Why has Participatory Budgeting Declined in Brazil?*

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Participatory Budgeting (PB) is a democratic policy innovation created in Brazil in the early 1990s, recognized worldwide as an effective policy tool for directly involving the population in budget decisions. Its diffusion in Brazil was strongly stimulated by the Workers’ Party (Partido dos Trabalhadores - PT) as a showcase of the ‘Petista Way of Governing’. However, after the party took the presidential office, PB lost its status as a top participatory policy. Without its leading promoter, PB gradually declined in Brazil. What explains such a drastic change in PT’s policy preference? What are the possible explanations for the retrenchment of PB? We argue that gradual changes in fiscal laws have led to lower investment and tighter local budgets, reducing the effectiveness of PB and discouraging further adoption of this policy, thus resulting in its decline in Brazil. The shift in PT’s policy preference is therefore explained by the fact that the party adapted to the context of increasing budgetary rigidity. Using panel data analysis, we found that both the adoption and the continuity of PB at the local level between 1996 and 2016 are strongly correlated with budget and investment, a finding that supports our initial hypothesis.

Keywords: Participatory budgeting; policy failure; local politics; fiscal policy; participation.

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Participatory Budgeting (PB) is a democratic innovation that enables the population to be directly involved in decisions about the local budget. The output of this participatory process is a definition of investment priorities, usually made at the neighborhood level (WAMPLER, 2008, p. 69). Activists and government officials linked to the Workers’ Party (Partido dos Trabalhadores - PT) created the PB in the Brazilian city of Porto Alegre in 1990. Later, in 1996, UN Habitat acknowledged it as a ‘Good Practice for Urban Governance’². Since then, the World Bank and activist networks have worked to spread this practice worldwide, making PB and its foundational experience the subject of much scholarly work (ABERS, 2000; AVRITZER and NAVARRO, 2003; BAIOCCHI, 2003; DOUGLASS and FRIEDMANN, 1998; SANTOS and AVRITZER, 2009; WAMPLER, 2007). Although PB has been adopted by local governments in several parts of the world, the most successful and well-known cases are in Latin America (Brazil, Peru, Argentina, Uruguay, Ecuador, Colombia) and Europe (Portugal, Italy, Germany, Spain, and France) (CABANNES, 2004; GOLDFRANK, 2012; OLIVEIRA, 2017; SHAH, 2007; SINTOMER, HERZBERG and RÖCKE, 2012). Between 1989 and 2016, 267 Brazilian municipalities under the administration of various political parties adopted PB programs for at least one mayoral administration period. However, the PT accounts for most of the cases, in both relative and absolute numbers – the policy is clearly associated with the party. Adoption of PB in Brazil peaked precisely when the PT was elected to the federal government in 2002 (for the 2003-2006 term). After that, PB adoption decreased continuously until 2016; if this declining rate was kept constant, PB would disappear by 2024 in Brazil (SPADA, 2012). Despite its decline in its place of origin, Brazil, PB is still expanding worldwide (CABANNES, 2004; GOLDFRANK, 2012; OLIVEIRA, 2017; SHAH, 2007; SINTOMER, HERZBERG and RÖCKE, 2012).

The diffusion of PB follows PT’s electoral growth, at least until the early 2000s. However, after the PT won the presidency, PB lost its status as a top priority policy, and other forms of civil society participation were stimulated

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²This award was granted to the city of Belo Horizonte, the capital of the State of Minas Gerais, during Patrus Ananias’ (PT) administration (1993-1996) and not to the city of Porto Alegre as some might assume. For more information, we refer the reader to the UN Habitat Best Practices Database <http://mirror.unhabitat.org/bp/bp.list.aspx>.
instead. Although Lula’s government plan for the 2002 presidential elections included ‘implementing a national PB’, the proposal simply disappeared from the party’s documents and debates after the election (BEZERRA, 2019).

Similarly, while in the presidential office, the PT did not create any policy mechanism designed to stimulate local governments to adopt or maintain PB programs. Neither scholars nor the party has yet explained the motivation behind this drastic change in policy preference.

We argue that the set of fiscal rules created in the early 2000s reduced PB effectiveness by restricting discretion over budget allocation and investment expenditures at the local level. Because of all the red tape involved in local budget execution, local governments are constrained in their capacity to deliver public works and improvements defined by citizens in PB processes. By not being able to deliver on its promises, citizen participation loses accountability and effectiveness. Budget constraints thus make this policy ineffective and unable to generate the expected electoral returns. These disincentives might explain why the policy was gradually abandoned. In making this argument, however, we are not disregarding other political and institutional intervening factors addressed by the literature, but rather complementing them.

The importance of investment resources has been mentioned in case studies (GOLDFRANK, 2007; LUCHMANN, 2002). In addition, evidence gathered from our interviews with PT leaders and bureaucrats and from the analysis of newspaper articles helped develop our initial hypotheses: budgetary rigidity would have undermined PB’s political appeal – the decline of this policy would thus be explained by the party’s adaptation to increasing budgetary rigidity.

To test these hypotheses, we used a panel model with data from all Brazilian municipalities from 1996 to 2016. This model took into consideration previous works on the diffusion and decline of participatory budgeting (SPADA, 2014; WAMPLER, 2008) and made some improvements in terms of data accuracy, economic variables, and model specification. Our results show that budgetary variables are relevant for explaining first-adoption as well as the continuity of PB implementation. The most significant factors that correlated with first-time adoption of PB by municipalities are: 01. having PT as the incumbent party, 02. larger population, and 03. higher per capita budget. The most
significant factors that correlated with PB continuity are the following: 01. political continuity, 02. higher per capita budget and 03. higher investment expenditures. These findings demonstrate that municipalities with less room for budgetary maneuvers are more likely to abandon PB or never even adopt it. In short, the key political and economic explanatory factors for long-time adoption of PB are: more extended period with PT as an incumbent, higher per capita budget, and investment expenditures.

The remainder of this article is divided into four sections. The first section presents how scholars addressed this topic and how our argument fills the gap in this debate. Next, we present our hypothesis, explaining the ways in which changes in legislation generated constraints that reduced mayoral discretion over budget allocation. The third section, which is divided into four subsections, outlines our hypothesis, describes our panel-data model, and presents our main results. Lastly, we present our conclusion.

**Participatory Budgeting: diffusion and retrenchment**

While the emergence and expansion of PB were the subject of numerous case studies, PB retrenchment in Brazil received little attention. This neglect is not unusual in the case of policy failures and abandonment in general, both for political and technical reasons such as lack of interest in highlighting failures and lack of data due to policy interruption (SPADA and RYAN, 2017; VOLDEN 2016). In this regard, studies on PB seem to follow a pattern common to other policies. A policy may be considered a failure either for political reasons, such as losing public support, or technical reasons, such as failing to effectively solve the problem it was meant to address. In either case, whenever a policy fails, it is expected to be abandoned (VOLDEN, 2016).

Participatory Budgeting was created in Porto Alegre in 1990, following PT's first electoral victory in the city. In 1992, more than half of PT's newly elected municipalities had adopted it. In 2000, almost all PT municipalities had adopted PB, attesting to the importance of this policy to the party at the time. Although several other cities in Brazil had previously had experiences of citizen participation in budget allocation, such as Lages (SC) and Boa Esperança (ES) (BAIOCCHI, 2003), but the name Participatory Budgeting and its assembly format were created in Porto Alegre (BEZERRA, 2020).
other parties were also implementing PB programs, the PT accounts for 60% of the municipalities adopting this policy that year. In 2004, PB adoption in Brazil peaked, reaching 137 cases. In the following mayoral administration period, PB began to gradually decline.

Figure 01 presents three graphs with different perspectives on PB diffusion and retrenchment. Graph A shows the general trend, all cases considered, for the whole period under study (1992-2016). Graph B shows PB cases by party ideology in absolute numbers for the period 2000-2016⁴, and Graph C reveals the proportion of cities adopting PB by party in the same period.

The intensity of PB retrenchment varies according to the political party. The absolute number of cities with PB that are led by PT mayors remains relatively stable until 2012 but falls sharply as of 2000 as we consider the number of cities with PB as percentage of the total number of cities governed by the party. The trajectory of PB does not follow PT’s electoral growth between 2000 and 2016.

Over these three decades of PB implementation, the scholarly approach on PB has moved from a civil society-centric view to gradually incorporate the role of representative political institutions and actors, such as governments and parties (SOUZA, 2021, 2016). When PB was first created, in the early 1990s, the main concern was about its potential effects regarding the deepening of democracy and enhancing of civic engagement. The emphasis on the role of civil society stood out (AVRITZER, 2002, 2000; SANTOS, 1998), although studies were already highlighting the role played by the PT (ABERS, 1996). Methodologically, the analyses involved case studies of successful pioneering experiences such as those in the cities of Porto Alegre and Belo Horizonte.

In the 2000s, PB cases spread out in Brazil and other countries. As studies were addressing more variability in cases, scholars began pointing out limitations of explanatory factors such as associative tradition and rulers’ ‘political will’ (LÜCHMANN, 2014). Critics of overly normative understandings of civil society’s role in the democratization of the state also gained visibility (DAGNINO, 2002; 2004).

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⁴There is no complete electoral dataset available for Brazilian municipal elections prior to 1996. In Brazil, since the 1988 Constitution, all levels of the federation have four-year terms of office, with municipal elections alternating with general elections (federal and state level). Thus, every two years, Brazil has a massive electoral process – for example, Brazil’s last municipal election was held in 2020, and the next general election will be held in 2022.
Why has Participatory Budgeting Declined in Brazil? (LAVALLE, 2003). Empirically, there was a significant number of either country-level or cross-national comparative case studies. The analytical focus was mainly on institutional design, political and institutional factors explaining PB success, and possible effects on democracy (AVRITZER and NAVARRO, 2003; BAIOCCHI, Heller, and SILVA, 2008; GOLDFRANK, 2007; LÜCHMANN, 2002; WAMPLER, 2007).

**Figure 01.** Participatory Budgeting over time in Brazil

![Graph showing Participatory Budgeting over time](image)

Source: Elaborated by the authors based on FGV/CEPESP (2020) and Spada (2012).

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Note: Parties at the center of the political spectrum (Center) are PMDB, PSDB, and PV. Left-wing parties other than the PT (Other Left-wing) are PSB, PDT, PC do B, and PSOL. All other cases (22 parties) are labeled as right-wing parties. Only cities with a population of more than 50,000 people in 1996 were considered. Since data on the 1992 election is unavailable, the graphs do not show information on parties for the year 1996. The complete list of party acronyms and their ideological classification is in the paper's git repository (<https://github.com/Murilojunqueira/FinancasParticipacao2018>); file ‘doc/Tables/Party Appendix.docx’.)
As PB diffusion was slowing down in Brazil, other participatory formats such as public policy councils and conferences emerged, and studies on PB are incorporated into a more general debate on participatory institutions (LÜCHMANN, 2014). Contrary to perspectives that value either the state or society, a new relational approach understands that state and social actors mutually constitute participatory spaces (LAVALLE, HOUTZAGER, and CASTELLO, 2006).

Participatory Budgeting is still spreading worldwide, and efforts are currently being made to understand the processes and mechanisms of national and international PB diffusion (OLIVEIRA, 2017). Although the promotion of PB was initially associated with left-wing parties (GOLDFRANK, 2007; SINTOMER, HERZBERG, and RÖCKE, 2012), this policy eventually became ideologically neutral, as multilateral agencies, such as the World Bank, embraced this initiative and included it in their discourses (GANUZA and BAIOCCHI, 2012; OLIVEIRA, 2017). In different ideological, cultural, and economic contexts, scholars face the challenge of comparing multiple PB designs, an endeavor that required the creation of concepts, criteria, and typologies that allowed for cases to be compared (SINTOMER, HERZBERG, and RÖCKE, 2012).

In Brazil, scholars agree on two sets of explanations for the successful implementation and continuity of PB: one the one hand, those related to political actors and institutions, such as parties, city councilors, and mayors; on the other hand, factors associated with state capacities, such as budget allocation and logistic infrastructure. With respect to the political dimension, comparative case studies indicate that the incumbent party’s reelection, the degree of institutionalization of the opposition party, and the relationship established between the executive and legislative branches are all crucial factors affecting PB continuity in each municipality (BORBA and LÜCHMANN, 2007; DIAS, 2002; GOLDFRANK, 2007; NYLEN, 2003; SOUZA, 2011).

As for state capacity, Goldfrank (2007) argues that the success of PB depends on greater administrative decentralization and, consequently, greater mayoral discretion over budget allocation and resource availability. Lüchmann (2002) also highlights state capacities such as resource availability and logistics as key institutional elements. Nonetheless, institutional factors are also considered as an
important element. Pires and Martins (2011) note that, at least in Brazil, there are no in-depth analyzes of the technical budget-financial dimension of PB.

Souza (2021) analyzes the role of political parties during the adoption of PB, especially the incumbent party and its legislative coalition. Since the budget process involves both branches of government, PB adoption is necessarily affected by this political relationship. This author uses counterfactual analysis of three pairs of cities – all of which have adopted PB programs and have similar sociodemographic characteristics – and takes the incumbent party and the cross-party alliance supporting the mayoral administration as independent variables. With respect to PT mayors, Souza (2021) concludes that the electoral strength, continuity, and greater degree of PB institutionalization are related to smaller and more ideologically homogeneous legislative coalitions.

Efforts have been made in quantitative analyses to test for factors conditioning both political and state capacities (SPADA, 2014; WAMPLER, 2008). These efforts were constrained partially due to the low reliability of available data6. Wampler (2008) analyzes the effects of the following factors: the PT as the incumbent party, presence of left-wing parties in the legislature, civil society networks, Human Development Index, region (South), and investment expenditures. The only significant factor explaining PB diffusion in Wampler’s study (2008) is having the PT as the incumbent party.

Spada (2014), in turn, tests four hypotheses based on political, geographical, and economic factors – respectively the effects of having PT as the incumbent party and the political vulnerability of local governments, proximity with other cities where PB programs are implemented, and the availability of resources. His findings reinforce the argument that having the PT as the incumbent party is the

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6 Until the release of the Brazilian Participatory Budgeting Census (SPADA, 2012), the available data on Participatory Budget programs in Brazil were sparse and inaccurate. Of all the efforts made to gather better data, we highlight an initial survey from the National Forum of Popular Participation (FNPP), for the 1989-1996 period, to which Ribeiro and Grazia (2003) added data for the 1997-2000 period. Finally, Wampler (2008) expanded the survey for the 2000-2004 period. Different methodologies were thus used for each period of data collection, making comparison and reliability difficult. Fedozzi, Lima and Martins (2014) and other authors use data gathered by the Brazilian Participatory Budgeting Network (RBOP) for the 2009-2012 period. We did not find any clear description of the methodology used by that network; also, its website is out of service (www.redeopbrasil.com.br). From this perspective, Spada’s (2012) thorough and consistent methodology for data collection is unique.
key factor in PB diffusion. Following Hunter’s (2010) argument, Spada (2014) suggests that the retrenchment of PB – for which the reasons remain inconclusive in his model – might be related to changes in PT’s political strategy, motivated by the election of Lula for the presidential office in 2002. According to Hunter (2010), the PT adopted PB as a strategy to reach the presidency, but once in the federal government, the party abandoned the policy as if its purposes had already been achieved. Her argument, which was based solely on a review of case studies, seemed plausible for most scholars in the field since there was no national PB – as expected (BAIOCCHI and CHECA, 2007) – and no other explanations for the decline of PB.

However, Spada’s (2014) use of this argument is problematic for at least a methodological and theoretical reason. On the one hand, Spada’s model (2014) uses only year dummies (time fixed effects) to control for shifts in the general trend in PB, which means that his argument is based only on the fact that PB went into decline after 2002. Spada (2014) attributes this effect to Lula’s rise to power, but much changed after 2002. For example, there are fiscal, economic, and administrative changes that should not be underestimated. On the other hand, Spada (2014) and Hunter (2010) fail to provide a proper explanation for the changes in PT’s preference regarding participatory policies. Given that PB helped the party come to power in 2002, why did the PT renounced it when running in the next elections?

Bezerra (2020) argues that the explanation for why the PT abandoned PB does not lie in Lula’s rise to power, but rather in something that occurred before that: the relaxation of the party’s alliance policy. When the PT was observing its stringent alliance policy, the party’s local administrations were mostly minority governments, with coalitions of only left-wing parties. As the party was aiming at the 2002 presidential election, it loosened its policy to allow center and center-right parties to join their coalitions, thus paving the way for broader coalitions in PT governments. She argues that a more ideologically heterogeneous coalition will most likely be reluctant to bear the political costs that PB imposed on Congress. At the same time, the party no longer needed to approve its budget proposal since it was governing with a majority coalition.
In our view, PB was abandoned not mainly because of a national strategy designed by the PT, but rather due to a bottom-up disappointment – the disappointment on the part of PT mayors and local constituents -, which led the party to resort to a strategy of policy drift. The fact that PB adoption declined among all political parties (Figure 01), regardless of ideology (left- or right-wing) or position concerning the government (supporters or opposition), suggests that a diffuse mechanism has been promoting the gradual abandonment of this policy. If PB was still generating positive political returns, one would expect that the PT and other political parties would continue to invest in it. Our study addresses this gap in the literature by arguing that increasing fiscal constraints have led to gradual policy abandonment: as local governments failed to deliver on what citizens had previously deliberated about, participants became frustrated and the participatory instrument lost efficacy. We explain this hypothesis in the next section.

**Increasing difficulties in implementing PB**

The design of PB programs in Brazil varies from place to place since there is no national- or state-level regulation on the issue. Citizen participation is a constitutional principle, but there is much variation in the ways in which this principle is put into practice, ranging from neighborhood assemblies to digital participation formats, depending on the various PB designs and different ways in which citizens participate. There is also significant variation in how much of the budget is to be debated: while Porto Alegre would present the entire budget plan, including revenues and expenses, Belo Horizonte would yearly define a share of investment resources for deliberation. Wampler (2007) is one of the few authors who offer a comparative analysis with several case studies, looking at the specific designs of PB in different cities. Marquetti et al. (2008), in turn, analyzed five different PB programs and their redistributive effects.

However, there is one important national regulation directly undermining the implementation of PB programs at the local level: fiscal laws. To understand variation in PB in Brazil, it is crucial to first figure out the way in which fiscal laws work. Even when mayors determine that the entire budget plan is to be debated, like...
in Porto Alegre, citizens will only be able to decide on the use of the discretionary resources, which mainly consist of investment expenses\(^7\).

Drawing on the literature and on insights from interviews, we noted that PT leaders and bureaucrats felt that it was increasingly difficult to implement citizens’ PB demands, although such perception is not explicitly indicated in the party’s documents. Participatory Budgeting was not perceived as an effective mechanism for allocating resources and ‘answering the demands of the population’ because of ‘bureaucratic obstacles’ that created delays in completing the public works projects beyond the fiscal year or even beyond the mayoral administration period. Despite properly disclosing citizens’ demands, PB processes were only able to fully implement the elected priorities when they consisted in simple projects, such as paving streets and building sidewalks. Any large-scale project that required land expropriation or for which there was no budget – and therefore needed funding from other levels of government or from international sources – would not be completed within the mayoral administration period.

What has changed so that it became increasingly difficult for local governments to properly implement an awarded program? During the late 1990s, gradual changes were made in fiscal regulation, which were eventually consolidated into the Fiscal Responsibility Law (Lei de Responsabilidade Fiscal, Lei Complementar 101/2000, also known as LRF). The focus of the LRF is to ensure that all entities, especially states and municipalities, follow controlled and sustainable fiscal parameters\(^8\).

\(^7\)In Brazil, budget expenditures are classified as current expenditures (cost expenses + transfers) or capital expenditures (investment + financial investment). Current expenditures correspond to expenses with public service provision, such as wages, maintenance, and consumable goods. As current expenditures ensure a continuous provision of public services, they are mostly mandatory by law now. Capital expenditures, on the other hand, are used to acquire, maintain, or upgrade public assets such as land, buildings, equipment, and public companies. Capital expenditures are mostly discretionary. We chose to only consider investment, isolating it from strictly financial expenditures, in order to better capture material investments, which include all public works in urban areas – from street paving, lighting, and sewer installation to the construction of bridges or monuments.

\(^8\)The LRF is not only about controlling general expenditures, it also focuses specifically on personnel expenditure and the appropriate use of federal transfers in health and education policy systems (LEITE and PERES, 2010). Some of the main innovations include restrictions on personnel expenditure, indebtedness, and anticipation of budget revenue, as well as a ban on long-term future expenditures (of more than two years) without a previously defined source of funding.
Despite its positive effects on the fiscal balance of state and local governments, the LRF had an undesired negative impact on the availability of investment resources at the local level. Menezes and Toneto Jr. (2006) demonstrate that, while investment expenditures sharply declined (21.7%) between 1998 and 2004 as a direct consequence of the LRF, personnel and current expenditures were not affected, and that debt interest, debt charges, and loan amortization expenditures had actually increased. Schettini (2012) argues that when confronted with a budget imbalance, local governments tend to adjust by prioritizing expenditure reduction over an increase in revenue. As local budgets are mostly composed of mandatory expenditures, the cut is made on discretionary expenditures, such as investments.

Another federal regulation that significantly impacted the fiscal autonomy of local governments during the 1990s refers to the constitutional provisions for social policies, particularly health and education. These rules established mandatory spending on social policies, constraining other types of expenses, such as investments. Since the 1988 Constitution, Brazil’s federal system has moved towards decentralization of social services under centralized guidelines (ARRETCHE, 2012; GUICHENY, JUNQUEIRA, and ARAÚJO, 2018). Even though this institutional design has improved welfare services, it gradually reduced local governments’ budgetary autonomy.

Therefore, municipalities in the beginning of the 1990s were in a very different scenario in fiscal and budgetary terms compared to that of the early 2000s. Although there has been an increase in revenue from municipal taxes and federal transfers in this period (LEITE and PERES, 2010), the fact that revenues had been rigidly earmarked for pre-defined expenditures and that expenditures are steadily increasing (PERES and MATTOS, 2017) has left municipalities with little room for budget maneuvers. Consequently, local governments are currently facing a high

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9 The most important piece of legislation is the Law on Education Guidelines and Frameworks (Lei de Diretrizes e Bases da Educação - Lei n 9394/1996, also known as LDB), which was accompanied by the creation of the National Fund for Elementary Education (FUNDEF - Fundo Nacional do Ensino Fundamental - Constitutional Amendment 14/1996), which became FUNDEB - Fundo Nacional da Educação Básica in 2006. As for the health policy, Constitutional Amendment 29/2000 established that 15% of tax revenues are earmarked for health expenditures.
level of budgetary rigidity: although they have access to a considerable amount of revenue, they also have a large volume of mandatory expenditures. Thus, even with a balanced budget, local governments may strive to manage their discretionary investment budget – the only type of budget resource under deliberation in PB processes\(^{10}\).

**Panel data analysis**

**Hypothesis**

We hypothesize that local governments have gradually stopped adopting PB due to increasing fiscal and bureaucratic constraints. The set of fiscal regulations created throughout the 1990s directly affects PB effectiveness because local decision makers’ discretion in fiscal issues is constrained as a result of both the reduction in investment expenditures (public works)\(^{11}\) and the increase in budgetary rigidity that followed the earmarking of revenues. This hypothesis draws on our analysis of Brazilian fiscal policy, on our review of the literature on participatory budgeting, and on insights from interviews with PT leaders and bureaucrats who participated in the implementation of PB programs in Porto Alegre, Fortaleza, and São Paulo in different periods\(^{12}\).

If our hypothesis is correct, our model should predict that municipalities with higher levels of investment expenditures, a proxy for budget flexibility, are more likely to adopt and maintain PB programs.

\(^{10}\)Despite being an issue beyond the scope of this article, there is evidence suggesting that rigidity in bureaucratic procedures has also increased in the 1992-2016 period. According to Motta (2010), the succession of corruption scandals in Brazilian politics – especially those related to public procurement – resulted in new regulations that created more red tape and legal risk in public purchases, making these processes more costly and inefficient.

\(^{11}\)The qualitative data have also shown that bureaucratic procedures and weak state capacities at the local level correlate with delays in completing and delivering public works. Although this is a relevant issue, it will not be the focus of analysis of this paper.

\(^{12}\)These interviews are part of another research effort, which sought to analyze PT’s national participatory policies, and they will not be explored in this paper. Although the insights from these interviews were instrumental for developing our hypothesis, we do not intend for this paper to be based on mixed-method research since there is no integration between methodologies. Detailed information about these interviews can be found in Bezerra (2020, pp. 239-241).
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Model

Our model tests the probability that PB will be adopted and maintained in Brazilian municipalities; Spada's model (2014), which incorporates most of the variables described by qualitative and quantitative literature (DIAS, 2002; NYLEN, 2003; SOUZA, 2011; WAMPLER, 2008), is used here as a baseline. We added other variables to this baseline and completely reformulated the functional form of the model to treat the interactive and temporal nature of the variables. For example, certain variables do not affect the likelihood of PB adoption in cities where PB had not been implemented in the previous mayoral administration (PB first-time adoption), but the same variables have a significant impact on PB continuity. As a result, our model became much more complex, but also more accurate than previous efforts.

We grouped our model covariables into three sets: economic, demographic, and temporal adjustment variables. First, to test our hypothesis, we used the municipal per capita budget and the investment budget (as percentage of the total budget) as financial variables. These variables are strong and consistent predictors of the likelihood of a municipality adopting PB. Second, we added population in its natural logarithm as a control variable. As population correlates to a series of factors, by ignoring this variable we might have introduced a bias into the model. We use interactive models to demonstrate that the probability of either left- or right-wing parties adopting PB varies according to population size. Third, we model path dependence, or temporal adjustment variables. We chose to work with interactive modeling, using the entire sample and exploring the interaction between the existence of PB in the previous mayoral administration and very significant

13 Complete data and all model replication codes are available at <https://github.com/MuriloJunqueira/FinancasParticipacao2018>.

14 We do not use the geographic variables from Spada’s model (2014) because they are not significant in terms of continuity in the original model and because there was no theoretical reason to try a different measure.

15 Spada (2014) uses other financial variables (tax revenues as percentage of total revenues and total expenditures as percentage of total revenues), finding no statistical significance. In fact, these are not the most adequate variables to analyze neither the available amount of resources nor the fiscal discretion of municipalities.

16 Larger cities are likely to generate more tax revenues and benefit from larger budgets and more efficient bureaucracies, for example.
variables to explain the likelihood of PB continuity or abandonment. The descriptive statistics of the variables are presented in Table 1 in the Appendix.

The analysis follows a panel data model with fixed effects of time. The model’s basic reasoning, with the respective matrices of variables, are detailed below:

\[ E(PB_{i,t}) = \alpha + \beta_1 \text{PATH}_{i,t} + \beta_2 \text{POL}_{i,t} + \beta_3 \text{ECO}_{i,t} + \beta_4 \text{POP}_{i,t} + \beta_5 \text{INT}_{i,t} + \beta_6 \text{FE}_{i,t} + \varepsilon_{i,t} \]

01. PB Variable: The dependent variable is a dummy variable with a value of one if the municipality had adopted PB in a given term, and zero if it had not adopted the program. For cases valued as one, the PATH variables inform whether there is a new case of PB adoption or a continuation of the program already adopted in previous administrations.

02. Path Variables (PATH). To evaluate the effect of path dependence, we use two variables. The first is whether the municipality had PB in the previous mayoral administration or not, the lagged dependent variable. The second variable is the number of accumulated periods during which the municipality adopted PB. The assumption behind this last variable is that the longer this policy is implemented in a city, the harder it is to dismantle it.

03. Political variables (POL). Among these, we have variables for estimating partisan control, political continuity, and political vulnerability. First, to estimate partisan control, we use a dummy variable with a value of 1 if the incumbent mayor is a member of the PT\textsuperscript{17}. We also include a variable indicating whether the incumbent is from a left-leaning party (PT, PSB, PDT, PCdoB, and PSOL\textsuperscript{18}) to control for the effect of the left in general (not just PT) on the probability of PB adoption. Finally, we control for different PT behaviors before and after the party took the presidential office in 2003 using a dummy variable with the value of 1 for periods after 2003.

\textsuperscript{17}We are referring to incumbent mayors, not recently elected mayors. Thus, for the variable to take the value of one in a given city in 2000, a PT mayor must have been elected in that city in the 1996 election for the 1997-2000 term.

\textsuperscript{18}These parties (except for PSOL) are very likely to form alliances with the PT. Other Brazilian left-wing parties were not considered in this study since they did not have an incumbent mayor in any municipality.
Second, we control for the effects of political continuity. For that purpose, we use a dummy variable that has the value of one if there is party continuity, and another dummy variable with the value of one if the mayor is reelected (mayor reelection). These variables may overlap, but there are cases in which the mayor has a successor from the same party (because by law mayors can only be reelected once) and cases in which mayors switch parties (and get reelected). We expect that, if a party or mayor adopts PB in the first term, they are more likely to do so also in the second term.

Finally, we control for mayors’ political vulnerability, measured by the ratio of votes for the runner-up to the votes for the mayor’s party and by the percentage of seats occupied by the incumbent party in the city council (legislative body).

04. Economic and Fiscal Variables (ECO). Our hypothesis — that higher investment budget correlates with PB adoption — is measured by the investment ratio (investment budget as percentage of total expenditures). Municipal public budget per capita (in its natural logarithm) is used as a control variable, for there might be other discretionary expenditures not captured by our first variable and because cities with larger budgets are likely to have better staff and stronger administrative capacity.

05. Population or scale variables (POP). We use the natural logarithm of the population as a control variable. The descriptive statistics show that larger cities are more likely to adopt PB than smaller cities.

06. Interactions (INT). We present three types of interaction terms. The first set of interactions uses the lagged dependent variable to identify the most important political and financial factors explaining PB adoption and continuity. To assess political continuity, we use two interactions of PB lagged variables: mayor and party reelection. As for the financial variables, we used two interactions with PB lagged variable: investment budget and per capita total budget (log). The second set of interactions uses the population (log) to assess changes in party behavior as the size of cities varies. We interact population (log) with the following variables: PT mayors, left-wing mayors, and PT mayors after 2002. Finally, the last interaction
term is included between per capita total budget (log) and investment budget to assess whether the amount – and not only the share – of investment is relevant.  

07. Fixed Effects (FE): These are dummies for each period analyzed. The fixed-effects model aims to capture influences not explained by the model variables in a certain period, that is, the extent to which unknown factors explain changes observed in a specific period. The database includes five periods: 1997-2000, 2001-2004, 2005-2008, 2009-2012, and 2013-2016. The first two are periods of PB diffusion and the last three are periods of PB retraction.

We used two models in this study, derived from the basic equation laid out above. The first uses all the terms of the equation, except for the interactions. This model is more easily interpreted by simply looking at the coefficients in Table 02 (see Appendix). The second model includes the interactions. Since the interpretation of interactive models is not very intuitive (BRAMBOR, CLARK and GOLDER, 2006), we use a graphical approach to present and discuss the results (for the complete regression table, see Table 02 in the Appendix). For both the non-interactive and the interactive models, we ran a Fixed Effects Linear Predicted Model (LPM), which is simply the ordinary least squares method with a binary dependent variable. We also tested the same variables with the Logit model (not shown), of which the results did not differ significantly from the LPM.

Data sources

Our database was drawn from four different sources. Our dependent variable was extracted from the Brazilian Participatory Budgeting Census for the 1989-2012 period (SPADA, 2012), where the available data on existing PB programs in Brazil were gathered and updated (AVRITZER and WAMPLER, 2004; RIBEIRO and GRAZIA, 2003). The dependent variable is a dummy that captures whether PB exists or not in a municipality, for each mayoral administration period. Only municipalities that had more than 50 thousand inhabitants in 1996 are considered. Spada’s original dataset (2012) took as a reference the existence of PB

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19 It is not possible to add the value of per capita investment in the model, as there would be perfect collinearity with per capita total budget and investment budget.

20 Data and methodology of the Brazilian Participatory Budgeting Census for 1989-2012 are available at https://participedia.net/en/content/brazilian-participatory-budgeting-census. We are grateful to Paolo Spada for generously sending us his 2016 updated version of this dataset.
in the municipality during the three years prior to the reference year, which always marks the end of the political term. For example, the year 2000 refers to mayors elected in 1996 for the 1997-2000 term.

Our political variables were extracted from official electoral data from the Brazilian Superior Electoral Court (TSE), pre-treated by CEPESP Data. For the financial variables, we used a dataset provided by the National Treasury Department of the Ministry of Finance (STN/MF), called Brazil Finances: Accounting Data of Brazilian Municipalities (FINBRA). All data were deflated, using 2015 as the reference year. Finally, for the demographic data (population), we used data from the Brazilian Institute of Geography and Statistics (IBGE), pre-treated by the Institute for Applied Economic Research (IPEA). For all financial data, we used the average value for each piece of financial data for all four-year mayoral administration periods to avoid distortions caused by atypical economic behavior in a specific year.

Main results

Our results demonstrate that the most significant factors explaining PB first-time adoption in municipalities are the following: having PT as the incumbent party, larger population, and higher per capita budget. As for PB continuity, the most significant factors are per capita budget, political continuity, and higher investment budget. These results are consistent with our initial hypothesis, but they add more complexity to the issue. A higher investment budget is significant only for explaining PB continuity, not first-time adoption, which is better explained by per capita budget. Population is a relevant explanatory variable 'per se'; in interaction with political parties, it shows that, except for the PT, partisan behavior also varies according to the population size of cities.

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21 The acronym TSE stands for Tribunal Superior Eleitoral. CEPESP FGV is a Brazilian Research Center. For more information, we refer the reader to <http://www.cepesp.io>. For the 1996 election, we use information obtained directly from the TSE website, since data on this election are not available on the Cepesp dataset.


23 IBGE stands for Instituto Brasileiro de Geografia e Estatística. IPEA stands for Instituto de Planejamento e Economia Aplicada. For more information, see <http://www.ipeadata.gov.br>.
To analyze the interaction effects (INT) in the complete version of our model, we use a graphical approach, since interpreting interactive models from regression tables is not intuitive. In these graphs, the vertical axis displays the expected values of the dependent variable, $E(P_{B_i,t} = 1)$, that is the likelihood of a city adopting PB in a given year. The horizontal axis displays the interaction of selected independent variables. All other variables of the model that are not displayed in the graph are in their mean values. Also, all graphs provide 95% confidence intervals for the estimates. Except for Figure 04, all other graphs show a histogram in the background (out of vertical axis scale) depicting the distribution of the variable on the horizontal axis. The values were calculated using Zelig R Package (IMAI, KING, and LAU, 2008). The complete interactive model estimates are available in the Appendix (Table 02). The main findings of this study are the following: PT (and the left) as the incumbent party.

As expected, and similar to other scholars’ results (SPADA, 2014; WAMPLER, 2008), we found that having PT as the incumbent party is a strong predictor of both first-time PB adoption and PB continuity; however, this correlation decreases sharply after 2003. To interpret the effect of the PT in the non-interactive model, two variables should be combined: the PT and the PT after 2003. In cases prior to 2003, having the PT in the mayor’s office increases the probability that a municipality adopts PB by 78% (PT as incumbent: $\beta = 0.68$, and left-wing party as incumbent: $\beta = 0.1$). However, the variable PT as the incumbent party after 2003 presents a negative coefficient ($\beta = -0.43$). As these variables derive from each other, they must be examined together so they can be adequately interpreted. We found that, after 2003, municipalities led by PT mayors are 35% more likely to adopt PB than those led by non-PT mayors. In other words, PT remains an important predictor of PB adoption despite the sharp decline in PB adoption.
Why has Participatory Budgeting Declined in Brazil?

Figure 02. Probability of PB adoption by population size considering only PT mayors

Source: Elaborated by the authors.

Figure 03. Probability of PB adoption by population size and party ideology

Source: Elaborated by the authors. Expected values of model 02 (Appendix - Table 02).
Figure 04. Probability of PB adoption when there is political continuity

Source: Elaborated by the authors. Expected values of model 02 (Appendix - Table 02).

Population

The population variable shows that PB is more likely to be implemented in large cities. In fact, the descriptive statistic shows that 88% of Brazilian municipalities with more than 500,000 inhabitants have adopted PB at least once, a number that falls sharply as the population size decreases. This may help explain why PB has become a showcase program, even though it is not widely spread across Brazilian municipalities. Before 2003, the PT concentrated its presence in medium-sized and large cities, a fact that changed when the party took the presidential office and began to penetrate small towns. Figure 02 displays the interaction between the variables PT and municipal population, before and after 2003. It shows that the PT effect decreases in small and medium-sized cities. In cities with more than one million people, the PT's influence over PB adoption remained very high (80%) for the entire period. As shown in Figure 03, we extended the analysis by comparing the likelihood of PB adoption in cities with PT mayors, other left-wing mayors, and centrist or right-wing parties, and found that that PB adoption is strongly correlated with left-wing parties, especially in large cities.

Political continuity

The analysis of the political continuity of administrations considers three variables: party continuity, mayor reelection and their interaction with PB adoption.
in the previous term (lagged dependent variable). We present thus four scenarios: 01. reelected mayors who did not adopt PB in their first term; 02. reelected mayors who adopted PB in their first term; 03. Same party takes office in municipalities where the previous administration had not adopted PB; and 04. Same party takes office in municipalities where the previous administration had adopted PB. Figure 04 shows that reelected mayors or parties who did not adopt PB in their first term are very unlikely to adopt PB in their second term: about 06% and 12%, for mayors, and 11% and 18%, for parties, with 95% confidence. The situation is different when previous administrations had already adopted PB. In this case, reelected mayors are between 29% and 41% more likely to give continuity to PB programs, and same-party successors are between 29% and 44% more likely to do so. In other words, even in the case of political continuity, mayors are still more likely to abandon PB after its first adoption then to keep it\textsuperscript{24}. It is also important to consider the accumulative effect of PB being adopted more than once (PB accumulative). As expected, continuity becomes more likely the longer the program is implemented in a given municipality: for each additional year, the likelihood of continuity increases 6.5%, regardless of whether the party or mayor changes or not.

\textbf{Figure 05.} Estimated effects of per capita budget on the probability of PB adoption

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure05}
\caption{Estimated effects of per capita budget on the probability of PB adoption}
\end{figure}

Source: Elaborated by the authors. Expected values of model 02 (Appendix - Table 02).

\textsuperscript{24}As already mentioned, the figures consider the average values of the variables of the non-displayed model.
**Figure 06.** Estimated effects of investment on the probability of PB adoption

![Bar chart showing the probability of PB adoption vs investment budget](image)

Source: Elaborated by the authors. Expected values of model 02 (Appendix - Table 02).

**Financial variables**

The results show that per capita budget is an important predictor of PB adoption and continuity. Figure 05 displays the probability of PB adoption by interacting per capita budget (log) with the lagged dependent variable. The effect of first-time PB adoption, \( E(PB_{i,t} = 1| PB_{i,t-1} = 0) \), and the effect of PB continuity, that is PB adoption in a previous administration, \( E(PB_{i,t} = 1| PB_{i,t-1} = 1) \), are presented separately. The figure shows that rises in per capita budget increase the probability of a municipality both adopting and giving continuity to PB programs. This finding supports our hypothesis that better fiscal capacity increases the probability that a city will implement a PB program.

On the other hand, we found that the effects of investment budget on PB adoption vary dramatically according to whether municipalities had previously adopted PB or not, as shown in Figure 06. Municipalities that have already adopted PB are more likely to maintain the program if they have a larger proportion of investment expenditures. This finding is consistent with our hypothesis. However, in cases where there is no previous PB adoption, there is no significant correlation between investment budget and the probability of adopting the program.

Our model provides important findings that confirm our initial hypothesis: municipalities with more available budget resources are more likely to adopt and
give continuity to PB programs. Data show that municipalities with a higher per capita budget are more likely to adopt and give continuity to PB and that investment budget is a significant predictor of PB continuity. We can thus affirm that the increasing budgetary rigidity contributed to the decline of PB because it reduced the program’s effectiveness and undermined its continuity, as our qualitative research had already suggested.

In addition to demonstrating that financial variables are key to understanding why the PB adoption rate steadily declined, our model innovates by adding interactive analysis and incorporating the variables ‘population’ and ‘political continuity’. Different from what was found in Spada’s analysis (2014), apart from the variables ‘party’ and ‘political continuity’, other political variables did not appear to be statistically significant in any of the several models tested.

**Conclusion**

In the early 1990s, Brazilian municipalities had smaller budgets but greater room for budgetary maneuver, for there were fewer fiscal regulations – local governments thus relied heavily on creating future debts to secure resources – and less earmarked revenues. This scenario changed drastically after the issuing of a set of new fiscal regulations, notably the LRF in 2001. These regulations have contributed to keeping a balanced budget in federal unities, but they have also created unintended consequences, for example, a decrease in investment expenditures at the local level. In addition, laws governing social policies have earmarked revenues to guarantee the right to education and health services (with local governments receiving federal transfers), which also increased budgetary rigidity at the local level.

By the time the PT was elected to the federal government, PB was the party’s main showcase policy, adopted massively in the municipalities led by PT mayors (93% of PT municipalities had adopted PB between 1996 and 2000, and 87.5% between 2000 and 2004). For the PT, taking the presidential office meant new policy opportunities and political priorities; at the same time, PB programs were not bringing the same positive results as before.
The distributive conflict over budget resources among the various interested actors in the executive and legislative branches increased. In this context of strong budgetary rigidity and scarce resources for new investments at the local level, the survival of PB as a local-level participatory policy would require some type of regulation to encourage its implementation. These federal incentives are common and applied in cases of high-dissemination social policy councils (LAVALLE and BARONE, 2019; MAYKA, 2018), and even in the case of PB in Peru, where a national law mandates all municipalities to adopt PB (OLIVEIRA, 2017). In the absence of other political or fiscal incentives, the program follows a trajectory of inertial discontinuity and is being gradually abandoned.

What makes a policy successful is its effectiveness in delivering a public service or good. In the case of PB, its effectiveness refers to its ability to achieve its participatory goal: allowing the population to decide budget priorities and see such priorities be implemented. And a key condition for implementing it is having resources available. The expected beneficial secondary effect of this policy is to bring electoral rewards for politicians, which is contingent on implementing effective programs, thus creating incentives for politicians to keep implementing PB.

On the other hand, it is hard to deliver high-quality services with fewer resources. In the case of PB, participation might be perceived as ineffective: citizens define the priorities, but there is no budget to ensure that goods or services are actually delivered. This mismatch generates frustration among citizens and discourages politicians from adopting PB.

In short, we argue that due to gradual changes in fiscal legislation, which have led to more rigid municipal budgets and created bureaucratic obstacles to completing public works projects, the effectiveness of budgetary decision-making by the population has been reduced. In this scenario, and without new institutional incentives for PB, new adoptions were discouraged, and only long-term successful cases are likely to survive. Between 2003 and 2016, the PT stopped promoting PB and sought alternative participatory policies in the federal government25, a shift that intensified PB retrenchment.

25While at the presidency (2003-2016), PT’s participatory program was continued by expanding arenas known as national public policy councils and conferences (BEZERRA, 2019).
Our study sheds new light on the reasons for PB discontinuity. Our model reinforces previous findings regarding first-time adoption, identifying an important connection between the incumbency of the PT and the adoption of PB in municipalities. However, there is a lack of consensus in the literature as to the reasons for the abandonment of PB, which so far has been explained strictly as a top-down decision by the PT (HUNTER, 2010; SPADA, 2014), the argument being that the party’s main goal would be to win the presidency, and that, after achieving it, the party’s preferences changed. Our results, on the other hand, provide an alternative and original explanation, one that points to the fact that this policy lost effectiveness and became more politically costly, which in turn has led to increasing bottom-up disappointment, which also explains its gradual abandonment.

Although this argument is based on economic and fiscal constraints, it does not disregard political and institutional factors, which could be jointly addressed to find a stronger explanation, especially since the PT has played a prominent role in promoting PB. The arguments linking PB retrenchment to the loosening of PT’s alliance policy (BEZERRA, 2020; SOUZA, 2021) and to the party’s victory in the 2002 presidential election (BAIOCCHI and CHECCA, 2007; HUNTER 2010; SPADA, 2014) are somehow referring to interrelated events, as the first was an enabling factor for the second. Since the PT won the presidency with a broad and ideologically heterogeneous coalition, the party was not able to fully implement its original program and had to negotiate several policies – including its participatory policies – with its allies. However, the argument that PT’s policy preference changed because the party realized that PB was failing due to fiscal constraints remains a key explanation for the shift in the party’s policy preference.

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Appendix

Table 01. Summary statistics

<table>
<thead>
<tr>
<th>Statistic</th>
<th>N</th>
<th>Mean</th>
<th>St. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participatory Budget (PB)</td>
<td>2,182</td>
<td>0.20</td>
<td>0.40</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>PB in t-1 (LDV)</td>
<td>2,182</td>
<td>0.19</td>
<td>0.39</td>
<td>0</td>
<td>1</td>
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<tr>
<td>PB Accumulative</td>
<td>2,182</td>
<td>0.31</td>
<td>0.79</td>
<td>0</td>
<td>6</td>
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<tr>
<td>City Population</td>
<td>2,182</td>
<td>249,539.80</td>
<td>663,983.00</td>
<td>37,374</td>
<td>12,038,175</td>
</tr>
<tr>
<td>PT Mayor</td>
<td>2,182</td>
<td>0.15</td>
<td>0.35</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>PT Mayor After 2002</td>
<td>2,182</td>
<td>0.13</td>
<td>0.34</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Left Party (including PT)</td>
<td>2,182</td>
<td>0.30</td>
<td>0.46</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Party continuity</td>
<td>2,182</td>
<td>0.29</td>
<td>0.45</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Mayor Reelection</td>
<td>2,182</td>
<td>0.23</td>
<td>0.42</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Mayor’s Vulnerability</td>
<td>2,182</td>
<td>0.72</td>
<td>0.25</td>
<td>0.02</td>
<td>4.02</td>
</tr>
<tr>
<td>Mayor’s Legislative Power</td>
<td>2,182</td>
<td>0.20</td>
<td>0.11</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>City Budget per capita</td>
<td>2,182</td>
<td>1,678.65</td>
<td>920.25</td>
<td>150.29</td>
<td>8,618.58</td>
</tr>
<tr>
<td>Investment Budget</td>
<td>2,182</td>
<td>0.10</td>
<td>0.05</td>
<td>0.004</td>
<td>0.32</td>
</tr>
<tr>
<td>City Population (log)</td>
<td>2,182</td>
<td>11.85</td>
<td>0.84</td>
<td>10.53</td>
<td>16.30</td>
</tr>
<tr>
<td>City Budget per capita (log)</td>
<td>2,182</td>
<td>7.30</td>
<td>0.51</td>
<td>5.01</td>
<td>9.06</td>
</tr>
</tbody>
</table>

Source: Elaborated by the authors²⁶.

## Table 02. Regression models

<table>
<thead>
<tr>
<th>Dependent Variable: Participatory Budget (PB)</th>
<th>Basic Model</th>
<th>Interactive Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lag Dependent Variable (PB&lt;sub&gt;t-1&lt;/sub&gt;)</td>
<td>0.083** (0.034)</td>
<td>-0.060 (0.323)</td>
</tr>
<tr>
<td>PB Accumulative</td>
<td>0.068*** (0.016)</td>
<td>0.064*** (0.017)</td>
</tr>
<tr>
<td>Population (log)</td>
<td>0.078*** (0.009)</td>
<td>0.060*** (0.011)</td>
</tr>
<tr>
<td>PT Mayor</td>
<td>0.694*** (0.069)</td>
<td>2.032** (0.930)</td>
</tr>
<tr>
<td>PT Mayor After 2002</td>
<td>-0.432*** (0.070)</td>
<td>-1.108 (0.936)</td>
</tr>
<tr>
<td>Left Party (including PT)</td>
<td>0.111*** (0.020)</td>
<td>-0.911*** (0.264)</td>
</tr>
<tr>
<td>Party continuity</td>
<td>0.007 (0.020)</td>
<td>-0.037 (0.023)</td>
</tr>
<tr>
<td>Mayor’s Vulnerability</td>
<td>0.002 (0.030)</td>
<td>0.002 (0.029)</td>
</tr>
<tr>
<td>Mayor’s Legislative Power</td>
<td>-0.058 (0.072)</td>
<td>-0.043 (0.071)</td>
</tr>
<tr>
<td>Mayor reelection</td>
<td>-0.041* (0.022)</td>
<td>-0.052** (0.024)</td>
</tr>
<tr>
<td>City Budget per capita (log)</td>
<td>0.069*** (0.018)</td>
<td>0.124*** (0.034)</td>
</tr>
<tr>
<td>Investment Budget</td>
<td>-0.254 (0.158)</td>
<td>2.928 (1.855)</td>
</tr>
<tr>
<td>Year Dummies 2004</td>
<td>0.135*** (0.024)</td>
<td>0.146*** (0.024)</td>
</tr>
<tr>
<td>Year Dummies 2008</td>
<td>0.043* (0.026)</td>
<td>0.054** (0.026)</td>
</tr>
<tr>
<td>Year Dummies 2012</td>
<td>-0.055* (0.028)</td>
<td>-0.045 (0.028)</td>
</tr>
<tr>
<td>Year Dummies 2016</td>
<td>-0.159*** (0.029)</td>
<td>-0.154*** (0.030)</td>
</tr>
<tr>
<td>Population (log) * Left Party</td>
<td>0.085*** (0.022)</td>
<td>-0.110 (0.077)</td>
</tr>
<tr>
<td>Population (log) * PT Mayor</td>
<td>-0.110 (0.077)</td>
<td>0.052 (0.077)</td>
</tr>
<tr>
<td>Population (log) * PT Mayor After 2002</td>
<td>0.034 (0.051)</td>
<td>0.054** (0.026)</td>
</tr>
<tr>
<td>LDV * Mayor reelection</td>
<td>0.193*** (0.049)</td>
<td>1.192*** (0.402)</td>
</tr>
<tr>
<td>LDV * Party continuity</td>
<td>0.052 (0.077)</td>
<td>0.054** (0.026)</td>
</tr>
<tr>
<td>LDV * Investment Budget</td>
<td>-0.458* (0.256)</td>
<td>-0.154*** (0.030)</td>
</tr>
<tr>
<td>City Budget per capita (log) * Investment Budget</td>
<td>-0.150 (0.215)</td>
<td>1.192*** (0.402)</td>
</tr>
<tr>
<td>LDV * City Budget per capita (log)</td>
<td>0.085*** (0.022)</td>
<td>-0.110 (0.077)</td>
</tr>
<tr>
<td>Constant</td>
<td>-1.293*** (0.154)</td>
<td>-1.458*** (0.263)</td>
</tr>
<tr>
<td>Observations</td>
<td>2,182</td>
<td>2,182</td>
</tr>
<tr>
<td>R²</td>
<td>0.324</td>
<td>0.342</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.319</td>
<td>0.335</td>
</tr>
<tr>
<td>Residual Std. Error</td>
<td>0.329 (df = 2165)</td>
<td>0.325 (df = 2157)</td>
</tr>
<tr>
<td>F Statistic</td>
<td>64.952***</td>
<td>46.775***</td>
</tr>
<tr>
<td></td>
<td>(df = 16; 2165)</td>
<td>(df = 24; 2157)</td>
</tr>
</tbody>
</table>

Source: Elaborated by the authors\(^27\).

Note: *p<0.1; **p<0.05; ***p<0.01

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