.2. Variables Description

Various budget categories for the fiscal dependent variables are analysed in this study:

1. Budget Balance
2. Total Revenues

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[34] For additional discussion on how the GLS RE is a possible solution to serial correlation in a panel data, see Wooldridge (2002). For a greater description of how unbalanced panel data can cause incorrect OLS standard errors in the case of DD estimation, see Lee (2005), who also suggests the GLS RE model as a possible solution.
[35] See Arellano and Bond (1991). Examples of recent papers on PBC that have applied GMM estimations are Sakurai and Menezes-Filho (2011), Barberia and Avelino (2011), Drazen and Eslava (2010), Veiga and Veiga (2007), Nakaguma e Bender (2006) and Brender and Drazen (2005).

3. Total Spending

4. Tax Revenues

5. Current Transfers Grants

6. Capital Transfers Grants

7. Current Expenditures

8. Personnel Expenditures

9. Capital Expenditures

10. Capital Investments

These fiscal variables were chosen based on both their traditional presence over the PFC literature as well as on their relevance for testing opportunistic fiscal cycles at the municipal level in Brazil.

From the list, the variables that have been traditionally analysed by the PFC literature are budget balance, total revenues, total spending, tax revenues, current expenditures and capital expenditures. According to the classical PFC hypothesis (e.g. NORDHAUS, 1975), one should expect a decrease in revenues (especially tax revenues) and an increase in spending during elections, leading to a decrease in fiscal balance. Following the most recent literature, focused on the change in the composition of spending under a fiscal conservative context (e.g. DRAZEN AND ESLAVA, 2010), one should expect increases in those types of expenditures which voters care more about and decreases in those that are found to be less attractive to the electorate, so that overall balance should be kept unchanged.

Besides those traditional fiscal variables, it is also important to consider the presence of fiscal opportunism in transfers grants (current and capital), personnel expenditures and capital investments in Brazil, especially after the new fiscal and electoral legislation implemented over a decade ago (see section II). Transfers from grants, for example, which represent about 5% of the municipalities total revenues, are discretionary transfers based on signed agreements (*convênios*) established between municipalities, the federal states and the Union defining each other's budgetary role over specific policy areas. Even though these grants do not represent a substantive share of total revenues, they play an important role in distinguishing mayors' efforts and capacity in attracting additional funds at low costs to municipalities, which can make a difference during elections.

Capital grants, for instance, are used to exclusively finance capital investments on key policy areas which are commonly credited to mayors, such as education, health and sanitation, environment and transportation. The flow of transfers grants are pretty much dependent on the

mayors' efforts in signing political agreements with other political representatives from higher government levels, and this effort might well be correlated with the mayor being allowed to run for reelection or not.[36]

As for personnel expenditures, which represent about 43% of total spending, it is a key fiscal variable to be considered for tests of opportunistic cycles after the electoral legislation of 1997 and the LRF of 2000 have imposed severe restrictions on the timing and amount of spending on such rubric. These new rules probably limited the ability of mayors of getting votes from delivering "rents" (i.e. personnel expenditures), while probably forced them to look for other alternative means, such as delivering more "policy" (i.e. investments). Hence, we should expect to observe higher electoral effects on capital expenditures and investments than on current and personnel expenditures.[37]

The vector X is a set of control variables accounting for other political, demographic and economic determinants of fiscal policy, and they are: (i) the percentage share of total current transfers over total revenues; (ii) the share of votes obtained by the mayor's party in the last election, as a percentage of total votes; (iii) the index of votes fractionalization in the last election, given by the formula $1 - \sum_j^J v_j^2$, in which v_j is the share of votes obtained by each candidate j running for mayor at municipality i; (iv) a dummy indicating the political alignment between the mayor's and the governor's parties (1st and 2nd half of mayor's mandate); (v) a dummy indicating the political alignment between the mayor's and the president's parties (1st and 2nd half of mayor's mandate); (vi) population of municipality i; and finally, (vii) the municipality's real GDP per capita (at 2008 prices).

The inclusion of each of these control variables are justified on the following grounds. First, the share of current transfers over total revenues provides a measure of the municipality's fiscal autonomy, where higher shares mean less fiscal resources owned and managed by the mayor from which he can promote a political cycle.

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[36] Most of the municipalities' total revenues come from current transfers (around 80%), which are legally determined redistributions and compensations from the states and the Union to municipalities based on the shares and quotas the municipalities have over state and federal tax revenues and on their legal share over the exploitation of natural resources (water, minerals and oil). Therefore, and most of the times, the flow of current transfers are quite exogenous and stable, regardless of mayors' political motivations or electoral conditions (first or second term). In the Brazilian fiscal federalism, mayors' ability to affect revenues is mostly limited to the management of tax revenues (6.5% of total revenues) – especially from taxes on real estate (IPTU) and commercial services (ISS), both administrated locally – and transfers grants (5% of total revenues). Thus, these variables are better suited for testing fiscal opportunism at the local level in Brazil.

[37] Personnel expenditures correspond to about 50% of current expenditures, while capital investments accounts for close to 90% of capital expenditures.

Second, the share of votes is used as a proxy for the parties' local popularity and political strength, where the higher are these shares in the previous election, the more competitive is the party locally, which should reduce the mayor's need of using the political cycle strategy in order to increase his reelection chances.

Third, the well-known fractionalization index from Political Science literature accounts for another measure of local political competitiveness, and is based on the degree of heterogeneity in voters' preferences, where the higher is the index, the more fragmented are these preferences, making it harder for the mayor to define what set or mix of fiscal policies are more electorally effective.

As for the party dummies, it could be that mayors whose parties belong to the governor's and/or President's parties (be it in the first or second half of the mayor's mandate)[38], receive more voluntary transfers and grants from the state and/or federal governments, especially during electoral periods. This "party effect" could be intensified or diminished depending on whether the mayor is in his first or second term.

The inclusion of the size of population is used to account for the degree of accountability by voters. Part of the Political Science literature suggests that the degree of accountability is inversely proportional to the size of the electoral district. The idea is that smaller districts reduce the distance between voters and representatives, which facilitates the flow of information and thus improve accountability. Besides, the weight of each single vote, given by $1/N$, where N = number of voters, is higher in smaller districts (PORTO; PORTO, 2000). Given these two facts, voters in smaller districts should be more sensitive to the mayor's performance and should be more capable of clearly identifying the responsible for the success or failure of any given policy. In other words, the adoption of an opportunistic fiscal cycle strategy should become less effective as the size of districts increase.

Finally, the inclusion of the real GDP per capita is important to account for differences in the level of local economic development between municipalities, which might be correlated with different fiscal policies. Besides, its inclusion is an attempt to control for exogenous economic shocks occurring both between and within municipalities, since it is available for all municipalities for each year of the panel.

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[38] In Brazil, national elections for state and federal deputies, governors, senators and the President are always held at the end of the second year of the mayors' four years term, usually in October.

VI. Results

Difference-in-differences (DD) results from pooled ordinary least squares (OLS) and generalized least squares with random effects (GLS RE) with cluster robust standard errors at the municipal level applied to equation 1 are reported in Tables 3 through 5.

The main variable of interest is the interaction *Electoral Year*First Term*, which identifies the DD estimator of the difference in fiscal variable between first term and second term mayors over the electoral and non-electoral periods (β_3).

Other two important variables capturing the effects of elections and term limits on fiscal policy are *Electoral Year* and *First Term Mayor*. As can be depicted from subsection 5.1, the results for the variable *Electoral Year* correspond to the electoral year difference in fiscal variable for second term mayors (β_1), while the results for the variable *First Term Mayor* identifies the difference in the term's average fiscal variable (non-electoral years) between first term and second term mayors (β_2).

Table 3 presents complete regression results for *Budget Balance*, *Total Revenues* and *Total Spending* on all variables in the model, including the controls. The results point to a negative coefficient on *Electoral Year* in all variables, suggesting that second term mayors present a statistically significant reduction of about 1.7% in both spending and revenues in electoral years. The coefficient on *Budget Balance* is also negative, but statistically insignificant. This suggests that mayors who are not granted the chance to run for reelection do not promote opportunistic increases in spending nor cause a deterioration of the budget balance during elections, as some authors would suggest (ROSENBERG, 1992; BESLEY AND CASE, 1995; MENEGUIN E BUGARIN,2001). On the contrary, second term mayors seem to reduce government collections and expenditures in proportional terms during elections, so that their electoral year budget balance does not substantially differ from those in previous years. All in all, second term mayors appear to adopt a relatively conservative fiscal policy during elections.

Turning to the coefficients on *First Term Mayor*, we see that they present a relatively lower *Total Revenues* and *Total Spending* along the term (non-electoral years) as opposed to second term mayors. Note, however, that the magnitude and significance of the GLS RE coefficients are much lower than those of the OLS estimates, indicating no substantial difference in revenues and spending (statistically or economically) between first term and

second term mayors during the term. Similarly, no significant difference is observed for the term's average *Budget Balance*. In this sense, the results suggest that first term and second term mayors do not behave much differently on their term' average total revenues, spending and budget balance.

If no significant differences is observed between first term and second term mayors during the term's average fiscal policy, the opposite is true when we look at electoral year changes between different mayors. The DD effects as captured by the results for the interaction *Electoral Year*First Term* provide strong evidence in favour of different fiscal behaviours between first term and second term mayors during elections.[39] Looking at the GLS RE estimates, we see that first term mayors present a 2.37% higher change in revenues, a 1.66% higher change in spending and a R$12.20 higher budget balance during elections as compared with second term mayors. This suggests that differences in the permission to run for reelection are an important source of variation in fiscal policies in electoral years, in which the permission to run for reelection is associated with a positive albeit sustainable fiscal opportunism.

These findings corroborate one of the PFC hypotheses stated in section V, for which first term mayors are expected to present higher changes in expenditures during elections, but do not confirm those for which such mayors should present a negative change in revenues and a deterioration of the budget balance. In fact, the results from Table 3 suggest that first term mayors increase revenues to a higher rate that they increase spending, leading to a positive change in the budget balance. Hence, first term mayors are able to deliver higher government expenditures during elections, while at the same time present a more conservative fiscal balance as opposed to second term mayors.

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[39] Note that the DD effects refer to the difference in the electoral year variation in fiscal variables between first term and second term mayors. The electoral year variation for first term mayors exclusively is given by the sum of the results for *Electoral Year* and *Electoral Year*First Term* ($\beta_1 + \beta_3$), as has been demonstrated in Section III.

TABLE 3 - Difference in Differences Regressions for First Term and Second Term Mayors (2001-2008)

Dependent Variable:	Budget Balance (R$)		Total Revenues (log)		Total Spending (log)	
	OLS	GLS RE	OLS	GLS RE	OLS	GLS RE
Electoral Year	-2.5743	-2.4416	-0.0175***	-0.0180***	-0.0170***	-0.0179***
	(3.403)	(3.305)	(0.003)	(0.003)	(0.004)	(0.004)
First Term Mayor	1.8676	2.3206	-0.0211***	-0.0018	-0.0244***	-0.0060**
	(1.683)	(1.584)	(0.005)	(0.002)	(0.005)	(0.002)
Electoral Year * First Term	12.3081***	12.1969***	0.0211***	0.0237***	0.0139***	0.0166***
	(3.893)	(3.792)	(0.004)	(0.004)	(0.004)	(0.004)
Linear Trend Line	3.6738***	3.6758***	0.0590***	0.0656***	0.0570***	0.0632***
	(0.300)	(0.311)	(0.001)	(0.000)	-0.0007	(0.000)
Current Transfers / Total Revenues (log)	-108.6549***	-117.8387***	-0.9087***	-0.5770***	-0.8559***	-0.5201***
	(18.588)	(15.622)	(0.029)	(0.020)	-0.0303	(0.022)
Share of votes (log)	7.7350*	5.9532	0.0706***	0.0169***	0.0693***	0.0181***
	(4.700)	(4.103)	(0.020)	(0.006)	(0.020)	(0.007)
Fractionalization index (log)	-1.4136	-0.864	-0.0076**	-0.0006	-0.0077**	-0.0020*
	(1.157)	(1.152)	(0.004)	(0.001)	(0.004)	(0.001)
Mayor same party Governor (1st half)	1.2861	2.1965	0.002	0.0007	0.0013	0.0004
	(1.764)	(1.783)	(0.007)	(0.002)	(0.007)	(0.003)
Mayor same party President (1st half)	-2.6238	-2.5602	-0.0307***	-0.0147***	-0.0291***	-0.0123***
	(1.943)	(2.110)	(0.009)	(0.004)	(0.009)	(0.004)
Mayor same party Governor (2nd half)	0.7121	0.0285	0.0127*	0.0018	0.0102	-0.0002
	(1.973)	(2.008)	(0.007)	(0.003)	(0.007)	(0.003)
Mayor same party President (2nd half)	6.1902*	7.3021**	0.0818***	0.0329***	0.0783***	0.0241***
	(3.523)	(3.162)	(0.015)	(0.005)	-0.0155	(0.006)
Population (log)	-14.9480***	-15.6160***	-0.2761***	-0.2549***	-0.2735***	-0.2489***
	(1.726)	(1.471)	(0.005)	(0.004)	(0.006)	(0.004)
Real GDP per capita (log)	20.3046***	18.4468***	0.3401***	0.1574***	0.3363***	0.1692***
	(3.476)	(3.032)	(0.010)	(0.005)	(0.010)	(0.005)
Constant	-107.9306**	-79.5486**	5.6439***	7.4108***	5.6745***	7.2563***
	(43.811)	(33.121)	(0.136)	(0.065)	(0.136)	(0.068)
R-squared	0.090	0.095	0.74	0.685	0.71	0.664
N (municipalities x years)	27144	27144	27144	27144	27144	27144
Number of municipalities	3393	3393	3393	3393	3393	3393
F	56.29	na	1834.08	na	1596.26	na

Table presents results from pooled ordinary least squares (OLS) and generalized least squares with random-effects (GLS RE) estimates, with cluster robust standard erros (at the municipal level) shown in parenthesis. All regressions include state dummies.

*** 1% significance level; ** 5% significance level; * 10% significance level

Table 4 shows the regression results for the key revenues variables which are more prone to fiscal opportunism. Looking at the GLS RE coefficients for *Electoral Year* (electoral year difference in fiscal variable for second term mayors), the figures point at a negative and significant electoral year change in *Tax Revenues* (-3.14%) and *Capital Transfers Grants* (-10%), while a positive and significant change is observed for *Current Transfers Grants* (15.69%). These results suggest that even second term mayors behave opportunistically during elections, for example by reducing tax collections at the local level.[40] The positive coefficient on *Current Transfers Grants* may also be related to electoral opportunism, since the electoral year is the mayor's last year in office, and is thus his last chance to "show good service". Therefore, guaranteeing higher current grants is critical for the mayor to cover ongoing expenses of maintenances and services that emerged from past signed agreements between the municipalities and higher government levels. Following a similar line of argument, the negative coefficient on *Capital Transfers Grants* can be explained by the very nature of such agreements, which are used to finance investments on capital goods. Since these types of investments take a longer time to generate visible public goods and services, they do not generate immediate political dividends and returns, thus becoming an unattractive "last minute" investment option for second term mayors who cannot continue these works in the next political term and thus individually take the credit for the final delivery of the service.

Looking at the coefficients for *First Term Mayors*, we see that these mayors enact higher term's average figures for *Tax Revenues* (+1.94%) and *Current Transfers Grants* (+4.6%) along the term in office (non-electoral years) when compared with second term mayors, while no significant difference in the term's average is observed for *Capital Transfers Grants*. These figures suggest that first term mayors put more effort in increasing revenues along the term, especially through those channels that do not generate higher tax burden on local citizens, as the stronger coefficient on current grants suggests.

Turning now to the DD effects captured by the coefficients on *Electoral Year*First Term*, we note the presence of significant differences between first term and second term mayors during electoral years in *Tax Revenues* (-2.15%) and *Capital Transfers Grants* (+17.55%). No significant fiscal difference during elections is observed for *Current Transfers Grants*, meaning that both mayors increase current grants during elections at the same rate of

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[40] The motivations behind the decision of second term mayors to reduce tax revenues in the electoral years can be two-sided: on one hand, it can be that second term mayors interested in making a successor or in running for other political posts reduce local taxation expecting a positive voters' response; on the other hand, it can be that second term mayors reduce tax revenues in an attempt to hurt the next administration by leaving a lower cash balance to the new mayor, who would then be forced to increase tax collection as soon as he took office.

15%. These results suggest that first term mayors reduce local taxation during elections to a greater extent than do second term mayors, while compensate this reduction with substantial increases in other external sources of funds (i.e. current and capital grants). The positive and strong electoral year difference in *Capital Transfers Grants* probably reflects the fact that first term mayors facing the chance to run for reelection have greater incentives for signing such contractual agreements. Because these grants are used to finance capital expenditures and investments, which become visible to voters only after a time lag, first term mayors can credibly take the responsibility for finishing those projects in the next term if reelected, and thus individually take the political credit from such public works.

Overall, the results from Table 4 suggest that first term mayors differ from second term mayors by collecting more revenues from taxes and current transfers grants along the term in office, while during elections they reduce tax revenues and increase capital transfers grants more than second term mayors. In a few words, first term mayors put more effort in key revenues collection along the term, while during elections they reduce local tax revenues and partially compensate it with increases in current and capital grants. These fiscal strategies are aligned with the most recent PFC literature for which incumbents running for reelection spare voters from tax burden during elections (see the negative coefficients on *Tax Revenues*), but at the same time compensate this revenue loss with higher collection efforts in other low cost revenues sources, thus avoiding undesirable and electorally risky fiscal deficits.

TABLE 4 - Difference in Differences Regressions for First Term and Second Term Mayors (2001-2008)
Revenues Variables

Dependent Variable (log):	Tax Revenues		Current Transfers Grants		Capital Transfers Grants	
	OLS	GLS RE	OLS	GLS RE	OLS	GLS RE
Electoral Year	-0.0278***	-0.0314***	0.1553***	0.1569***	-0.1128***	-0.1001**
	(0.008)	(0.008)	(0.030)	(0.031)	(0.039)	(0.040)
First Term Mayor	0.0116	0.0194***	0.0567*	0.0460**	-0.014	-0.0183
	(0.010)	(0.005)	(0.030)	(0.023)	(0.036)	(0.029)
Electoral Year * First Term	-0.0322***	-0.0215**	-0.0169	-0.0193	0.1966***	0.1755***
	(0.009)	(0.009)	(0.036)	(0.036)	(0.046)	(0.048)
R-squared	0.71	0.67	0.11	0.11	0.14	0.14
N	27144	27144	23751	23751	23747	23747
F	1676.23		84.08		82.27	

Table presents results from pooled ordinary least squares (OLS) and generalized least squares with random-effects (GLS RE) estimates, with cluster robust standard erros (at the municipal level) shown in parenthesis. The complete set of control variables are: linear time trend, share of current transfers over total revenues, share of votes in the last elections, fractionalization index in the last elections, political alignment between mayor's and governor's parties (1st and 2nd half of mayor's mandate), political alignment between mayor's and president's parties (1st and 2nd half of mayor's mandate), population and municipal real GDP per capita.

*** 1% significance level; ** 5% significance level; * 10% significance level

Table 5 presents the regression results for key spending variables. Beginning with the results for *Electoral Year*, we see that all coefficients are negative and significant, pointing at a contraction of all types of public expenditures during elections for mayors in their second term. While electoral year reductions in current and personnel expenditures might reflect both the effects of institutional restrictions (see section II) as well as the effects of lower reelection incentives faced by second term mayors, reductions in capital expenditures and investments are mostly explained by the latter (i.e. reelection incentives): second term mayors are less inclined to promote "last minute" increases in investments possibly due to the longer time-lag for such expenditures to generate electoral pay-offs.

Significant differences in the term's average spending between first term and second term mayors are observed for all spending variables, as shown by the coefficients on *First Term*. According to the results, mayors in their first term spend more on public employees and staff along the non-electoral years in comparison with second term mayors, but invest less than the latter.

When it comes to electoral year differences between first term and second term mayors, significant and positive differences are observed for *Current Expenditures* (0.81%), *Capital Expenditures* (+11.18%) and *Capital Investments* (+14.52%), while the variation in *Personnel Expenditures* appears to be insignificant, meaning that both mayors reduce spending on public employees and staff during elections. The figures confirm the hypotheses stated in subsection 5.2, for which a greater degree of fiscal opportunism in capital expenditures and investments was expected than in current personnel expenditures.

TABLE 5 - Difference in Differences Regressions for First Term and Second Term Mayors (2001-2008)
Spending Variables

Dependent Variable (log):	Current Expenditures		Capital Expenditures		Personnel Expenditures		Capital Investments	
	OLS	GLS RE	OLS	GLS RE	OLS	GLS RE	OLS	GLS RE
Electoral Year	-0.0198***	-0.0219***	-0.0412***	-0.0373***	-0.0159***	-0.0172***	-0.0647***	-0.0595***
	(0.003)	(0.003)	(0.013)	(0.013)	(0.004)	(0.004)	(0.016)	(0.017)
First Term Mayor	-0.0081	0.0072***	-0.1383***	-0.1098***	0.0054	0.0176***	-0.1629***	-0.1260***
	(0.005)	(0.002)	(0.011)	(0.008)	(0.006)	(0.003)	(0.013)	(0.010)
Electoral Year * First Term	0.0036	0.0081**	0.1157***	0.1118***	-0.0017	0.002	0.1498***	0.1452***
	(0.004)	(0.004)	(0.015)	(0.015)	(0.004)	(0.005)	(0.019)	(0.019)
R-squared	0.70	0.63	0.43	0.42	0.64	0.61	0.38	0.37
N	27144	27144	27144	27144	27144	27144	27144	27144
F	1493.5		434.2		1133.65		368.3	

Table presents results from pooled ordinary least squares (OLS) and generalized least squares with random-effects (GLS RE) estimates, with cluster robust standard erros (at the municipal level) shown in parenthesis. The complete set of control variables are: linear time trend, share of current transfers over total revenues, share of votes in the last elections, fractionalization index in the last elections, political alignment between mayor's and governor's parties (1st and 2nd half of mayor's mandate), political alignment between mayor's and president's parties (1st and 2nd half of mayor's mandate), population and municipal real GDP per capita.

*** 1% significance level; ** 5% significance level; * 10% significance level

The results from Table 5 indicate that first term mayors, relatively to second term mayors, move fiscal policy away from *Current Expenditures* towards *Capital Expenditures* along the electoral calendar. This movement seems strange at first glance if one looks at the aggregate level, since by doing it, first term mayors direct fiscal policy away from the budget "heavy weights" accounts towards smaller accounting rubrics.[41] But if voters are fiscal conservatives and evaluate incumbents mostly by observing visible public policies and services, especially during elections, (i.e. voters are short sighted), then the decision to switch the composition of spending from less visible (and more burdensome) expenditures to more visible and fiscally sustainable ones is consistent with a politician whose objective function is to maximize his probability of reelection.

The Brazilian electoral legislation is probably an additional institutional mechanism reinforcing this movement from *Personnel Expenditures* towards *Capital Investments*, once it imposes restrictions on electoral year increases in personnel expenditures and other administrative changes affecting staff. Together with the reelection incentives driving fiscal behaviour, this legislation helps explaining the positive and significant results for *Personnel Expenditures* on *First Term Mayor* and the insignificant results on *Electoral Year*First Term*: personnel expenditures during non-electoral years are 1.76% higher for first term mayors than they are for second term mayors, albeit they do not seem to differ during election years. In other words, the combination of reelection incentives with the restrictions imposed by the electoral legislation suggests the following policy-rule: spend more on personnel expenditures along the term, and compensate its legally induced reduction in electoral years with higher capital expenditures and investments.

In sum, the above findings suggest that if any higher opportunistic fiscal policy is present under first term mayors' administrations, it is generally for a fiscally responsible and financially sustainable one: first term mayors change their budget composition by moving from current expenditures towards capital related ones as elections get close, while adjust their revenues losses from taxes with higher revenues from grants, so that budget balance is either unaffected or improved during elections (see the positive coefficient on *Budget Balance* in Table 3). As suggested, this shift from current to capital expenditures along the electoral calendar might be explained by the greater visibility such types of expenditures have over the electorate, as well as by the greatest appeal such longer term investments have over first term

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[41] Between 2001 and 2008, *Current Expenditures* have accounted for about 85% of *Total Spending* (the remaining 15% have come from *Capital Expenditures*), mostly due to *Personnel Expenditures* (43% *Total Spending*), while *Capital Investments* have accounted for only 12% of *Total Spending*

mayors, who may individually benefit from the political returns they generate in the following mandate.

The results also indicate that first term mayors are not necessarily less fiscally responsible than second term mayors along their term in office (non-electoral years). In fact, they seem to collect more transfers and taxes along the mandate than do second term mayors. Regarding public spending, first term mayors seem to compensate their higher personnel expenditures during the mandate with lower levels of capital expenditures, after which such allocation is inversed during elections.

These findings shed a new light to the recent PFC literature based on rational expectations models with fiscal conservative voters: elections with first term and second term mayors seem to promote a competitive feature which appears to enhance fiscal accountability, resulting in a more responsible budget management, especially from the part of first term mayors who face the chance of getting reelected. In this sense, an incumbent may signal his levels of competence or policy preferences during elections by boosting the appropriate funds so as to trigger a positive and sustainable temporary shock in those types of public policies which voters care about, but without affecting the budget balance and thus incurring in undesirable electoral risks.

VII. Conclusions

This article tested the presence and magnitude of opportunistic political fiscal cycles (PFC) in municipal elections in Brazil, by comparing differences in the fiscal behaviour of first term mayors (who are allowed to run for a second mandate) and second term mayors (who are prohibited to run for reelection) during electoral years.

Based on fiscal and electoral data of 3,393 Brazilian municipalities between 2001 and 2008 and on the application of a Difference-in-Differences econometric approach, this research has provided strong evidence in favour of significant electoral fiscal differences between first term and second term mayors. As elections get close, first term mayors change their budget composition by moving from current expenditures towards capital related ones, while adjust their revenues losses from lower taxes with higher revenues from grants, so that budget balance is either unaffected or improved, thus avoiding the electoral risks associated with budget deficits. The results also indicate that first term mayors are not necessarily less

fiscally responsible than second term mayors along their term in office (non-electoral years). In fact, first term mayors seem to put more effort in increasing revenues along the term, especially through those channels that do not generate higher tax burden on local citizens, such as current grants. Regarding public spending, first term mayors seem to compensate their higher personnel expenditures during the mandate with lower levels of capital expenditures and investments, after which such allocation is inversed during elections.

These findings are consistent with recently developed signalling models of PFCs, where incumbents running for reelection change the composition of the budget in electoral years in a fiscally responsible manner, so as to signal his levels of competence or policy preferences to rational, fiscal conservative and heterogeneous voters.

While the literature suggests that the presence of an opportunistic fiscal cycle is usually harmful for the equilibrium of public finances, the results hereby presented indicate that this is not necessarily so, especially when deficits are perceived as electorally dangerous. In fact, the findings in this study point at a potentially positive aspect of opportunistic fiscal cycles at the local level in Brazil, with beneficial consequences for electoral accountability: first term mayors who intend to run for a second mandate must not only signal their competence or policy preferences by providing higher levels of certain types of public goods and services, but also be rigorously accountable regarding the management of public finances. Failures on either of these two sources of political pressure can cause disastrous consequences at the polls, reducing their probability of reelection. In this sense, the results hereby presented are aligned with the view that the permission to run for reelection is a welcomed institutional rule for enhancing electoral accountability. An obvious next step to confirm this view is to investigate whether voters respond positively to such opportunistically targeted, although responsible, fiscal strategies.

Chapter 2 – Do opportunistic mayors have greater reelection chances?

Abstract This study shows that the electoral effects of fiscal policies are closely linked to the legal permission to run for reelection, with first term mayors receiving the greatest electoral benefits from implementing opportunistic policies. During non-electoral years, all mayors and parties, regardless of being eligible for reelection, increase their reelection chances by promoting balanced budgets and higher levels of total revenues, total spending, capital expenditures and investment expenditures. However, only first term mayors seem to benefit from electoral year increases in fiscal variables, with the strongest effects being observed for current expenditures and personnel expenditures. While electoral year changes in local tax revenues or transfers grants do not affect voting patterns, first term mayors slightly increase their reelection chances if promoting higher average collections over the term. The results indicate that voters in Brazil have a general preference for more government revenues and spending, but recognize and reward a sustainable fiscal management. Yet, the fiscal decisions of mayors in Brazil are not totally aligned with voters' fiscal preferences.

I. Introduction

Do citizens decide their votes to any given candidate taking into account his or his party's past economic and fiscal performance? Attempts to answer questions such as this have motivated the emergence of a rich literature on the economic determinants of votes. The literature on political business cycles (PBC), for instance, has driven especial attention to the *timing* of policy-making, checking whether voters respond more strongly to the opportunistic management of monetary and fiscal instruments as elections come close. According to the core PBC theory, voters are expected to reward incumbents who give them higher benefits and pay-offs prior to elections. As a consequence, rational and self-interested incumbent politicians would behave opportunistically by generating cycles on key monetary and fiscal variables along the electoral calendar in an attempt to enhance their reelection chances. Even in a world of rational expectations, with well informed and forward looking voters who are no longer easily bought by last minute fiscal manipulations, opportunistic cycles may hold as

either a signalling device of politicians' competence (as originally suggested in Rogoff and Sibert, 1988 and Rogoff, 1990) or of politicians' type (DRAZEN; ESLAVA, 2010).[42]

In the last 20 years, political economists have produced a vast empirical literature looking at how fiscal performance affects the electoral results for the legislative and executive branches of all government levels (federal, state and local).[43] The present paper adds to this research agenda by checking if (and which) opportunistic fiscal policies are electorally effective at the local level in Brazil for the 2004 and 2008 elections, covering 3,393 municipalities. More specifically, it checks if the electoral effects of opportunistic fiscal policies are stronger and more significant for first term mayors who are granted the chance to run for reelection. It is the first known study on PBC to check the effectiveness of fiscal opportunism in Brazil under the new institutional context brought up by the new Electoral Legislation (EL), the Reelection Amendment (ER), and the Law of Fiscal Accountability (LRF).[44]

The results from this study suggest that all mayors and parties, regardless of being eligible for reelection, benefit by following a fiscally balanced policy along their term in office, with both higher revenues and spending paying off electorally. Voters also seem to positively respond to electoral year changes in total revenues and total spending, although the effects are mostly restricted to first term mayors. Higher local tax revenues or transfers grants along the term or during elections do not significantly affect voting patterns, except by a slightly positive advantage in favour of first term mayors. The results for spending variables show that voters are particularly sensitive to higher capital and investment expenditures along the mayor's term, with first term mayors perceiving an additional advantage from following such fiscal strategy. When it comes to the effects of opportunistic increases in spending during elections, the results are positive and significant only under first term mayors, with the strongest effects being now observed for current expenditures and personnel expenditures. All these findings confirm the hypothesis that the electoral effects of fiscal policies implemented over the term and during elections are closely linked to the legal permission to run for reelection.

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[42] Note that this proposition views fiscal opportunism as any temporary and (usually) unexpected change in the fiscal policy in an election year as opposed to the average fiscal policy followed during non-electoral years. The idea is that the policy maker takes the electoral year as an opportunity to promote fiscal policies which are expected to increase the chances of reelection.

[43] This paper focuses on the fiscal determinants of votes. For this reason, the empirical literature relating the macroeconomic determinants of votes emerging from monetary policy will not be discussed here.

[44] For detailed discussion on these legislations, refer to section 2 in Chapter 1.

The remainder of this paper is structured as follows. The next section briefly reviews the main literature on the electoral effects of fiscal policy and shows how the present study contributes to its advance. Section III describes basic information on local reelection patterns in Brazil. Section IV presents the estimation strategy, followed by a discussion of the main results in Section V and concluding remarks in Section VI.

II. Literature Review

A general overview of the empirical literature on the electoral effects of fiscal policy point at a strong common behaviour among the electorate: voters are fiscal conservatives.

In Peltzman's (1992) analysis of the voting behaviour for President, Senators and Governors in the United States from 1950-1988, it is shown that American voters penalize federal and state spending growth. Peltzman concludes that American voters are fiscal conservatives, penalizing increased government spending in general, regardless of "who signs the associated check" (if taxes are paid by individuals or firms) and where money is allocated.[45] The author particularly refuses the PBC assumption for which politicians "buy" votes through an expansionary fiscal policy before elections, suggesting that spending just prior to an election is even worse politically than in other periods.

Porto and Porto (2000) check whether elections function as a discipline device over the fiscal management of local officials in Argentina. They base their analysis on the election results of 125 municipalities in the province of Buenos Aires in three electoral races (1987, 1991 and 1993) and on three fiscal variables (total expenditure, capital expenditures and grants transfers).[46] Their findings are similar to Peltzman's, suggesting that Argentinean citizens penalize bad fiscal performance. The results show that higher variation in total expenditures negatively affect the probability of reelection, while higher variation in grants transfers and investments have a positive impact on electoral success. However, in most cases only investments is statistically significant.

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[45] Peltzman (1992) shows that while the composition of federal spending seems irrelevant, it becomes important at the state level, in which voters seem to particularly dislike welfare spending.

[46] Their fiscal variables are expressed in changes for the cross-sectional regressions (the change in the per capita provincial grants, change in per capita total expenditures and change in per capita public investments in the municipality after the last election), while expressed in levels in the panel data regressions.

Brender (2003) examines three election campaigns for Israel's local authorities (1989, 1993 and 1998) in about 140 local councils. His results point at a significant impact of fiscal performance on mayors' reelection probability in the 1998 campaign, but not in the previous 1989 and 1993 ones. Considering the 1998 results only, he shows that larger current deficits, higher debt, and larger accumulation of debt all significantly reduce the probability of reelection, indicating a trait of voters' fiscal conservatism in Israel. Moreover, he points at the existence of a voters' sensitivity to the composition of spending, showing that citizens support mayors who avoid wage excesses, collect taxes efficiently and spend more on development projects along their mandates. However, he finds no effect of "election year economics", since in none of the three campaigns did expansionary policies (in this case reflected by larger accumulation of per-capita debt during the election year), mattered in terms of determining electoral success.

If opportunistic fiscal policies do not seem to affect electoral results as in Peltzman (1992) and Brender (2003), the opposite holds in the studies of Veiga and Veiga (2006, 2007). In their analysis on the relationship between fiscal policy and reelection for 275 Portuguese municipalities from 1979 to 2001, they point at a strong electoral effectiveness of fiscal opportunism for total spending and capital expenditures, although no significant effect is found for budget balance, taxes and current expenditures. They argue that these effects have changed over time, showing that fiscal opportunism had little or no effects until the 1993 elections, when Portugal became an established democracy.[47] The findings in Veiga and Veiga (2006, 2007) suggest that on average, Portuguese voters have become, if not fiscal conservatives, at least fiscal neutrals, by enjoying higher overall spending while not being sensitive to changes in the budget balance.

Brender and Drazen (2008) test how economic conditions and fiscal expansions affect the reelection prospects in a sample of 74 countries over the period 1960-2003, covering 347 elections. Their results support the "voters as fiscal conservatives" view: they find no evidence that higher budget deficit during election year increase reelection chances in any of the groupings of countries they examine (developed and less developed countries, new and old democracies, presidential or parliamentary systems, proportional or majoritarian electoral systems, and countries with varied levels of democracy). They show that while loose fiscal policies during the term in office have a negative effect on the probability of reelection in

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[47] This result contradicts Brender and Drazen (2005) for whom observed cross-country political budget cycles is a phenomenon of new democracies only.

both developed and less developed countries, deficit expansions in the election year are punished only in the developed countries, while in the less developed ones they have no significant effect.

Drazen and Eslava (2010) analyse the electoral effects of fiscal performance of all municipalities in Colombia (about 1,100 cross-sectional units) over the period 1987 to 2002, covering four elections for mayors. Their results indicate that Colombian voters penalize high deficits, but reward the incumbent party for increased capital expenditures. These findings are consistent with their theoretical model in which voters dislike deficits, but enjoy increased "targeted" expenditure.

In Brazil, Sakurai and Menezes-Filho (2008) analyse the effects of fiscal policy on the reelection of mayors by looking at 2,235 municipal governments between 1988 and 2003, covering three elections (1992, 1996 and 2000). Their results show that mayors who promote higher spending during their whole term in office increase the probability of their own reelection. By breaking spending into capital and current expenditures, they find that increases in the former in years preceding elections and increases in the latter in the year of election increase the probability of reelection. However, they do not analyse how budget balance affects reelection prospects, not answering the question of whether voters in Brazil are fiscal conservatives at the local level.

Arvate, Avelino and Tavares (2009) test the prediction present at Brender and Drazen (2005) for whom voters in new democracies are inclined to reward *higher* deficits due to their lack of democratic experience. They look at four state gubernatorial elections from 1990 to 2002, a period in which Brazil could be considered a new democracy, and find that Brazilian voters in fact reward *lower* deficits, refuting Brender and Drazen's (2005) claim. The authors suggest that the fiscal behaviour of governors in Brazil changed mostly due to the LRF, although Brazilian voters were fiscal conservatives even before this new law was implemented. Additionally, they propose that the magnitude of this voter's fiscal conservatism is lower among less sophisticated electorate. They show that voters residing in states with lower income per capita, lower education and higher income inequality punish deficits less severely than those living in more sophisticated states.

A few gaps can be found in the studies briefly outlined above. First, some of those works cover a long time period without properly discussing potentially relevant changes in the political, economic and institutional contexts. This omission is critical since voters and

politicians might change and adapt their incentives depending on contextual changes.[48] Second, some of those studies apply simple OLS regressions in a long panel data, without treating potential problems related to serial correlation and unobserved differences within and between individuals across time, leading to incorrect estimations of the standard errors. Third, the range of fiscal variables under analysis is sometimes too restricted, making it difficult for the reader to have a more complete picture of the overall fiscal policy conducted by the governments and of how fiscal conservative voters respond to it, especially in terms of the composition of revenues and of "targeted" expenditures. Finally, none of the studies discuss how term limits affect the incentives of politicians to engage in opportunistic fiscal policy. By neglecting the institutional restraints on term limits and its effects on fiscal policy and reelection probabilities, one is probably losing a piece in the puzzle. It is reasonable to believe that the permission to run for reelection is an additional incentive for fiscal opportunism from the part of incumbents who intend to continue on with their political careers. Hence, politicians who intend to run for reelection are expected to adopt a set of fiscal policies that maximize voters' preferences, especially as elections approach.

This paper is an attempt to fill the above gaps. Beginning with the data, it consists of an eight year balanced panel of 3,393 municipalities in Brazil observed between 2001 and 2008, covering two elections for mayors (2004 and 2008). As already discussed, these two local elections were held under a whole new institutional context regarding electoral incentives and fiscal accountability rules, so that this period can be taken as being a quite homogenous and stable one for statistical treatment, with no significant structural breaks. Moreover, the fiscal data in this paper covers a wide range of key revenues and spending variables related to fiscal opportunism at the local level. Another important aspect of the present data is its short panel structure, in which the predominance of cross-sectional units over time periods (N > T) reduces the usual problems of serial correlation. Besides, serial correlation should also be diminished by the application of pooled regressions clustered at the municipal level with cluster-robust standard errors, which should additionally circumvent any potential source of heteroskedasticity. Finally, the effects of term limits on fiscal policy and reelection probabilities is explicitly taken into account through the use of a dummy variable identifying whether a mayor is in his first or second term. By interacting this political dummy with the fiscal variables, we are able to test if fiscal opportunism is more effective for mayors who can run for reelection.

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[48] The importance of taking the context into the analysis of PBC is explicit in Franzese and Jusko (2006, pg.2): "The magnitude, regularity, and content of political-economic cycles will vary with (...) contexts."

III. Data and Descriptive Statistics

Tables 6 through 8 summarize information on reelection for the 3,393 municipalities in the sample. Besides the 2004 and 2008 elections which comprehend the main focus of analysis in this paper, the tables also present data on the 2000 elections, thus covering the last three mayoral mandates (1997-2000, 2001-2004 and 2005-2008). The percentage figures were calculated over the full sample size (N = 3,393).

From Table 6, we see that in the 1997-2000 mandate all incumbents are "first term mayors", since in the 2000 elections all of them were allowed to stand for a second term. Yet, only 62% of them ran for reelection, with a little more than a half of those succeeding in getting reelected. The total reelection rate for the sample in 2000 was 36% for mayors and 37% for parties.

In the following mandate (2001-2004), only 64% of the mayors in the sample are in their first term (reflecting the reelection rate of 36% in 2000). The proportion of first term mayors who choose to run in 2004 repeats the figures of 2000 (62% of those in their first term), with a very similar rate of success (59% of those who run). The total reelection rate for the sample in 2004 was 23% for mayors and 30% for parties.

In the 2005-2008 mandate, the proportion of first term mayors increases to 77% (reflecting the reelection rate of 23% in 2004), from which 71.5% runs for reelection and with a higher rate of success (70% of the runners). The total reelection rate for the sample in 2008 was 38% for mayors and 41% for parties.

Table 6 - Reelection Condition, Decision and Results (N = 3,393)

Mandate	Election Year	First Term Mayor	Mayor Runs for Reelection	Mayor Reelected	Party Reelected
1997-2000	2000	3,393	2,112	1,227	1,241
		100%	62%	36%	37%
2001-2004	2004	2,166	1,352	792	1,011
		64%	40%	23%	30%
2005-2008	2008	2,601	1,861	1,304	1,380
		77%	55%	38%	41%

Table 7 - Reelection Results by Groups (N = 3,393)

Mandate	Election Year	Mayor Reelected, Party Not (I)	Party Reelected, Mayor Not (II)	Both Reelected (III)	Neither Reelected (IV)
1997-2000	2000	313	327	914	1,839
		9%	10%	27%	54%
2001-2004	2004	190	409	602	2,192
		6%	12%	18%	65%
2005-2008	2008	320	396	984	1,693
		9%	12%	29%	50%

Table 8 - Distribution of the Dependent Variable (N = 3,393)

Mandate	Election Year	Mayor and/or Party Reelected? Yes	No
1997-2000	2000	1,554	1,839
		46%	54%
2001-2004	2004	1,201	2,192
		35%	65%
2005-2008	2008	1,700	1,693
		50%	50%

From Table 6, we note that while some mayors are granted the chance to run for reelection, only about 60% to 70% of them decide to run. Moreover, the decision to run itself is no guarantee of a successful reelection, since about 30% to 40% of the runners fail to get reelected. These figures show that the decision to run is taken with a reasonable degree of uncertainty regarding the probability of success.

Table 7 compares the reelection rates between mayors and parties. Column I shows that close to 9% of the municipalities have mayors reelected under a different party. In an opposite direction, Column II shows that a little more than 10% of the municipalities have parties getting reelected under a different mayor. Perfect successful alignment between mayor and party is shown in Column III, where about 18% to 29% of the municipalities experience the reelection of both mayor and party. On the other hand, Column IV depicts a less promissory picture, showing that in about 50% to 65% of the municipalities both mayor and party fail to get reelected.

The figures from Table 7 point at the presence of both personalistic and partisan traits on local elections in Brazil. The first column shows that some votes follow the mayor, not the party, while the second column shows that some votes follow the party, not the mayor. Most probably, the first column reflects a successful party change from the part of the mayor. In fact, mayors reelected under a different party correspond to about 25% of all reelected mayors.

The second column from Table 7, where parties are reelected but the mayor is not, there are three possible situations: a) the mayor is in his second term, not being allowed to run for reelection, and the party wins with a new entrant (successor); b) the mayor is in his first term, but does not run for reelection, and the party wins with a substitute; c) the mayor runs for another party and loses. Obviously, it is expected that situation (a) explains most part of the cases in which parties are reelected under a different mayor.[49] But this explains only half the story. For the 2004 and 2008 elections, for example, situation (a) corresponds, respectively, to 67.7% and 52.3% of the cases where parties are reelected under a successor. The situation in which mayors do not run for reelection even when they can – situation (b) – corresponds to 89%, 29.1% and 44.4% of the cases where parties are reelected with a substitute for the 2000, 2004 and 2008 elections respectively, while situation (c) – mayor runs for a different party but loses – corresponds to 11%, 3.2% and 3.3% of the cases for those same elections. The above figures suggest that whatever are the reasons for putting the party

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[49] Situation (a) does not apply to the 2000 elections, since all mayors in this period are in their first term.

and the incumbent mayor apart in an electoral race, parties sometimes benefit from this departure.

The figures just described confirm that party changes are common in Brazil. However, these changes cannot be entirely explained by the "personal vote" hypothesis, for which politicians change party in a free and riskless manner, once according to this theory votes are mostly determined by individual characteristics rather than ideological ones. The figures show that part of these changes are in fact "partisan oriented", since in many cases parties get reelected under a different mayor even when the mayor is allowed to and/or runs for reelection.

Table 8 comes from the figures in Table 2 and shows in a more friendly way how the dependent variable present in this study is distributed. From the table, we see that the dependent variable (a dummy indicating whether the mayor and/or the party had been reelected) is quite evenly distributed, with a good balance of "successes" and "failures".

IV. Empirical Strategy

To test if (and which) opportunistic fiscal policies increase the reelection chances of mayors and/or parties, the following econometric specification is applied:

$$Prob(Reelect)_{it} = \alpha_i + \beta_1 FVavg_i + \beta_2 FVchg_i + \beta_3 TERM_{it} + \quad\quad (4)$$

$$\beta_4 FVavg*TERM_{it} + \beta_5 FVchg*TERM_{it} + X'_{it}\,\gamma + \varepsilon_{it}$$

where FV is a fiscal variable and $TERM$ is a dummy equal to 1 if the mayor is in his first term and 0 otherwise. The same set of fiscal variables (FV) and control variables (given by vector X) presented at Chapter 1 are analysed here for the exact same 3,393 municipalities for the 2004 and 2008 local elections. This allows us to verify if the opportunistic fiscal policies observed in the first chapter revert in higher electoral pay offs herein.[50]

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[50] Equation 1 was also tested controlling for changes in local development based on the municipalities' position on the IFDM rank (Firjan Index of Municipal Development) of 2000, 2005 and 2006, produced by the Federation of Industries of the State of Rio de Janeiro. The IFDM index measures the municipalities' levels of employment & income, education, and health. The inclusion of such control did not alter the results, but caused a loss of 133 observations (municipalities). For these reasons, it was excluded from the regressions.

Equation 1 states that the probability of reelection of an incumbent mayor and/or party in any municipality i in electoral year t depends on the *average* fiscal policy for the non-electoral years (*FVavg*), the percentage *change* in fiscal policy between electoral and non non-electoral years (*FVchg*), and the mayor being in his first or second term (*TERM*).[51] Equation 1 also suggests the presence of interactive effects on reelection probability, given by *FVavg*TERM$_i$* and *FVchg*TERM$_i$*. For instance, if *FV* = budget balance, then the overall change in reelection probability from electoral year changes in the budget balance are given by $\beta_2 + \beta_5*TERM$. The intuition behind these interactive variables is that the electoral effects of opportunistic fiscal policies might be stronger and more significant for first term mayors who are granted the chance to run for reelection.[52]

Two measures for the dependent variable are used: i) a dummy variable accounting for the reelection of either the mayor, the party or both; ii) a dummy variable accounting for the reelection of the party only. The first formulation is similar to the one used in Sakurai and Menezes-Filho (2008), taking the value of 1 if the incumbent mayor and/or the party have been reelected, and 0 otherwise.[53] The second formulation is used for robustness check, once the reelection of mayor is only possible when the independent dummy *TERM* receives the value of 1, which could thus overestimate the effects of fiscal opportunism conducted by first term mayors.

Besides using a binary dependent variable for reelection outcome, many studies also use the share of votes received by the incumbent or his party, most times reaching the same results and conclusions. However, the use of share of votes is not applicable to the present study, since when mayors run for another party, there can be two shares available: the mayor's and the party's. For instance, it can be that a mayor running for another party gets 20% of the votes, while his previous party gets 30%. In such case, which share to use? This problem does not arise when we use a binary variable for reelection success or failure,

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[51] The construction of the fiscal variables follow the works of Veiga and Veiga (2007) and Sakurai and Menezes-Filho (2008), in which the non-electoral years are used to calculate the term's average, while the electoral year change is the variation between the value observed for the electoral year and the term's average.

[52] Note that the variable *TERM* does not capture incumbency advantage, as other studies have done (see for instance Peltzman, 1992 and Drazen and Eslava, 2010), but the effects of the legal permission to run for reelection.

[53] In Sakurai and Menezes-Filho (2008), reelection of the mayor himself is only present in the 2000 elections, while in the two other elections analysed by the authors (1992 and 1996), only the reelection of the party is considered, since mayors were not allowed to run for reelection at those times. This means that their dependent variable is not really comparable along those three elections. Here, on the other hand, the dependent variable is completely comparable, since in the 2004 and 2008 elections, both the mayor and the party can get reelected.

because it takes the value 1 whenever the mayor or the party wins (or both win when the mayor does not change party) and 0 whenever both lose.

To test equation 1, pooled *probit* and *logit* regression models clustered at the municipal level are used, producing cluster-robust standard errors to account for potential heteroskedasticity of the error across municipalities and serial correlation of the error term within municipalities.[54] The quite symmetric distribution of successes and failures for the dependent variable justifies the application of *probit* and *logit* models for estimation procedures, since their functions are symmetric around zero.

V. Results

Tables 9 through 11 present the probit estimates of the effects of fiscal policy on the probability of reelection. The logit estimates are provided in the Appendix. For each independent fiscal variable, two regression models were tested using different measures for the dependent variable. In model 1, the dependent variable equals 1 if the mayor and/or the party is reelected, while in model 2, the dependent variable equals 1 if only the party was reelected.

From Table 9, we see that increases in the term's average *Budget Balance*, *Total Revenues* and *Total Spending* are associated with higher chances of reelection. Except by column 2 for *Budget Balance*, which is not significant, all coefficients on *Term's Average* are positive and significant at 1%, with the strongest effect being observed for *Budget Balance*. When interacted with the *First Term Mayor* dummy, the effects are positive, but significant only under model 2 (reelection of party), suggesting that a mayor in his first term increases his party's reelection chances more than a mayor in his second term when executing higher term's average balances, revenues and spending.

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[54] Although logit models with fixed effects (FE logit) have been tested, as in Sakurai and Menezes-Filho (2008), they were discarded for the empirical analysis of this paper. The reason is due to the dropping of those municipalities that experienced both successes or failures between the 2004 and 2008 elections. This happens because the FE logit automatically drops those observations in which the dependent variable does not change along the time period. Due to this dropping, the sample would not be exactly the same as that from the first chapter, impeding a comparative and integrated analysis of both results.

TABLE 9 - Probit Regressions on the Probability of Reelection (2001-2008)

Dependent Variable: Model (1): Reelection of Mayor and/or Party
Dependent Variable: Model (2): Reelection of Party

Independent Variables:	Independent Fiscal Variables:					
	Budget Balance (R$)		Total Revenues (log)		Total Spending (log)	
	(1)	(2)	(1)	(2)	(1)	(2)
Term's Average (log)[1]	2.1154***	1.1201	0.3912***	0.2533***	0.3551***	0.2292***
	(0.762)	(0.772)	(0.085)	(0.084)	(0.086)	(0.085)
Electoral Year Change (%)[2]	0.7069	0.6508	0.3833**	0.3084	0.2523	0.1392
	(0.436)	(0.437)	(0.194)	(0.194)	(0.180)	(0.181)
First Term Mayor	0.7890***	0.4855***	0.0525	-0.6812	0.1915	-0.5025
	(0.042)	(0.042)	(0.564)	(0.561)	(0.574)	(0.568)
Term's Average*First Term Mayor	0.9546	1.6655**	0.0926	0.1586**	0.0809	0.1378*
	(0.856)	(0.848)	(0.081)	(0.080)	(0.083)	(0.082)
Electoral Year Change*First Term Mayor	0.8139	0.5308	0.7984***	0.6493***	0.5350**	0.5500***
	(0.515)	(0.501)	(0.229)	(0.225)	(0.213)	(0.213)
Current Transfers / Total Revenues (%)	-0.5098**	-0.5146**	0.175	0.037	-0.1205	-0.2008
	(0.202)	(0.200)	(0.218)	(0.215)	(0.214)	(0.212)
Share of votes (%)	3.6101***	3.1349***	3.7466***	3.2683***	3.7345***	3.2588***
	(0.423)	(0.423)	(0.422)	(0.422)	(0.422)	(0.422)
Fractionalization index	2.7816***	2.4266***	2.9403***	2.5789***	2.9433***	2.5781***
	(0.425)	(0.426)	(0.425)	(0.425)	(0.425)	(0.425)
Mayor same party Governor (1st half)	-0.0477	-0.0115	-0.0558	-0.016	-0.0584	-0.0183
	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)
Mayor same party Governor (2nd half)	0.2658***	0.4132***	0.2632***	0.4125***	0.2633***	0.4114***
	(0.045)	(0.045)	(0.045)	(0.045)	(0.045)	(0.045)
Mayor same party President (1st half)	-0.0265	-0.0261	0.0605	0.0444	0.0392	0.0265
	(0.054)	(0.055)	(0.055)	(0.056)	(0.055)	(0.055)
Mayor same party President (2nd half)	0.4264***	0.5582***	0.2993***	0.4565***	0.3290***	0.4794***
	(0.078)	(0.076)	(0.078)	(0.077)	(0.078)	(0.077)
Population (log)	-0.0696***	-0.0585***	0.0660**	0.0509**	0.0411	0.0299
	(0.018)	(0.019)	(0.026)	(0.026)	(0.026)	(0.026)
Real GDP per capita, term's average (log)	0.0645**	0.0792**	-0.1050**	-0.0577	-0.0882**	-0.0434
	(0.032)	(0.034)	(0.041)	(0.042)	(0.041)	(0.042)
Real GDP per capita, electoral year change (%)	0.1515	0.2112**	0.025	0.1122	0.0506	0.1319
	(0.094)	(0.094)	(0.096)	(0.098)	(0.095)	(0.096)
Constant	-3.8744***	-3.6509***	-7.1022***	-5.8571***	-6.5102***	-5.4004***
	(0.597)	(0.607)	(0.841)	(0.840)	(0.839)	(0.841)
Pseudo R-squared	0.090	0.070	0.100	0.080	0.090	0.070
N	6786	6782	6786	6782	6786	6782
Wald (chi2)	748.11	557.7512	827.71	617.7809	776.77	584.2995
Log Likelihood	-4234.255	-4098.239	-4188.542	-4069.836	-4218.222	-4087.621

Source: Author's estimates

Table presents estimates from pooled Probit regressions, with cluster robust standard erros (at the municipal level) shown in parenthesis. All regressions include state dummies. Model (1): dependent variable equals 1 if the mayor and / or the party was reelected. Model (2): dependent variable equals 1 if only the party was reelected. [1]These refer to the average value of the corresponding fiscal variable for non electoral years. [2]These refer to the percentage change of the corresponding fiscal variable between electoral year and its average for non electoral years. *** 1% significance level; ** 5% significance level; * 10% significance level

When it comes to the coefficients on *Electoral Year Change*, we see that fiscal opportunism from second term mayors does not seem to affect their parties' electoral outcomes, since most coefficients are positive but insignificant. On the other hand, the positive and significant coefficients on *Electoral Year Change*First Term Mayor* in *Total Revenues* and *Total Spending* show that first term mayors who promote increases in such fiscal variables during elections enhance their own and/or their parties' reelection chances, while opportunistic changes in *Budget Balance* do not offer differential advantages for first term mayors or for their parties.

The results from Table 9 suggest that all mayors and parties, regardless of being eligible for reelection, benefit by following a fiscally balanced policy along their term in office, with both higher revenues and spending paying off electorally. This suggests that voters in Brazil have a general preference for more government revenues and expenditures, but recognize and reward a sustainable fiscal management. Voters also seem to positively respond to electoral year changes in *Total Revenues* and *Total Spending*, although the effects are mostly restricted to first term mayors. This last finding suggests that the electoral effects of fiscal opportunism are closely linked to the legal permission to run for reelection.[55]

Table 10 presents the probit estimates for the key revenues variables which are under the mayors' discretion. Looking at the effects related to the term's average revenues, we see that second term mayors do not increase their parties' reelection chances by implementing higher collection along the term (non-electoral years), except by a positive but weakly significant (at 10%) effect of term's average *Tax Revenues* (model 1). When interacted with *First Term Mayor*, average *Tax Revenues* turns to promote an even stronger and positive effect on the party's reelection probability (model 2). As for term's average *Current Transfers Grants* and *Capital Transfers Grants*, they seem to have just a mild and positive effect on reelection, but only when conducted by first term mayors.

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[55] The positive reaction of Brazilian voters for higher revenues may reflect the country's budgetary legislation, for which budgets must balance at the end of each legislative term (Sakurai and Menezes-Filho, 2008). Thus, even if revenues are not so easily observed by voters, they highly determine the amount of spending, which in turn is visible and undoubtedly sensitive to voters. In fact, the correlation between Total Revenues and Total Spending for the 3,393 municipalities in the sample between 2001-2008 is 0,9973.

TABLE 10 - Probit Regressions on the Probability of Reelection (2001-2008) - Revenues Variables

Dependent Variable: Model (1): Reelection of Mayor and/or Party
Dependent Variable: Model (2): Reelection of Party

| Independent Variables: | Independent Fiscal Variables: | | | | | |
| | Tax Revenues | | Current Transfers Grants | | Capital Transfers Grants | |
	(1)	(2)	(1)	(2)	(1)	(2)
Term's Average (log)[1]	0.0766*	-0.005	-0.0137	-0.0218	0.004	0.0062
	(0.046)	(0.046)	(0.023)	(0.024)	(0.004)	(0.004)
Electoral Year Change (%)[2]	0.0813	0.0792	0.000	0.000	0.000	0.000
	(0.066)	(0.066)	(0.000)	(0.000)	(0.000)	(0.000)
First Term Mayor	0.7568***	0.188	0.7312***	0.3968***	0.7547***	0.4944***
	(0.167)	(0.166)	(0.077)	(0.078)	(0.055)	(0.055)
Term's Average*First Term Mayor	0.0193	0.0895**	0.0438	0.0619**	0.0085*	0.0049
	(0.040)	(0.040)	(0.028)	(0.028)	(0.005)	(0.004)
Electoral Year Change*First Term Mayor	0.0078	0.0011	0.000	0.000	0.000	0.000
	(0.079)	(0.078)	(0.000)	(0.000)	(0.000)	(0.000)
Pseudo R-squared	0.08	0.070	0.08	0.070	0.08	0.070
N	6786	6782	6786	6782	6785	6781
Wald (chi2)	709.63	536.0908	704.78	530.5	726.51	545.308
Log Likelihood	-4259.24	-4114.576	-4261.679	-4115.176	-4251.798	-4108.811

Source: Author's estimates

Table presents estimates from pooled Probit regressions, with cluster robust standard erros (at the municipal level) shown in parenthesis. Model (1): dependent variable equals 1 if the mayor and / or the party was reelected. Model (2): dependent variable equals 1 if only the party was reelected. Control variables: share of current transfers over total revenues, share of votes in the last elections, fractionalization index in the last elections, political alignment between mayor's and governor's parties (1st and 2nd half of mayor's mandate), political alignment between mayor's and president's parties (1st and 2nd half of mayor's mandate), population, municipal real GDP per capita (term's average for non electoral years), electoral year variation in municipal real GDP per capita and state dummies. [1]These refer to the average value of the corresponding fiscal variable for non electoral years. [2]These refer to the percentage change of the corresponding fiscal variable between electoral year and its average for non electoral years. *** 1% significance level; ** 5% significance level; * 10% significance level

Overall, these results suggest that higher funds along the term do not significantly affect electoral outcomes, expect by a slightly positive effect under first term mayors. This finding indicates that mayors who are allowed to run for reelection may perceive an additional electoral advantage from higher average revenues as opposed to second term mayors.

When it comes to electoral year changes, we see that none of the mayors (first or second term) benefit by opportunistic increases in fiscal revenues, as confirmed by the positive but insignificant coefficients on *Electoral Year Change* and *Electoral Year Change*First Term Mayor*.

The results from Table 9 and 10 provide an interesting picture of how voters in Brazil respond to fiscal revenues. From Table 9, we see that higher *Total Revenues* along the term in office reflect in higher reelection chances for both mayors. Additionally, first term mayors benefit from revenues increases during elections. From Table 10, the effects are weaker, mostly limited to first term mayors who collect more along the term. These results suggest that Brazilian voters have a positive preference for higher total revenues – which are mostly determined by higher current transfers – but are less inclined to reward higher tax collection at the local level, as the weak results for *Tax Revenues* indicate.

One possible explanation for such preference distinction over different types of revenues among Brazilian voters relies on the characteristics of the country's fiscal federalism. Because most Brazilian municipalities are fiscally dependent on transfers from the state and federal governments, it is reasonable to believe that local voters take municipal revenues for granted, once the tax burden is not laid down on them. This helps explain the significant and strong effects of opportunistic increases in *Total Revenues* under first term mayors (see the coefficients on *Electoral Year change*First term mayor* in Table 9). Given that most of the municipalities' total revenues come from current intergovernmental transfers, and since the flow of such transfers are in most part stable and predicted, based on legally determined redistributions and compensations, voters might associate last minute increases on such transfers with an individual ability of the incumbent mayor in obtaining additional funds at low costs. In fact, it is important to remember that these transfers might be interrupted or partially retained by higher government levels if local administrations do not meet their fiscal and financial obligations. Thus, a good and responsible management of local finances is crucial for a mayor to keep on receiving transfers from the state and federal governments. In other words, a poor management of local public funds might cause a fall on current transfers and total revenues, and consequently a deterioration of local public goods and services, which

might reflect in a negative assessment of the mayor by the electorate. If the permisstion to run for reelection enhances effort (BESLEY;CASE, 1995), then first term mayors may have an additional incentive for increasing those revenues which are less costly to local voters.

All in all, the above findings support the hypothesis that the permission to run for reelection is associated with higher collection efforts, which in turn is recognized and rewarded by voters.

The electoral effects of spending variables are presented in Table 11. Looking at the coefficients on *Term's Average* and on the interaction *Term's Average*First Term Mayor*, we see that higher average spending along the non-electoral years for all expenditure categories has a positive and most of the times significant effect on the parties' reelection probability, being even higher when interacted with first term mayors.[56] These figures suggest that the electoral success of parties are sensitive to higher government spending along their term in office, with the strongest and most significant effects being observed for *Capital Expenditures* and *Capital Investments* under first term mayors. Such finding is consistent with the idea that first term mayors have an additional incentive to increase capital expenditures in the first years in office, once they can individually benefit from the electoral returns and political dividends such investments generate in the longer run (e.g. second mandate). While first term mayors can get individual utility from standing one additional term in office – and this utility may increase with past investments – second term mayors cannot. In this sense, second term mayors are less inclined to invest on capital goods, since the (political) rate of return on investment is only perceived with a time lag, maybe only in the following mandate. This means that the credits from such investments may be attained to whoever is in charge in the second term, and not to who started the capital expenditures in the past term. In the short run (e.g. last year of a mandate), higher capital and investment expenditures may produce visible but unfinished, "under construction", public works and services. Voters in this case may create positive expectations about the mayor's performance, but the final and positive assessment will depend on the actual delivery of the service. Therefore, capital expenditures are probably a much more attractive long-term investment option for first term mayors than it is for second term mayors.

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[56] Note that the effects of term's average *Current Expenditures* and *Personnel Expenditures* differ between models 1 and 2. While in model 1 parties benefit from higher current and personnel expenditures along the term from both first term and second term mayors, in model 2 these positive effects are restricted to first term mayors.

TABLE 11 - Probit Regressions on the Probability of Reelection (2001-2008) - Spending Variables

Dependent Variable: Model (1): Reelection of Mayor and/or Party

Dependent Variable: Model (2): Reelection of Party

Independent Variables:	Independent Fiscal Variables:							
	Current Expenditures		Capital Expenditures		Personnel Expenditures		Capital Investments	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Term's Average (log)	0.2664***	0.1362	0.2982***	0.2455***	0.2046**	0.057	0.3066***	0.2705***
	(0.086)	(0.086)	(0.055)	(0.054)	(0.083)	(0.084)	(0.050)	(0.050)
Electoral Year Change (%)	0.3476	0.3211	0.0353	-0.0006	0.1992	0.1767	0.0296	-0.0038
	(0.243)	(0.246)	(0.036)	(0.036)	(0.198)	(0.202)	(0.031)	(0.032)
First Term Mayor	0.26	-0.4899	0.1931	-0.1753	0.1194	-0.5534	0.3197	0.0187
	(0.566)	(0.567)	(0.288)	(0.285)	(0.513)	(0.521)	(0.257)	(0.254)
Term's Average*First Term Mayor	0.0691	0.1387*	0.1375**	0.1491***	0.0999	0.1669**	0.1166**	0.1143**
	(0.083)	(0.083)	(0.058)	(0.057)	(0.084)	(0.085)	(0.054)	(0.053)
Electoral Year Change*First Term Mayor	0.7488***	0.6055**	0.0405	0.0737*	0.6783***	0.4791**	0.0446	0.0752**
	(0.283)	(0.285)	(0.045)	(0.044)	(0.232)	(0.233)	(0.038)	(0.038)
Pseudo R-squared	0.09	0.070	0.09	0.080	0.09	0.070	0.10	0.080
N	6786	6782	6786	6782	6786	6782	6786	6782
Wald (chi2)	773	577.143	786.24	608.7055	759.2	558.8459	803.75	620.7148
Log Likelihood	-4220.703	-4090.626	-4201.956	-4069.714	-4228.709	-4100.647	-4189.773	-4059.109

Source: Author's estimates

Table presents estimates from pooled Probit regressions, with cluster robust standard erros (at the municipal level) shown in parenthesis. Model (1): dependent variable equals 1 if the mayor and / or the party was reelected. Model (2): dependent variable equals 1 if only the party was reelected. Control variables: share of current transfers over total revenues, share of votes in the last elections, fractionalization index in the last elections, political alignment between mayor's and governor's parties (1st and 2nd half of mayor's mandate), political alignment between mayor's and president's parties (1st and 2nd half of mayor's mandate), population, municipal real GDP per capita (term's average for non electoral years), electoral year variation in municipal real GDP per capita and state dummies. [1]These refer to the average value of the corresponding fiscal variable for non electoral years. [2]These refer to the percentage change of the corresponding fiscal variable between electoral year and its average for non electoral years.   *** 1% significance level; ** 5% significance level; * 10% significance level

When it comes to the effects of opportunistic increases in spending during elections, as shown by the coefficients on *Electoral Year Change* and *Electoral Year Change* First Term Mayor*, the results are positive and significant only under first term mayors, but now with the strongest effects being observed for *Current Expenditures* and *Personnel Expenditures*. One possible explanation for this last fact can be found in the signalling theory of politician's competence (ROGOFF, 1990; ROGOFF; SIBERT, 1988) or politician's type (DRAZEN; ESLAVA, 2010) in association with the institutional limitations imposed by the electoral legislation in Brazil. As seen in Section II from Chapter 1, reelection runners in Brazil cannot take administrative decisions which affect staff allocation and personnel expenditures some months prior to elections. However, a reelection runner who still promotes positive shocks in *Personnel Expenditures* in the election year might signal to voters that he is competent enough to do so (or has a genuine preference for targeted personnel expenditures) even under limitations imposed by the electoral and fiscal legislations. After all, only a competent mayor, or who indeed has a preference over this type of expenditure, and who believes that such opportunism pays off, would be willing to increase personnel expenditures in the electoral year even if subject to legal restrictions and to a voters' aversion to deficits. Second term mayors, on the other hand, do not face the additional incentive from another term in office to bare the risk of promoting fiscal opportunism on current and personnel expenditures.

The results from Table 11 suggest that Brazilian voters are particularly sensitive to higher capital and investment expenditures along the mayor's term, with first term mayors perceiving an additional advantage from following such fiscal strategy. However, opportunistic changes in such categories have only a modest effect on voting behaviour. As already suggested, investment expenditures may become (positively) visible to voters only after some time lag. In an opposite direction, the shorter time lag for current and personnel expenditures to generate electoral returns most probably explains why fiscal opportunism on such spending categories pays off.

All together, the spending results from Table 11 indicate that a "first best" strategy for a first term mayor willing to run for reelection is to change the composition of the budget from investment to personnel expenditures as elections approach, providing higher levels of

capital expenditures and investments during his non-electoral years and reducing spending on such categories in favour of higher current and personnel expenditures in the electoral year.[57]

5.3. Comparing Mayors' Fiscal Strategies and Voters' Electoral Responses

Have mayors in Brazil adopted the best fiscal strategies during the 2001-2004 and 2005-2008 mandates in order to enhance their (or their parties) reelection chances in the 2004 and 2008 elections? This section aims at answering this question by summing up the fiscal behaviour of mayors presented in Chapter 1 with the electoral response of voters presented in this chapter.

5.3.1 Budget Balance, Total Revenues and Total Spending

In this chapter (Table 9), it was shown that all mayors and parties, regardless of being eligible for reelection, perceive electoral benefits from higher term's average *Budget Balance*, *Total Revenues* and *Total Spending*. We also saw that voters positively respond to electoral year changes in *Total Revenues* and *Total Spending*, particularly rewarding opportunistic policies emerging from first term mayors.

In the previous chapter (Table 3), we saw that first term and second term mayors do not behave much differently on their term' average total revenues, spending and budget balance. During elections, however, first term mayors present higher changes in those variables, suggesting that the permission to run for reelection is associated with a positive albeit sustainable fiscal opportunism.

Comparing the results from both chapters, we see that first term mayors have not taken full advantage of the electoral benefits from higher levels of revenues, spending and budget balance during the term (non-electoral years). On average, first term mayors have not distinguished themselves from second term mayors along their mandates, even when the probit regressions suggest that their reelections chances should increase if they had enacted higher fiscal policies along the term. But when we look at the fiscal policies adopted during elections, first term mayors hit the right mark: they collect and spend more during elections,

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[57] These findings are aligned with those from Sakurai and Menezes-Filho (2008).

promoting a higher and positive change in the budget balance, and voters positively respond to such strategy.

5.3.2 Revenues Variables

Regarding the revenues variables, we saw in the present chapter (Table 10) that higher revenues along the term do not significantly affect electoral outcomes, except by a slightly positive effect under first term mayors, especially for *Tax Revenues*. Moreover, we saw that none of the mayors (first or second term) benefit by opportunistic increases in fiscal revenues during elections.

Comparing the above results with those from Chapter 1, we see that first term mayors were effective by enacting higher average figures for *Tax Revenues* and *Current Transfers Grants* along the non-electoral years when compared with second term mayors, since by doing so they increase their (or their parties') reelection chances. In a similar way, their insignificant difference on the term's average *Capital Transfers Grants* is aligned with the insignificant electoral effect such rubric provides. During elections, first term mayors present a lower change in *Tax Revenues* (-2.15%) and a positive change in *Capital Transfers Grants* (+17.55%). However, the probit regressions indicate that electoral year changes in such variables do not affect reelection outcomes.

5.3.3 Spending Variables

In this chapter (Table 11), we saw that higher average spending along the non-electoral years has a positive effect on the probability of reelection, especially for *Capital Expenditures* and *Capital Investments* under first term mayors. When it comes to the effects of opportunistic increases in spending during elections, the results are positive and significant only under first term mayors, with the strongest effects being now observed for *Current Expenditures* and *Personnel Expenditures*.

Comparing these results with those from Chapter 1 (Table 5), we see that first term mayors were not too effective on the spending side. First, they present lower figures for the term's average *Capital Expenditures* and *Capital Investments* as opposed to second term

mayors (see the negative coefficients for *First Term Mayor* in Table 5), when the probit results from Table 11 suggest that they should increase such investments during the non-electoral years. Second, we see in the first chapter that first term mayors enact a much higher fiscal opportunism in *Capital Expenditures* (+11.18%) and *Capital Investments* (+14.52%), when the probit results suggest that opportunistic increases in such categories of spending have only a modest effect on electoral outcomes. The opposite happens for *Current Expenditures* and *Personnel Expenditures*: first term mayors tend to follow second term mayors by reducing such expenditures during elections, although the probit results indicate that these are in fact the types of spending that present the greatest electoral pay offs.

In sum, the comparative analysis of the results from chapters 1 and 2 shows that the fiscal decisions of mayors in Brazil are not totally aligned with voters' fiscal preferences. For instance, first term mayors present lower *Total Revenues* and *Total Spending* over the term if compared with second term mayors, when according to voters' preferences they should present a positive difference on such variables. As for revenues rubrics, we see that first term mayors reduce tax revenues and increase current and capital transfers grants during elections, even when such opportunistic strategy does not affect voting behaviour. When it comes to opportunistic spending, first term mayors completely lose the picture: they enact higher electoral year expenditures on categories that are electorally less effective (*Capital Expenditures* and *Capital Investments*) while reduce electoral year spending on those which provide greater electoral outcomes (*Current Expenditures* and *Personnel Expenditures*).

VI. Conclusions

The purpose of this study was to check if (and which) opportunistic fiscal policies are electorally effective in local elections in Brazil under the new institutional context brought up by the new Electoral Legislation (EL), the Reelection Amendment (ER), and the Law of Fiscal Accountability (LRF). More specifically, it has checked if the electoral effects of opportunistic fiscal policies are stronger and more significant for first term mayors who are granted the chance to run for reelection.

Results from pooled probit and logit regressions applied to fiscal and electoral data of 3,393 Brazilian municipalities between 2001 and 2008 (covering the 2004 and 2008 elections) suggest that voters in Brazil have a general preference for more government revenues and

spending, but recognize a sustainable fiscal management. As was shown, all mayors and parties, regardless of being eligible for reelection, perceive electoral benefits from higher term's average budget balance, total revenues and total spending. During elections, voters positively respond to increases in total revenues and total spending, with the effects being more prominent among first term mayors. Higher local tax revenues or transfers grants along the term or during elections do not significantly affect voting patterns, except by a slightly positive advantage in favour of first term mayors. Brazilian voters are particularly sensitive to higher capital expenditures and investment expenditures along the mayor's term, with first term mayors perceiving an additional advantage from following such fiscal strategy. While opportunistic changes in such categories do not affect voting behaviour, voters reward first term mayors who enact positive electoral year changes in current expenditures and personnel expenditures. All these findings confirm the hypothesis that the electoral effects of fiscal policies implemented over the term and during elections are closely linked to the legal permission to run for reelection.

The comparative analysis of the results from this chapter and those from Chapter 1 shows that the fiscal decisions of mayors in Brazil are not totally aligned with voters' fiscal preferences. For instance, first term mayors enact opportunistic expenditures on categories that are electorally less effective (capital expenditures and capital investments) while reduce electoral year spending on those which provide positive electoral outcomes (current expenditures and personnel expenditures), when the results indicate that a "first best" strategy for a first term mayor willing to run for reelection is to change the composition of the budget from investment to personnel expenditures as elections approach, providing higher levels of capital expenditures and investments during his non-electoral years and reducing spending on such categories in favour of higher current and personnel expenditures in the electoral year.

Chapter 3 - Do opportunistic and partisan fiscal cycles come together?

Abstract The present study points at a significant association between opportunistic and partisan fiscal cycles at the local level in Brazil. During elections, left-wing parties increase capital related expenditures, while do not reduce current and personnel expenditures as much as other parties, getting an electoral advantage over their competitors. Right-wing parties promote a positive change in the budget balance in electoral year, which also finds voters' support. All parties compensate opportunistic reductions in tax revenues with increases in either current or capital grants, although voters are mostly neutral to changes in those revenues. No significant partisan differences are observed for the fiscal policies implemented over the term in office (non-electoral years), except by looser budget balances under right-wing administrations and lower investments under left-wing ones. Overall, voters in Brazil positively respond to higher total government spending over the term and during elections, but recognize a sustainable fiscal policy. In any case, voters' fiscal preferences are mostly independent of ideological preferences.

I. Introduction

The literature on political business cycles (PBC) has traditionally identified two sources of politically motivated economic cycles. In the *opportunistic* PBC models, politicians take electoral periods as an opportunity to increase their reelection chances by promoting positive shocks in the economy right before elections. In the *partisan* PBC models, business cycles are partially caused by changes in economic policy according to the different ideological positions of the elected parties. While on opportunistic models the main focus is on economic cycles occurring before elections (with post-elections cycles being necessary adjustments to bring the economy back to its equilibrium), on partisan models the focus is mostly on cycles occurring as a result of government transitions, so that changes in economic policies are observed between mandates rather than along the electoral calendar.[58]

Following these two foundational models, the empirical literature on PBC has usually analysed opportunistic and partisan cycles separately. Tests of the effects of opportunistic

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[58] For a list of key references on opportunistic cycles, refer to footnote 12 in Chapter 1. Important studies on partisan cycles are Hibbs (1977), Beck (1982), Alesina (1987), Alesina and Roubini (1992), Sheffrin (1989) and Alesina, Roubini and Cohen (1997).

cycles on economic policy have relied on time dummies accounting for an election period, while tests of partisan cycles have used ideology or party dummies (e.g. "left" x "right"; "liberal" x "conservative"). If an opportunistic cycle exists, the election dummy should generally indicate the presence of expansionary policies in years of elections, such as higher deficits, higher total spending or higher capital expenditures. As most empirical studies on partisan cycles have demonstrated, if a partisan cycle is present, the ideology or party dummies would show significant differences in economic policies between parties, such as fiscal expansions, higher inflation and higher employment under left-wing or liberal administrations and lower inflation and employment under right-wing or conservative ones.

Albeit opportunistic and partisan models of PBC do rely on two different drivers of politically motivated economic cycles (i.e. time and party effects), there is no theoretical or practical reason why they should be treated separately. For instance, partisan fiscal cycles can be characterized not only by distinct fiscal policies along a party's mandate, but also by distinct movements along the fiscal policies as elections approach. The magnitude and shape of fiscal cycles around election times would thus depend, among other factors, on the preferences of parties and voters over fiscal and non-fiscal policies (e.g. ideological preferences). By this view, pre-electoral shocks on some types of fiscal variables could be implemented by the ruling party to signal its competence level or policy preferences to specific groups of voters in turn for their electoral support. For example, a left-wing party could intensify the levels of public expenditures, inflation and employment before elections to better signal what policies it intends to run if elected, and thus conquer the votes of those citizens who care about such policies.

Despite the above argument in favour of an integrated analysis of opportunistic and partisan cycles, few theoretical and empirical studies on PBC have actually done so. Theoretically, there is the study of Drazen and Eslava (2006), who develop a model where expenditures are targeted to different groups of voters with heterogeneous preferences over fiscal and non-fiscal policies (e.g. ideology). Politicians from parties L and R have preferences over distinct groups of voters. As a result, an incumbent politician/party changes the composition of the budget during electoral periods towards the preferences of the groups with greater electoral importance so as to signal that he/it will continue favouring those groups in the future if elected. Voters have imperfect information about incumbent's type (in terms of which policies and voters he prefers), but must infer what sorts of fiscal policy he will follow if reelected. Such intertemporal inference is made through observing present fiscal

policy, especially during elections. As a result, voters reward electoral year targeting even if they know it is politically motivated, because they expect that such targeting will persist over the next mandate. Repeated elections make such opportunistic policy credible due to reputational effects, while true unobserved preferences of politicians over groups of voters guarantee some persistence of targeting over time. Unfortunately, the authors do not properly test their model.[59]

Empirically, works that simultaneously test opportunistic and partisan cycles on fiscal policies are scarce. Veiga and Veiga (2007), for example, suggest that ideology can be related to the degree of opportunism. They test the ideological effects of fiscal opportunism on investment expenditures by interacting electoral year and political dummies. They show that all mayors in Portugal behave opportunistically, but left-wing oriented ones increase their investment expenditures in the election year more than right-wing ones. Overall, however, their results provide little evidence of ideological cycles for other fiscal categories over the whole term in office. Similarly, Sakurai and Menezes-Filho (2011) include interaction terms between the party ideology of mayors in Brazil and the election year dummy to capture the effects of electoral opportunism for each political group separately. Contrary to the findings in Veiga and Veiga (2007), they do not find significant electoral year differences between left and right-wing parties for any of the fiscal variables analysed. Regarding the overall fiscal policy followed by parties along the term in office, they find only weak evidence of partisan effects, except by higher budget balances by leftist political parties and higher current expenditures for the group "other parties" (i.e. parties that are not ideologically classified).

The present study is an attempt to provide an integrated empirical analysis of both the opportunistic and partisan effects on fiscal cycles in local elections in Brazil. It is an extension of the previous two chapters, but now, instead of looking at how fiscal opportunism changes according to whether the incumbent mayor is in his first or second term, the objective here is to see whether different parties present different fiscal policies over their mandates, if these policies change as local elections approach, and how they affect each party's reelection chances.

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[59] In Drazen and Eslava (2010), they develop and test a slightly different model, where partisan differences are not considered. Instead of politicians having preferences over distinct and heterogeneous groups of voters as in Drazen and Eslava (2006), politicians have preferences over different types of spending, while voters have equal policy preferences and receive the same utility from a given targeted expenditure. Thus, distinct preferences over the composition of the budget is present only between voters and politicians rather than within voters

This paper is very close to Sakurai and Menezes-Filho (2011), but differs in at least two important aspects. First, the period covered here includes the 2004 and 2008 elections, while theirs cover the 1992, 1996, 2000, and 2004 elections. While their series is longer, they do not consider the crucial institutional changes that took place between 1997 and 2000, which has clearly affected electoral and fiscal incentives from 2000 on.[60] Thus, the 2000, 2004 and 2008 elections must be analysed under a different and new institutional context, and cannot be really compared with previous elections. Another important difference is that they do not check the effects of both opportunistic and partisan cycles on the reelection probability of parties, as this paper does.

The results from this paper confirm the presence of a significant association between opportunistic and partisan fiscal policies at the local level in Brazil, with parties from different ideological cleavages adopting different fiscal strategies during elections. The most significant and strong effects were observed under left-wing administrations, who enacted higher changes in capital grants and capital expenditures (e.g. investments) in electoral years. A positive and significant change in the budget balance during elections was observed only for right-wing parties. As for revenues variables, while all parties have equally adopted opportunistic reductions in local taxation, partially compensated by increases in current transfers grants, leftist parties were able to get extra funds by additionally increasing capital transfers grants.

In terms of the average fiscal policy adopted by parties throughout their mandates (non-electoral years), partisan differences were not as strong, except by a slightly more loose budget balance under right-wing administrations and lower levels of investments under left-wing ones.

The results also point at a positive voter response to increased total government revenues and expenditures over the term and during elections, especially for opportunistic increases in current and personnel expenditures. While Brazilian voters care about higher government spending, they recognize a sustainable fiscal policy, regardless of ideological preferences. Moreover, voters are not sensitive to changes in local taxation.

The comparison between parties' fiscal strategies and voters' electoral responses show that leftist parties have been relatively more effective than right-wing parties on their fiscal

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[60] A detailed discussion of these institutional changes affecting electoral and fiscal rules is provided in Chapter 1, Section II.

strategy. While most parties lower their reelection chances by reducing current and personnel expenditures during elections, parties from the left seem to get an electoral advantage over their competitors by promoting a much more modest reduction in such critical expenditures while compensating this loss with higher changes in capital related expenditures, which find some voters' support.

The next section provides descriptive statistics of political parties in Brazil, such as their ideological classifications, reelection rates and average fiscal policies. Section III describes the empirical strategy. Results are discussed in Section IV, followed by the final conclusions in Section V.

II. Data and Descriptive Statistics

This section provides basic data relating the ideological classification of the political parties in the sample, their size in terms of municipalities under their administration, their reelection rates and their average fiscal policies.

Table 12 summarizes how the 25 parties in the sample are ideologically classified as left, center or right, based on Rodrigues (2002) and Dantas (2007).[61] Out of the 25 parties, 6 were alternatively classified according to their official statutes, since they were not found in Rodrigues (2002) and Dantas (2007).[62] There are 11 left-wing parties, 2 center-oriented and 12 right-wing parties in the sample.

From Table 13, we see that the most representative parties at the municipal level are PMDB, PSDB, PFL, PP/PPB, PTB and PT, which together have accounted for almost 80% of all the municipal mandates in the sample between 2001 and 2008.[63] All together, we see that the ideological representation of municipalities over this period has been dominated by right-wing parties, which ruled 2,797 municipalities (41.2%), followed by centralist parties in 2,607 municipalities (38.4%) and leftist parties in the remaining 1,382 municipalities (20.4%).

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[61] Rodrigues (2002) provides a wider classification, covering a greater number of parties, while Dantas (2007) contributes with an update of such classifications. All parties mentioned by Dantas (2007) are present in Rodrigues (2002), and except by the PTB party (Partido Trabalhista Brasileiro - Brazilian Labour Party), the authors agree in all other cases. In Rodrigues (2002), PTB is classified as "center", while in Dantas it is classified as "right". This paper follows Dantas (2007), since it is more recent.

[62] Surely, this alternative classification is not free from criticisms. However, these 6 parties together have ruled over only 78 out of 6,786 municipalities-mandates in the sample (1.14%). The results from this study are thus not sensitive to this classification.

[63] Note that there are 3,393 municipalities and two elections and mayoral mandates, summing up to 6,786 municipal mandates in the sample.

Table 12 - Ideological Classification of Political Parties in Brazil

Left	Center	Right
PT	PMDB	PFL
PDT	PSDB	PP/PPB
PSB		PTB
PPS		PL
PV		PSD
PMN		PSC
PHS[1]		PRP[1]
PT do B		PSL
PRTB[1]		PSDC[1]
PC do B		PST
PTN[1]		PTC[1]
		PRONA

Source: Adapted from RODRIGUES, 2002 and DANTAS, 2007.

[1]Ideological classification made by the author based on the party's official statutes

Party names: 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); PT do B = Partido Trabalhista do Brasil (Labour Party of Brazil); PHS = Partido Humanista da Solidariedade (Solidarity Humanist Party); PRTB = Partido Renovador Trabalhista Brasileiro (Brazilian Renewed Labour Party); PTN = Partido Trabalhista Nacional (National Labour Party); PRP = Partido Republicano Progressista (Republican Progressive Party); PSDC = Partido Social Democrata Cristão (Social Democratic Christian Party); PTC = Partido Trabalhista Cristão (Christian Labour Party)

Table 13 - Reelection Rates by Parties (2001-2008)				
Party Code	Party Name	Number of Municipalities[1]	Total Reelections[2]	Reelection Rate (%)
15	PMDB	1487	585	39.3%
45	PSDB	1120	412	36.8%
25	PFL/DEM	1018	331	32.5%
11	PP/PPB	778	287	36.9%
14	PTB	499	142	28.5%
13	PT	426	228	53.5%
12	PDT	385	130	33.8%
22	PL	348	99	28.4%
23	PPS	289	56	19.4%
40	PSB	180	69	38.3%
41	PSD	47	0	0.0%
43	PV	34	15	44.1%
44	PRP	28	5	17.9%
17	PSL	27	4	14.8%
20	PSC	25	4	16.0%
33	PMN	23	6	26.1%
31	PHS	18	6	33.3%
27	PSDC	14	2	14.3%
70	PT do B	11	1	9.1%
28	PRTB	8	3	37.5%
36	PTC	7	1	14.3%
65	PC do B	5	3	60.0%
18	PST	5	0	0.0%
19	PTN	3	2	66.7%
56	PRONA	1	0	0.0%
TOTAL		6786	2391	35.2%

Source: Author´s elaboration based on TSE (Tribunal Superior Eleitoral)

[1]The number of municipalities administered by the party during the 2001-2004 and 2005-2008 mandates

[2]The total number of municipalities where the party was reelected.

However, right-wing parties have shown a lower average reelection rate (17% for all right-wing parties and 22.6% excluding those with zero reelection), while centrist and left-wing parties have had higher average reelection rates (38.1% and 38.3% respectively). The most significant individual reelection rate belongs to PT (53.5%). This evidence confirms the growth of the left-wing parties in Brazil following the successive victories of PT in the last three presidential races (2002, 2006 and 2010). Before PT, the country has been managed by PSDB (1995-1998; 1999-2002) and PMDB (1985-1990; 1992-1994) since redemocratization in 1985.[64]

Table 14 relates the average fiscal variables for electoral and non-electoral years (term's average) for parties from the left, center and right. The table indicates the presence of some association between fiscal opportunism and party ideology. Parties oriented to the right seems to present a much higher and positive variation in the budget balance during election years (78%) – although their term's average balance is much lower – whereas parties from the left and center present a lower but still positive change on the budget balance (41% and 37% respectively). This suggests that between 2001 and 2008, all parties have adopted a fiscally responsible opportunistic policy in election years, with parties from the right being even more fiscally conservative during elections, but less so along non-electoral years. The table also shows that left oriented parties appear to have higher electoral year changes in all fiscal variables, especially those related to capital transfers and expenditures. As was discussed in Chapter 1, capital related rubrics are much more dependent on political agreements between municipalities and the states and/or federal governments. A possible explanation for these changes to be especially higher for leftist parties is the combination of a high fiscal dependence of most municipalities on transfers from the states and federal governments and the recent strengthening of the left on all government levels along this period. These two facts suggest that capital transfers and expenditures have been channelled with priority to municipalities under left-wing parties.[65]

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[64] Between 1990-1992, the country was under the administration of the extinct PRN (Partido da Reconstrução Nacional – National Reconstruction Party), whose President suffered an impeachment.

[65] Note that this argument does not invalidate the explanation in Chapter 1, for which the observed higher capital revenues and expenditures for first term mayors could be caused by the greater reelection incentives these mayors faced for signing highly visible investment projects with the state and federal governments in order to increase their chances of reelection. Although leftist parties have been increasing their "electorate share" between 2001 and 2008 and consequently their share over first term mayors, many of these mayors still belong to center and right wing parties. In the 2001-2004 mandate, only 17.8% of the first term mayors belonged to left-wing parties, while in the 2005-2008 mandate this percentage increased to 26.8%. Thus, higher capital revenues and expenditures to both first term mayors and those belonging to left oriented parties are not being driven by the same causes, even though sometimes the same individual mayor is found to possess these two attributes.

TABLE 14 - Fiscal Variables and Ideological Classification (2001-2008)

Fiscal Variables	Left Electoral Year (A)		Non Electoral Years (Term's Average) (B)		Electoral Year change (%) (A)/(B)		Center Electoral Year (A)		Non Electoral Years (Term's Average) (B)		Electoral Year change (%) (A)/(B)		Right Electoral Year (A)		Non Electoral Years (Term's Average) (B)		Electoral Year change (%) (A)/(B)	
	Obs	Mean	Obs	Mean	Obs	Mean	Obs	Mean	Obs	Mean	Obs	Mean	Obs	Mean	Obs	Mean	Obs	Mean
Total Revenues (TR)	1,382	1,409	4,146	1,189	1,382	18%	2,607	1,409	7,821	1,259	2,607	12%	2,797	1,367	8,391	1,183	2,797	16%
Tax Revenues	1,382	104	4,146	89	1,382	17%	2,607	93	7,821	82	2,607	14%	2,797	85	8,391	73	2,797	16%
Current Transfers Grants	1,382	29	3,618	24	1,382	22%	2,607	29	6,416	23	2,607	22%	2,797	28	6,931	24	2,797	21%
Capital Transfers Grants	1,382	53	3,618	32	1,382	64%	2,607	48	6,416	36	2,607	34%	2,797	42	6,931	32	2,797	30%
Total Spending (TS)	1,382	1,360	4,146	1,155	1,382	18%	2,607	1,366	7,821	1,227	2,607	11%	2,797	1,323	8,391	1,158	2,797	14%
Current Expenditures	1,382	1,145	4,146	1,004	1,382	14%	2,607	1,161	7,821	1,059	2,607	10%	2,797	1,132	8,391	1,005	2,797	13%
Capital Expenditures	1,382	215	4,146	150	1,382	43%	2,607	205	7,821	168	2,607	22%	2,797	191	8,391	153	2,797	25%
Personnel Expenditures	1,382	577	4,146	502	1,382	15%	2,607	578	7,821	519	2,607	11%	2,797	563	8,391	495	2,797	14%
Capital Investments	1,382	189	4,146	127	1,382	49%	2,607	181	7,821	145	2,607	25%	2,797	167	8,391	131	2,797	27%
Budget Balance (TR - TS)	1,382	48.7	4,146	34.6	1,382	41%	2,607	43.3	7,821	32	2,607	37%	2,797	44.2	8,391	24.8	2,797	78%

Source: Author´s elaboration based on TSE (Tribunal Superior Eleitoral) and STN (Secretaria do Tesouro Nacional)

Means are expressed in per capita Reais (R$), at 2008 prices using the IPCA inflation index

III. Empirical Strategy

3.1. Testing the effects of opportunistic and partisan cycles on fiscal policy

In order to implement an integrated test of both the opportunistic and partisan cycles on fiscal policy, we follow the regression model in (1) (Chapter 1), but substitute the "first term" dummy by ideological dummies. The final regression model then becomes:

$$FV_{it} = \alpha_i + \beta_1 ELEC_t + \beta_2 RIGHT_i + \beta_3 LEFT_i + \beta_4 ELEC_t * RIGHT_i + \beta_5 ELEC_t * LEFT_i$$

$$+ \delta_1 T + X'_{it} \beta_x + \varepsilon_{it} \qquad (5)$$

where $RIGHT_i$ and $LEFT_i$ are dummies equal to 1 when the mayor's party is oriented to the right or left of the ideological spectrum. These ideological dummies test the partisan effects on fiscal policy. When the party is from the center (i.e. PMDB or PSDB), both dummies take the value 0 (zero). Thus, centrist parties are the base group. In this sense, the coefficients on these dummies show the difference in the fiscal variables between parties from the right or the left and those from the center. As before, the effects of elections on fiscal policy are captured by the coefficient on $ELEC_t$ (a time dummy equal to 1 in the electoral year and 0 otherwise), which now corresponds to the opportunistic fiscal strategies followed by the base group of centrist parties.

Following a similar formulation as in Veiga and Veiga (2007) and Sakurai and Menezes-Filho (2011), the simultaneous effects of opportunistic and partisan cycles are captured by the coefficients on the interactions *ELEC*RIGHT* and *ELEC*LEFT*. These interactions test if changes in the pattern of fiscal policies in the electoral years vary according to the ideological preferences of parties. If parties follow distinct fiscal strategies as elections get closer, these interaction dummies would be statistically significant, whereas no party differences would be confirmed by statistically insignificant coefficients.[66]

The expected signs of the coefficients β_1 through β_5 cannot be precisely defined, since the literature on partisan cycles provides only rough and generic propositions regarding the

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[66] Note that the opportunistic fiscal strategy of parties from the left is captured by $\beta_1 + \beta_5$, while fiscal opportunism of right-wing parties is captured by $\beta_1 + \beta_4$.

expected economic policies to be followed by parties according to their ideological positions. This is especially true for the interaction terms, once there are no theoretical models indicating if parties from different ideological positions follow distinct policies during election times. Besides, as Franzese and Jusko (2006) have put, evidence of partisan cycles in fiscal policy is less consistently found in the empirical studies than are in other policy variables such as social and welfare programs, tax structure and monetary policy. Since this study focuses on fiscal policies, it is even harder to make predictions about the expected signs and magnitudes of the coefficients on the party dummies and the interaction terms.

In any case, we can rely on Chart 1 below as a guide to help us interpret the results from the next section. This table summarizes the most common predictions about partisan policies according to the main literature on partisan cycles.

Monetary/Fiscal/Economic Policies	Left/Labour/ Democratic	Right/Conservative/ Republican
Employment	+	-
Inflation	+	-
Economic Growth	+	-
Income Distribution and Redistribution (e.g. Transfers)	+	-
Budget Balance	-	+
Total Spending	+	-

Chart 1 - Economic Policies and Political Parties
Source: Author´s elaboration based on Hibbs (1977) and Franzese and Jusko (2006)

From the chart, we see that leftist parties are generally seen as having a preference for higher employment and economic growth, even when it comes with higher inflation, while rightist parties tend to put higher importance on price stability, so that inflation under right-wing administration is generally lower, albeit at the expense of lower employment and economic activity. Parties from the left also tend to spend more on distributive and redistributive policies such as governmental transfers (e.g. cash transfers programs and

welfare payments). Fiscal policy under left-wing administrations is also usually more expansive, with higher spending and a more loose budget balance, while parties from the right are usually more fiscally conservative.

3.2. Testing the effects of opportunistic and partisan cycles on electoral outcomes

In addition to testing how parties differ in their fiscal strategies as elections approach, this study also tests the electoral effectiveness of different fiscal policies according to which party is being observed. The econometric specification in this case is an extension of equation (4) from Chapter 2, where again the "first term" dummy is replaced by ideological dummies. The probability model is:

$$Prob(Reelect)_{it} = \alpha_i + \beta_1 FVavg_i + \beta_2 FVchg_i + \beta_3 RIGHT_{it} + \beta_4 LEFT_{it} +$$

$$\beta_5 FVavg^*RIGHT_{it} + \beta_6 FVchg^*RIGHT_{it} + \beta_7 FVavg^*LEFT_{it} + \beta_8 FVchg^*LEFT_{it} +$$

$$X'_{it}\, \gamma + \varepsilon_{it} \tag{6}$$

where the dependent variable is a dummy equal to 1 if the party is reelected and 0 if not.[67]

The interactions between fiscal variables (FV_i) and the ideological dummies ($RIGHT_i$ and $LEFT_i$) allow us to check if the electoral effectiveness of higher term's average ($FVavg_i$) and electoral year changes ($FVchg_i$) in fiscal policy differ according to the ideological position of parties. For example, we may find that higher positive changes in total spending and a decrease in fiscal balances during electoral years increase the reelection chances of leftist parties more than they do for parties from the center or right. If there is some connection between expected policies and ideological preferences, then it makes sense to believe that the credibility of such electoral year opportunistic signalling depends on the reputation parties have built in the past as to their preferred policies. For instance, if parties from the right are recognizably more conservative over fiscal balances, then running higher

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[67] Note that it does not take into account the individual reelection of a mayor, as is done in Chapter 2, but only the party's reelection.

expenditures and higher fiscal deficits in electoral years could particularly hurt their reelection chances.[68]

V. Results

5.1. The effects of opportunistic and partisan cycles on fiscal policy

The effects of opportunistic and partisan cycles on fiscal policy are shown in Tables 15 through 17 below.

From Table 15, we see that the coefficients on *Electoral Year* indicate that centrist parties reduce *Total Revenues* and *Total Spending* by about 1.22% and 1.53% during elections respectively, while leave the *Budget Balance* quite unchanged compared to previous non-electoral years. Significant partisan differences are observed during elections, as confirmed by the coefficients on *Electoral Year*Right* and *Electoral Year*Left*: while parties from the right follow a more conservative fiscal strategy by slightly increasing revenues (+0.94%) and the budget balance (+R$7.97), parties from the left enact a much more significant increase in both revenues (+3.4%) and spending (3.38%) without resulting in significant differences in their budget balance as opposed to centrist parties. Note that Wald tests at the end of Table 15 reject the null hypothesis that these coefficients are equal. These results confirm the hypothesis that partisan and opportunistic fiscal cycles come together, with parties from different ideological cleavages adopting different fiscal strategies during elections.

Partisan differences along the term in office (non-electoral years) are not as strong, except by a relatively more loose budget balance under right-wing parties (-R$6.00) as confirmed by the coefficient on *Right*. In fact, the Wald test rejects the hypothesis that this coefficient is equal to that on *Left*. This finding corroborates the figures in Table 3, and suggests that parties from the right follow a relatively more loose – but usually positive – balanced budget during non-electoral years.

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[68] Note that the overall change in the reelection probability from an opportunistic fiscal policy conducted by a left-wing party is given by $\beta_2 + \beta_8$; while from a right-wing party is given by $\beta_2 + \beta_6$. The electoral effectiveness from fiscal opportunism enacted by centrist parties is simply given by β_2.

TABLE 15 - Partisan Effects on Fiscal Policy (2001-2008)

Dependent Variable:	Budget Balance (R$)		Total Revenues (log)		Total Spending (log)	
	OLS	GLS RE	OLS	GLS RE	OLS	GLS RE
Electoral Year	2.2531	2.3101	-0.0119***	-0.0122***	-0.0147***	-0.0153***
	(2.584)	(2.512)	(0.002)	(0.003)	(0.003)	(0.003)
Right	-5.7886**	-5.9816***	-0.0066	-0.0026	-0.0035	0.0029
	(2.411)	(2.023)	(0.008)	(0.003)	(0.008)	(0.003)
Left	-3.4232	-2.4924	-0.0058	-0.0038	-0.0035	-0.0026
	(3.225)	(2.590)	(0.010)	(0.004)	(0.010)	(0.004)
Electoral Year*Right	7.9455**	7.9758**	0.0092***	0.0094***	0.006	0.006
	(3.718)	(3.569)	(0.003)	(0.004)	(0.004)	(0.004)
Electoral Year*Left	1.7156	1.656	0.0312***	0.0340***	0.0309***	0.0338***
	(4.770)	(4.327)	(0.004)	(0.005)	(0.005)	(0.005)
Linear Trend Line	3.7795***	3.7796***	0.0585***	0.0656***	0.0564***	0.0632***
	(0.305)	(0.313)	(0.001)	(0.000)	(0.001)	(0.000)
Current Transfers / Total Revenues (log)	-108.6356***	-117.8947***	-0.9107***	-0.5769***	-0.8582***	-0.5198***
	(18.594)	(15.621)	(0.029)	(0.020)	(0.030)	(0.022)
Share of votes (log)	5.736	3.6999	0.0773***	0.0150**	0.0781***	0.0191***
	(4.713)	(4.107)	(0.019)	(0.006)	(0.020)	(0.007)
Fractionalization index (log)	-1.5967	-1.0367	-0.0072**	-0.0007	-0.0071**	-0.0019
	(1.151)	(1.151)	(0.004)	(0.001)	(0.004)	(0.001)
Mayor same party Governor (1st half)	0.0455	0.867	0.0027	0.0005	0.0028	0.0019
	(1.919)	(1.851)	(0.007)	(0.003)	(0.007)	(0.003)
Mayor same party President (1st half)	-4.5487**	-4.4143**	-0.0303***	-0.0147***	-0.0274***	-0.0105***
	(2.188)	(2.245)	(0.010)	(0.004)	(0.010)	(0.004)
Mayor same party Governor (2nd half)	-0.707	-1.3358	0.0115	0.0019	0.0099	0.0013
	(2.186)	(2.067)	(0.008)	(0.003)	(0.008)	(0.004)
Mayor same party President (2nd half)	8.1972**	8.5612**	0.0770***	0.0295***	0.0717***	0.0200***
	(3.996)	(3.670)	(0.017)	(0.006)	(0.017)	(0.006)
Population (log)	-15.0099***	-15.7220***	-0.2762***	-0.2551***	-0.2735***	-0.2489***
	(1.737)	(1.476)	(0.005)	(0.004)	(0.006)	(0.004)
Real GDP per capita (log)	20.0755***	18.2363***	0.3404***	0.1568***	0.3367***	0.1685***
	(3.462)	(3.034)	(0.010)	(0.005)	(0.010)	(0.005)
Constant	-92.9795**	-63.0789*	5.6081***	7.4268***	5.6248***	7.2547***
	(43.616)	(33.492)	(0.135)	(0.066)	(0.136)	(0.069)
N (municipalities x years)	0.09	0.09	0.74	0.68	0.71	0.66
Number of municipalities	27144	27144	27144	27144	27144	27144
F	52.08	na	1740	na	1503.84	na
Right = Left (p-value) [1]	0.051	0.010	0.311	0.548	0.714	0.300
*Elect*Right = Elect*Left (p-value)* [1]	0.089	0.071	0.0031	0.000	0.0036	0.000

Source: Author's estimates

Table presents results from pooled ordinary least squares (OLS) and generalized least squares with random-effects (GLS RE) estimates, with cluster robust standard erros (at the municipal level) shown in parenthesis. All regressions include state dummies. [1]Refers to tests of equality of coefficients, under the null hypothesis that the coefficients are equal. *** 1% significance level; ** 5% significance level; * 10% significance level.

Table 16 presents the results related to revenues variables. In most cases, we see that the centrist parties in the sample (PSDB and PMDB) promote a significant reduction in *Tax Revenues* during elections (-5%), while compensate this with a positive and significant increase in *Current Transfers Grants* (+15.54%). For these same variables, partisan differences are not too strong, except by lower levels of *Tax Revenues* and slightly higher levels of *Current Transfers Grants* under right wing parties during non-electoral years. On the other hand, parties from the left clearly distinguish themselves from centrist and rightist parties by promoting a 15.44% higher change in *Capital Transfers Grants* during elections. The findings from Table 16 indicate that parties in general adopt opportunistic reductions in tax revenues, probably as an attempt to alleviate the tax burden on citizens and stimulate economic activity. Interestingly though, is that such reduction in tax revenues seems to be compensated with increases in other sources of revenues, such as transfers grants, which are not as costly to local citizens. While centrist and rightist parties cover such tax reductions with increases in current transfers grants, leftist parties get extra sources of funds by increasing capital transfers grants during elections.

The results related to spending variables are presented in Table 17. While the coefficients on *Electoral Year* show that parties from the center reduce *Current Expenditures* and *Personnel Expenditures* during election years by about 2.3%, with parties from the right not behaving much differently – see the weakly significant coefficients on *Electoral Year*Right* – left-wing parties also reduce such expenditures during elections, but not as much as other parties, as confirmed by the positive and significant coefficient on *Electoral Year*Left*.[69] When it comes to *Capital Expenditures* and *Capital Investments*, partisan differences are stronger: while during non-electoral years left-wing parties invest about 4% less than parties from the center and right, they invest 13% more during elections. These results confirm the figures shown in Table 14, where fiscal opportunism is more present under left-wing administrations, especially for capital grants and expenditures.

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[69] As already explained, the electoral year change in fiscal variable for left wing parties is given by $\beta_2 + \beta_8$, which in the case of current and personnel expenditures is still negative.

TABLE 16 - Partisan Effects on Fiscal Policy (2001-2008) - Revenues Variables

Dependent Variable (log):	Tax Revenues		Current Transfers Grants		Capital Transfers Grants	
	OLS	GLS RE	OLS	GLS RE	OLS	GLS RE
Electoral Year	-0.0528***	-0.0502***	0.1560***	0.1554***	0.0125	0.0146
	(0.006)	(0.007)	(0.025)	(0.027)	(0.035)	(0.036)
Right	0.000	-0.0181**	0.0587	0.0573*	-0.0094	0.0248
	(0.015)	(0.008)	(0.040)	(0.032)	(0.047)	(0.038)
Left	0.0028	-0.0041	0.0351	0.0456	-0.0668	-0.0403
	(0.019)	(0.009)	(0.050)	(0.038)	(0.058)	(0.047)
Electoral Year*Right	0.007	0.0057	-0.0377	-0.0358	-0.0541	(0.059)
	(0.009)	(0.009)	(0.035)	(0.037)	(0.046)	(0.049)
Electoral Year*Left	-0.0028	0.0054	0.0002	0.0038	0.1641***	0.1544***
	(0.011)	(0.011)	(0.041)	(0.043)	(0.056)	(0.058)
R-squared	0.71	0.67	0.11	0.11	0.14	0.14
N	27144	27144	23751	23751	23747	23747
F	1592.6	na	80.07	na	78.14	na
Right = Left (p-value) [1]	0.957	0.038	0.335	0.185	0.473	0.318
*Elect*Right = Elect*Left (p-value)* [1]	0.824	0.796	0.485	0.534	0.000	0.001

Source: Author's estimates

Table presents results from pooled ordinary least squares (OLS) and generalized least squares with random-effects (GLS RE) estimates, with cluster robust standard erros (at the municipal level) shown in parenthesis. The complete set of control variables are: linear time trend, share of current transfers over total revenues, share of votes in the last elections, fractionalization index in the last elections, political alignment between mayor's and governor's parties (1st and 2nd half of mayor's mandate), political alignment between mayor's and president's parties (1st and 2nd half of mayor's mandate), population, municipal real GDP per capita and state dummies.
[1]Refers to tests of equality of coefficients, under the null hypothesis that the coefficients are equal. *** 1% significance level; ** 5% significance level; * 10% significance level.

TABLE 17 - Partisan Effects on Fiscal Policy (2001-2008) - Spending Variables

Dependent Variable (log):	Current Expenditures		Capital Expenditures		Personnel Expenditures		Capital Investments	
	OLS	GLS RE	OLS	GLS RE	OLS	GLS RE	OLS	GLS RE
Electoral Year	-0.0224***	-0.0228***	0.0182*	0.0175	-0.0235***	-0.0234***	0.0171	0.017
	(0.003)	(0.003)	(0.011)	(0.012)	(0.003)	(0.003)	(0.013)	(0.015)
Right	-0.0049	-0.0004	0.0121	0.0267**	-0.0088	-0.0057	0.0113	0.0295**
	(0.008)	(0.003)	(0.016)	(0.012)	(0.009)	(0.004)	(0.018)	(0.015)
Left	0.0027	0.0032	-0.0435**	-0.0422***	-0.0034	-0.0058	-0.0548**	-0.0414**
	(0.010)	(0.004)	(0.020)	(0.015)	(0.011)	(0.007)	(0.023)	(0.018)
Electoral Year*Right	0.0064*	0.0061*	0.0012	0.0024	0.0071*	0.0067	0.0032	0.0046
	(0.004)	(0.004)	(0.015)	(0.016)	(0.004)	(0.005)	(0.018)	(0.019)
Electoral Year*Left	0.0147***	0.0188***	0.1271***	0.1252***	0.0169***	0.0199***	0.1333***	0.1309***
	(0.004)	(0.004)	(0.018)	(0.019)	(0.006)	(0.006)	(0.022)	(0.023)
R-squared	0.70	0.63	0.43	0.42	0.64	0.61	0.37	0.37
N	27144	27144	27144	27144	27144	27144	27144	27144
F	1415.07	na	404.24	na	1085.70	na	343.25	na
Right = Left (p-value) [1]	0.658	0.543	0.011	0.000	0.573	0.389	0.007	0.000
*Elect*Right = Elect*Left (p-value)*[1]	0.004	0.000	0.000	0.000	0.010	0.004	0.000	0.000

Source: Author's estimates

Table presents results from pooled ordinary least squares (OLS) and generalized least squares with random-effects (GLS RE) estimates, with cluster robust standard erros (at the municipal level) shown in parenthesis. The complete set of control variables are: linear time trend, share of current transfers over total revenues, share of votes in the last elections, fractionalization index in the last elections, political alignment between mayor's and governor's parties (1st and 2nd half of mayor's mandate), political alignment between mayor's and president's parties (1st and 2nd half of mayor's mandate), population, municipal real GDP per capita and state dummies. [1]Refers to tests of equality of coefficients, under the null hypothesis that the coefficients are equal. *** 1% significance level; ** 5% significance level; * 10% significance level.

In sum, the above results provide evidence of a significant association between opportunistic and partisan fiscal policies at the local level in Brazil, especially on the spending side. In most cases, the interaction terms *Electoral Year*Right* and *Electoral Year*Left* were statistically significant, with Wald tests rejecting the null hypothesis of equality of such coefficients. The only exceptions were found for *Tax Revenues* and *Current Transfers Grants*, where all parties seem to reduce the former with compensated increases in the latter during elections. In terms of the average fiscal policy adopted by parties throughout their mandates, partisan differences were not as strong, except by a slightly more loose *Budget Balance* under right-wing administrations and lower levels of *Capital Expenditures* and *Capital Investments* under left-wing ones.

These above results are similar to those found in Veiga and Veiga (2007), who showed that left-wing mayors in Portugal increased their investment expenditures in the election year more than right-wing ones, but different from Sakurai and Menezes-Filho (2011), who found no significant electoral year differences between left and right-wing parties. On the other hand, like both those studies, this paper found weaker partisan differences regarding the term's average fiscal policy.

5.2. The effects of opportunistic and partisan cycles on electoral outcomes

Tables 18 through 20 present the probit estimates applied to the probability regression given in equation (6). The dependent variable is the reelection of the incumbent party. Each column reports the effects of different fiscal variables on the reelection probability of parties. For example, the first column of Table 18 shows how the party's reelection chances are affected by the term's average and electoral year changes in the *Budget Balance* as well as by their interactions with the ideological dummies.

TABLE 18 - Probit Regressions on the Probability of Reelection (2001-2008)
Dependent Variable: Reelection of Party

Independent Variables:	Independent Fiscal Variables:		
	Budget Balance (R$)	Total Revenues (log)	Total Spending (log)
Term's Average (log)[1]	2.4102***	0.4164***	0.3751***
	(0.617)	(0.073)	(0.075)
Electoral Year Change (%)[2]	1.4070***	0.8514***	0.4653***
	(0.363)	(0.183)	(0.163)
Right	-0.0803	0.0746	0.0578
	(0.050)	(0.562)	(0.572)
Left	-0.1439**	1.3741*	1.4824**
	(0.063)	(0.710)	(0.722)
Term's Average*Right	0.5653	-0.0205	-0.0228
	(0.849)	(0.080)	(0.082)
Electoral Year Change*Right	-0.4273	0.0006	0.2199
	(0.488)	(0.245)	(0.222)
Term's Average*Left	0.7719	-0.2201**	-0.2372**
	(0.984)	(0.100)	(0.103)
Electoral Year Change*Left	0.1507	0.1237	0.2031
	(0.627)	(0.289)	(0.270)
Current Transfers / Total Revenues (%)	-0.4763**	0.083	-0.1741
	(0.195)	(0.208)	(0.204)
Share of votes (%)	2.5084***	2.6173***	2.5895***
	(0.414)	(0.413)	(0.413)
Fractionalization index	2.0667***	2.1821***	2.1679***
	(0.420)	(0.419)	(0.418)
Mayor same party Governor (1st half)	-0.0675	-0.0701	-0.0703*
	(0.042)	(0.043)	(0.043)
Mayor same party Governor (2nd half)	0.3750***	0.3600***	0.3601***
	(0.047)	(0.048)	(0.047)
Mayor same party President (1st half)	-0.1260**	-0.0247	-0.0581
	(0.057)	(0.060)	(0.059)
Mayor same party President (2nd half)	0.7050***	0.6039***	0.6368***
	(0.086)	(0.086)	(0.086)
Population (log)	-0.0572***	0.0540**	0.0303
	(0.018)	(0.025)	(0.025)
Real GDP per capita, term's average (log)	0.0665**	-0.0712*	(0.054)
	(0.032)	(0.040)	(0.040)
Real GDP per capita, electoral year change (%)	0.1821*	0.0725	0.0979
	(0.093)	(0.096)	(0.095)
Constant	-2.5948***	-5.9775***	-5.3201***
	(0.586)	(0.789)	(0.788)
Pseudo R-squared	0.047	0.053	0.048
N	6782	6782	6782
Wald (chi2)	397.0374	456.973	423.3215
Log Likelihood	-4196.211	-4170.12	-4190.92
Right = Left (p-value)[3]	0.2693	0.0637	0.0456
*Term's avg*Right = Term's avg*Left (p-value)[3]*	0.8314	0.0454	0.0355
*Elect year*Right = Elect year*Left (p-value)[3]*	0.346	0.6583	0.9492
Joint interactions not significant (p-value)[4]	0.5778	0.2334	0.1378

Source: Author's estimates

Table presents estimates from pooled Probit regressions, with cluster robust standard erros (at the municipal level) shown in parenthesis. All regressions include state dummies. [1] These refer to the average value of the corresponding fiscal variable for non electoral years. [2] These refer to the percentage change of the corresponding fiscal variable between electoral year and its average for non electoral years. [3] Refers to tests of equality of coefficients, under the null hypothesis that the coefficients are equal. [4] Refers to test of joint significance of the interaction variables, under the null hypothesis that the coefficients are jointly insignificant. *** 1% significance level; ** 5% significance level; * 10% significance level

From Table 18 we see that higher term's average and electoral year changes in the three aggregate measures of fiscal policy are associated with higher reelection chances for the base group of incumbent parties (i.e. center-oriented parties). The strongest effects are observed for *Budget Balance*.[70] Conditioned on the covariates, parties from the left usually perceive an electoral advantage over rightist and centrist parties, as the positive and significant coefficients on *Left* demonstrate.[71] On the other hand, higher term's average revenues and spending promoted by leftist parties seem to lower their reelection chances in comparison with higher average figures from parties of the center and right, as confirmed by the negative and significant coefficients on *Term's Average*Left*. Yet, this does not mean that parties from the left lower their reelection chances if increasing revenues and spending over their term, since the sum of the coefficients on *Term's Average* and *Term's Average*Left* (β_1 + β_7 in equation 6) is still positive. Regarding the effects of changes in the fiscal policy during elections according to ideological divisions, it does not seem to exist any significant difference between parties: all of them perceive equal and positive electoral returns from higher budget balance, revenues and spending during electoral periods.

Table 19 shows that electoral outcomes are not much affected by changes in revenues along the term (non-electoral years) or during elections, except by a slightly positive effect coming from higher term's average *Capital Transfers Grants*. Hence, parties from different ideological positions do not perceive electoral advantages by following different fiscal revenues strategies. In this sense, it is interesting to note the insignificant effect of *Tax Revenues* on reelection probability, regardless of the period covered (term's average or election times) or ideological distinctions, meaning that increases or decreases in such burdensome taxation do not affect the voting behaviour of local citizens.

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[70] The best explanation for a higher voter preference for balanced budgets at the expense of a preference for higher expenditures is found in Drazen and Eslava (2010), where voters are fiscal conservatives but have a taste for higher types of (targeted) expenditures.

[71] Although the table shows a negative coefficient on *Left* conditioned on the covariates when *Budget Balance* is the fiscal variable (first column), the Wald test of equality of coefficients of *Right* and *Left* is not rejected, showing that parties from different ideological positions do not differ in their marginal probability of reelection conditioned on their fiscal budget policy.

TABLE 19 - Probit Regressions on the Probability of Reelection (2001-2008) - Revenues Variables
Dependent Variable: Reelection of Party

Independent Variables:	Independent Fiscal Variables:		
	Tax Revenues	Current Transfers Grants	Capital Transfers Grants
Term's Average (log)[1]	0.0637	0.025	0.0119***
	(0.043)	(0.021)	(0.003)
Electoral Year Change (%)[2]	0.0998	0.000	0.000
	(0.063)	(0.000)	(0.000)
Right	-0.1714	-0.1239	-0.042
	(0.185)	(0.084)	(0.062)
Left	-0.0373	-0.0737	-0.0984
	(0.223)	(0.103)	(0.079)
Term's Average*Right	0.0244	0.018	-0.0037
	(0.045)	(0.028)	(0.005)
Electoral Year Change*Right	-0.0223	0.000	0.000
	(0.079)	(0.000)	(0.000)
Term's Average*Left	-0.019	-0.021	-0.0035
	(0.053)	(0.034)	(0.006)
Electoral Year Change*Left	-0.0795	0.000	0.000
	(0.098)	(0.000)	(0.000)
Pseudo R-squared	0.041	0.041	0.042
N	6782	6782	6781
Wald (chi2)	354.9763	352.9984	366.5595
Log Likelihood	-4221.06	-4221.892	-4214.472
Right = Left (p-value) [3]	0.5374	0.6094	0.4273
*Term's avg*Right = Term's avg*Left (p-value)* [3]	0.4066	0.2465	0.9771
*Elect year*Right = Elect year*Left (p-value)* [3]	0.5289	0.593	0.5111
Joint interactions not significant (p-value) [4]	0.8478	0.8008	0.8701

Source: Author's estimates

Table presents estimates from pooled Probit regressions, with cluster robust standard erros (at the municipal level) shown in parenthesis. Control variables: share of current transfers over total revenues, share of votes in the last elections, fractionalization index in the last elections, political alignment between mayor's and governor's parties (1st and 2nd half of mayor's mandate), political alignment between mayor's and president's parties (1st and 2nd half of mayor's mandate), population, municipal real GDP per capita (term's average for non electoral years), electoral year variation in municipal real GDP per capita and state dummies. [1]Refers to the average value of the corresponding fiscal variable for non electoral years. [2]Refers to the percentage change of the corresponding fiscal variable between electoral year and its average for non electoral years. [3]Refers to tests of equality of coefficients, under the null hypothesis that the coefficients are equal. [4]Refers to test of joint significance of the interaction variables, under the null hypothesis that the coefficients are jointly insignificant. *** 1% significance level; ** 5% significance level; * 10% significance level

At last, Table 20 presents the electoral returns from the spending side. In all categories, higher term's average and higher electoral year changes in spending increase the chances of reelection of parties in general.[72] While the coefficients on term's average spending present similar magnitudes, the higher coefficients on *Electoral Year Change* for *Current Expenditures* and *Personnel Expenditures* suggest that opportunistic increases in such spending categories are particularly fruitful, although with no particular advantage for parties from different ideological positions. Summarizing the results from Table 20, there is strong evidence in favour of a positive voter response towards increased government expenditure over the term and during elections. All spending variables were positive and significant on reelection probability, especially for opportunistic increases in *Current Expenditures* and *Personnel Expenditures*. This makes sense when we have in mind that these expenditures clearly generate immediate and tangible economic returns to voters. While "last minute" increases in *Capital Expenditures* and *Capital Investments* also provide positive electoral pay offs, the effects are not as strong. As discussed before, this is expected once such investments have a longer time lag to generate returns to voters and politicians.

The findings from this subsection indicate that voters care about higher government spending, but recognize a sustainable fiscal policy, as confirmed by the positive and significant results for *Budget Balance* (Table 18). Thus, voters in Brazil possess traits of fiscal conservatism over the budget balance, but having a preference for higher investments along the term and higher current expenditures during elections. Moreover, voters' responses to fiscal policies do not differ significantly between parties. In other words, Brazilian voters reward higher government spending and balanced budgets in general, regardless of ideological preferences.

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[72] Once again, left-wing parties present an upfront electoral advantage which offsets its relatively smaller winning chances when they enact higher term's average Current and Personnel Expenditures.

TABLE 20 - Probit Regressions on the Probability of Reelection (2001-2008) - Spending Variables
Dependent Variable: Reelection of Party

Independent Variables:	Independent Fiscal Variables:			
	Current Expenditures	Capital Expenditures	Personnel Expenditures	Capital Investments
Term's Average (log)[1]	0.3142***	0.3042***	0.2668***	0.3100***
	(0.075)	(0.047)	(0.074)	(0.043)
Electoral Year Change (%)[2]	0.6366***	0.0755**	0.5770***	0.0629**
	(0.194)	(0.036)	(0.174)	(0.030)
Right	0.022	-0.0736	-0.0185	-0.1046
	(0.571)	(0.290)	(0.524)	(0.260)
Left	1.5728**	0.1683	1.3925**	0.2361
	(0.726)	(0.353)	(0.684)	(0.313)
Term's Average*Right	-0.0208	-0.0013	-0.009	0.0044
	(0.083)	(0.058)	(0.084)	(0.054)
Electoral Year Change*Right	0.3769	0.0089	0.0353	0.020
	(0.278)	(0.047)	(0.239)	(0.039)
Term's Average*Left	-0.2536**	-0.0584	-0.2436**	-0.0749
	(0.105)	(0.071)	(0.110)	(0.065)
Electoral Year Change*Left	0.204	-0.0375	-0.185	-0.0279
	(0.344)	(0.046)	(0.284)	(0.039)
Pseudo R-squared	0.048	0.048	0.050	0.050
N	6782	6782	6782	6782
Wald (chi2)	421.219	419.062	398.4307	433.9012
Log Likelihood	-4191.14	-4191.222	-4203.001	-4181.984
Right = Left (p-value) [1]	0.0303	0.4892	0.035	0.2698
*Term's avg*Right = Term's avg*Left (p-value)* [1]	0.025	0.4203	0.0295	0.2208
*Elect year*Right = Elect year*Left (p-value)* [1]	0.6138	0.2785	0.4288	0.1989
Joint interactions not significant (p-value) [2]	0.0717	0.745	0.1979	0.5462

Source: Author's estimates

Table presents estimates from pooled Probit regressions, with cluster robust standard erros (at the municipal level) shown in parenthesis. Control variables: share of current transfers over total revenues, share of votes in the last elections, fractionalization index in the last elections, political alignment between mayor's and governor's parties (1st and 2nd half of mayor's mandate), political alignment between mayor's and president's parties (1st and 2nd half of mayor's mandate), population, municipal real GDP per capita (term's average for non electoral years), electoral year variation in municipal real GDP per capita and state dummies. [1]Refers to the average value of the corresponding fiscal variable for non electoral years. [2]Refers to the percentage change of the corresponding fiscal variable between electoral year and its average for non electoral years. [3]Refers to tests of equality of coefficients, under the null hypothesis that the coefficients are equal. [4]Refers to test of joint significance of the interaction variables, under the null hypothesis that the coefficients are jointly insignificant. *** 1% significance level; ** 5% significance level; * 10% significance level

5.3. Comparing Parties' Fiscal Strategies and Voters' Electoral Responses

In this subsection, it will be analysed if political parties in Brazil have adopted electorally effective fiscal strategies according to voters' preferences during the 2001-2004 and 2005-2008 mandates by comparing the results from subsections 5.1. and 5.2.

From Tables 15 and 18, we see that the reduction in *Total Revenues* and *Total Spending* during elections under centrist parties – as shown by the negative coefficients on *Electoral Year* in Table 15 – is misaligned with a voters' preference for higher revenues and expenditures during elections, as confirmed by the positive coefficients on *Electoral Year Change* in Table 18. Besides, the positive but insignificant change in *Budget Balance* is also misaligned with a strong preference for more balanced budgets. Parties from the left and the right seem to have explored these electoral year preferences with more efficacy: left-wing parties increase their reelection chances by meeting voters' preferences for higher revenues and spending during elections, while right-wing parties are very effective in exploring the higher preference for a balanced budget at the last year of their mandate.

None of these parties, however, seem to be adequately attending voters' expectations for higher revenues, spending and balanced budgets along the term (non-electoral years), since they present lower term's average figures when compared with those from the base group of centrist parties, although most of the times the coefficients are insignificant. This is especially true for right-wing parties, who seem to present lower budget balances along the term, when in fact voters deserve a more positive budget.

Turning now to the revenues variables (Tables 16 and 19), we see that parties in general decrease *Tax Revenues* in the election years and compensate it with increases in *Current* and *Capital Transfers Grants*, while do not differ much along their term's average revenues. However, electoral outcomes are not much affected by changes in revenues along the term (non-electoral years) or during elections, so that parties do not get much distinct electoral advantages from different revenues strategies. Therefore, since voters do not respond significantly to tax reductions or grants increases, parties who follow distinct collection strategies are not being particularly favoured nor harmed. But if different revenues are used to finance different types of expenditures and these have distinct effects on voting behaviour, then what really matters to parties is to identify what types of expenditures voters mostly care about.

Finally, the analysis of the spending strategies (Tables 17 and 20) show a positive voters' response towards increased government expenditure in all spending categories over

the term and during elections, with the strongest effects being observed for electoral year increases in *Current Expenditures* and *Personnel Expenditures*. However, the results in Table 17 show that parties reduce spending in these two rubrics during elections, thus lowering their electoral competitiveness. In this scenario, left-wing parties seem to be following a more electorally effective fiscal strategy: they spend about 4% less in *Capital Expenditures* and *Capital Investments* over their term (non-electoral years), which goes counter voters' preferences, but compensate this reduction with a 12% to 13% higher increase in investments during elections and a much more modest reduction in *Current Expenditures* and *Personnel Expenditures*. Such fiscal strategy appears to be focused on the higher sensitivity voters have over current and personnel expenditures, especially during elections.

VI. Conclusions

The present study provided an integrated empirical analysis of both the opportunistic and partisan effects on fiscal cycles in local elections in Brazil. Its main goal was to check whether different partisan ideologies were associated with different opportunistic fiscal policies as local elections approached. Moreover, it investigated whether different fiscal strategies during elections as well as over the parties' mandates resulted in distinct reelection chances depending on the ideological position of parties.

The results have confirmed the presence of a significant association between opportunistic and partisan fiscal policies at the local level in Brazil, with parties from different ideological cleavages adopting different fiscal strategies during elections. The most significant and strong effects were observed under left-wing administrations, who enacted higher changes in capital grants and capital expenditures (e.g. investments) in electoral years. A positive and significant change in the budget balance during elections was observed only for right-wing parties. As for revenues variables, while all parties have equally adopted opportunistic reductions in local taxation, further and partially compensated by increases in current transfers grants, leftist parties were able to get extra funds by additionally increasing capital transfers grants.

In terms of the average fiscal policy adopted by parties throughout their mandates (non-electoral years), partisan differences were not as strong, except by a slightly looser budget balance under right-wing administrations and lower levels of investments under left-wing ones.

When it comes to the effects of opportunistic and partisan fiscal policies on electoral outcomes, the results provide strong evidence in favour of a positive voter response to increased total government revenues and expenditures over the term and during elections. All spending variables were positive and significant on the reelection probability, especially for opportunistic increases in current and personnel expenditures. The positive and significant results for budget balance indicate that Brazilian voters care about higher government spending, but recognize a sustainable fiscal policy. Worth pointing out is that this general preference for higher government spending and balanced budgets do not depend on ideological preferences. The insignificant results for tax revenues suggest that voters do not reward higher local taxation. Thus, voters in Brazil possess traits of fiscal conservatism over the budget balance, but only insofar as they are not the ones paying the taxes to finance the higher public expenditures.

The comparison between parties' fiscal strategies and voters' electoral responses show that leftist parties have been relatively more effective than right-wing parties on their fiscal strategies. First, right-wing parties appear to present a relatively lower fiscal balance throughout the mandate, when in fact voters reward higher average budgets during the term. Second, it was shown that voters reward positive changes in all spending categories during elections regardless of partisan preferences, particularly favouring electoral year increases in *Current Expenditures* and *Personnel Expenditures*. But while most parties lower their reelection chances by reducing current and personnel expenditures during elections, parties from the left seem to get an electoral advantage over their competitors by promoting a much more modest reduction in such critical expenditures while compensating this loss with higher changes in capital related expenditures, which find some voters' support.

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Appendix

TABLE 1A - Logit Regressions on the Probability of Reelection (2001-2008)

Dependent Variable: Model (1): Reelection of Mayor and/or Party
Dependent Variable: Model (2): Reelection of Party

Independent Variables:	Budget Balance (R$)		Total Revenues (log)		Total Spending (log)	
	(1)	(2)	(1)	(2)	(1)	(2)
Term's Average (log)[1]	3.5133***	1.9163	0.6452***	0.4132***	0.5889***	0.3747***
	(1.277)	(1.298)	(0.143)	(0.141)	(0.144)	(0.143)
Electoral Year Change (%)[2]	1.1566	1.1153	0.6242*	0.5095	0.4092	0.2232
	(0.740)	(0.744)	(0.324)	(0.325)	(0.301)	(0.303)
First Term Mayor	1.2919***	0.8076***	0.0998	-1.083	0.3200	-0.7818
	(0.071)	(0.071)	(0.948)	(0.949)	(0.964)	(0.959)
Term's Average*First Term Mayor	1.5279	2.5849*	0.1501	0.2567*	0.1320	0.2215
	(1.435)	(1.425)	(0.136)	(0.136)	(0.139)	(0.138)
Electoral Year Variation*First Term Mayor	1.3720	0.8212	1.3007***	1.0489***	0.8615**	0.8863**
	(0.875)	(0.847)	(0.383)	(0.376)	(0.355)	(0.355)
Current Transfers / Total Revenues (%)	-0.8324**	-0.8500***	0.278	0.047	-0.2031	-0.3441
	(0.331)	(0.330)	(0.359)	(0.355)	(0.352)	(0.348)
Share of votes (%)	0.0586***	5.1337***	0.0611***	5.3489***	0.0609***	5.3340***
	(0.007)	(0.698)	(0.007)	(0.697)	(0.007)	(0.696)
Fractionalization index	4.5239***	3.9812***	4.8108***	4.2268***	4.8123***	4.2272***
	(0.698)	(0.703)	(0.700)	(0.702)	(0.698)	(0.701)
Mayor same party Governor (1st half)	-0.0785	-0.0166	-0.0908	-0.0234	-0.0959	-0.0269
	(0.067)	(0.068)	(0.068)	(0.069)	(0.067)	(0.068)
Mayor same party Governor (2nd half)	0.4327***	0.6790***	0.4292***	0.6764***	0.4291***	0.6744***
	(0.074)	(0.074)	(0.074)	(0.074)	(0.074)	(0.074)
Mayor same party President (1st half)	-0.0479	-0.0457	0.0976	0.0718	0.0621	0.0415
	(0.090)	(0.090)	(0.091)	(0.092)	(0.091)	(0.092)
Mayor same party President (2nd half)	0.6972***	0.9150***	0.4861***	0.7466***	0.5358***	0.7856***
	(0.129)	(0.125)	(0.129)	(0.126)	(0.129)	(0.126)
Population (log)	-0.1138***	-0.0977***	0.1094**	0.0818*	0.0695	0.047
	(0.030)	(0.031)	(0.043)	(0.043)	(0.042)	(0.043)
Real GDP per capita, term's average (log)	0.1056**	0.1301**	-0.1764***	-0.0938	-0.1502**	-0.0699
	(0.053)	(0.056)	(0.069)	(0.070)	(0.068)	(0.069)
Real GDP per capita, electoral year variation (%)	0.2578*	0.3671**	0.046	0.2004	0.0934	0.2374
	(0.154)	(0.156)	(0.160)	(0.164)	(0.157)	(0.161)
Constant	-6.2998***	-5.9650***	-11.6122***	-9.5627***	-10.6547***	-8.8211***
	(0.978)	(1.001)	(1.399)	(1.397)	(1.393)	(1.398)
Pseudo R-squared	0.09	0.07	0.10	0.08	0.09	0.07
N	6786	6782	6786	6782	6786	6782
Wald (chi2)	691.85	524.4502	762.37	578.0476	761.34	547.2635
Log Likelihood	-4235.61	-4099.207	-4190.032	-4071.298	-4219.662	-4089.103

Source: Author's estimates

Table presents estimates from pooled Logit regressions, with cluster robust standard erros (at the municipal level) shown in parenthesis. All regressions include state dummies. Model (1): dependent variable equals 1 if the mayor and / or the party was reelected. Model (2): dependent variable equals 1 if only the party was reelected. [1]These refer to the average value of the corresponding fiscal variable for non electoral years. [2]These refer to the percentage change of the corresponding fiscal variable between electoral year and its average for non electoral years. *** 1% significance level; ** 5% significance level; * 10% significance level

TABLE 2A - Logit Regressions on the Probability of Reelection (2001-2008) - Revenues Variables

Dependent Variable: Model (1): Reelection of Mayor and/or Party
Dependent Variable: Model (2): Reelection of Party

	Independent Fiscal Variables:					
	Tax Revenues		Current Transfers Grants		Capital Transfers Grants	
Independent Variables:	(1)	(2)	(1)	(2)	(1)	(2)
Term's Average (log)[1]	0.1294*	-0.0095	-0.0249	-0.038	0.006	0.0099
	(0.076)	(0.078)	(0.040)	(0.040)	(0.007)	(0.007)
Electoral Year Change (%)[2]	0.1364	0.1362	0.000	0.000	0.000	0.000
	(0.110)	(0.111)	(0.000)	(0.000)	(0.000)	(0.000)
First Term Mayor	1.2567***	0.3369	1.1914***	0.6566***	1.2300***	0.8167***
	(0.278)	(0.280)	(0.128)	(0.130)	(0.092)	(0.094)
Term's Average*First Term Mayor	0.0269	0.1419**	0.074	0.1035**	0.0141*	0.0082
	(0.067)	(0.068)	(0.046)	(0.047)	(0.008)	(0.007)
Electoral Year Variation*First Term Mayor	0.0117	-0.0054	0.000	0.000	0.000	0.000
	(0.133)	(0.130)	(0.000)	(0.000)	(0.000)	(0.000)
Pseudo R-squared	0.08	0.06	0.08	0.06	0.08	0.07
N	6786	6782	6786	6782	6785	6781
Wald (chi2)	658.08	504.5715	654.24	499.4642	674.5	513.1862
Log Likelihood	-4260.685	-4115.494	-4263.036	-4115.762	-4253.419	-4109.611

Source: Author's estimates

Table presents estimates from pooled Probit regressions, with cluster robust standard erros (at the municipal level) shown in parenthesis. Model (1): dependent variable equals 1 if the mayor and / or the party was reelected. Model (2): dependent variable equals 1 if only the party was reelected. Control variables: share of current transfers over total revenues, share of votes in the last elections, fractionalization index in the last elections, political alignment between mayor's and governor's parties (1st and 2nd half of mayor's mandate), political alignment between mayor's and president's parties (1st and 2nd half of mayor's mandate), population, municipal real GDP per capita (term's average for non electoral years), electoral year variation in municipal real GDP per capita and state dummies. [1]These refer to the average value of the corresponding fiscal variable for non electoral years. [2]These refer to the percentage change of the corresponding fiscal variable between electoral year and its average for non electoral years. *** 1% significance level; ** 5% significance level; * 10% significance level

TABLE 3A - Logit Regressions on the Probability of Reelection (2001-2008) - Spending Variables

Dependent Variable: Model (1): Reelection of Mayor and/or Party
Dependent Variable: Model (2): Reelection of Party

| | Independent Fiscal Variables: | | | | | | | |
| Independent Variables: | Current Expenditures | | Capital Expenditures | | Personel Expenditures | | Capital Investments | |
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Term's Average (log)[1]	0.4407***	0.2205	0.4983***	0.4114***	0.3350**	0.0844	0.5116***	0.4530***
	(0.144)	(0.145)	(0.092)	(0.092)	(0.140)	(0.142)	(0.085)	(0.084)
Electoral Year Change (%)[2]	0.5698	0.5299	0.0597	-0.0008	0.3402	0.3253	0.0495	-0.0072
	(0.409)	(0.418)	(0.059)	(0.061)	(0.335)	(0.345)	(0.052)	(0.053)
First Term Mayor	0.4592	-0.7664	0.3136	-0.2384	0.2143	-0.8953	0.5281	0.0831
	(0.952)	(0.961)	(0.484)	(0.481)	(0.862)	(0.883)	(0.434)	(0.428)
Term's Average*First Term Mayor	0.1087	0.2237	0.2259**	0.2365**	0.1607	0.2742*	0.1907**	0.1786**
	(0.139)	(0.140)	(0.097)	(0.096)	(0.140)	(0.143)	(0.090)	(0.089)
Electoral Year Variation*First Term Mayor	1.2123**	0.9664**	0.0811	0.1259	1.0957***	0.7377*	0.0839	0.1273*
	(0.474)	(0.480)	(0.080)	(0.077)	(0.390)	(0.394)	(0.066)	(0.065)
Pseudo R-squared	0.09	0.07	0.09	0.08	0.09	0.07	0.10	0.08
N	6786	6782	6786	6782	6786	6782	6786	6782
Wald (chi2)	714.57	541.5737	722.33	567.2658	703.45	525.87	737.68	577.0291
Log Likelihood	-4222.208	-4092.032	-4202.369	-4070.773	-4230.125	-4101.712	-4190.16	-4060.239

Source: Author's estimates

Table presents estimates from pooled Logit regressions, with cluster robust standard erros (at the municipal level) shown in parenthesis. Model (1): dependent variable equals 1 if the mayor and / or the party was reelected. Model (2): dependent variable equals 1 if only the party was reelected. Control variables: share of current transfers over total revenues, share of votes in the last elections, fractionalization index in the last elections, political alignment between mayor's and governor's parties (1st and 2nd half of mayor's mandate), political alignment between mayor's and president's parties (1st and 2nd half of mayor's mandate), population, municipal real GDP per capita (term's average for non electoral years), electoral year variation in municipal real GDP per capita and state dummies. [1]These refer to the average value of the corresponding fiscal variable for non electoral years. [2]These refer to the percentage change of the corresponding fiscal variable between electoral year and its average for non electoral years. *** 1% significance level; ** 5% significance level; * 10% significance level