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# SOCIAL SPENDING AND ACCOUNTING GIMMICKS: A PERCEPTION OF ELECTORAL POLITICAL CYCLES IN BRAZIL'S MIDWEST

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## ABSTRACT

This research aimed to verify to what extent the practices of accounting gimmicks affect fiscal policies and the execution of social spending during political electoral cycles. We use a logit model to analyze the public accounts of 466 municipalities in Brazil's Midwest region in an unbalanced panel from 2004 to 2017. With a unique specificity, Brazilian municipalities have shown difficulties in maintaining efficient fiscal performance. A theoretical approach to fiscal regimes emphasizes that the fiscal rigidity by which governments are led can boost accounting manipulation practices, especially in SFA (Stock-flow adjustment). Such practices aim to improve budget results to increase political visibility and stay in power. The findings allowed to partially corroborate with the literature that there is a positive relationship between the rigid fiscal rules and the practices of accounting gimmicks. It was also possible to verify that situations of high levels of financial dependence and political opportunism for reelection are drivers in the occurrences of these manipulations. Therefore, it was concluded that the use of social spending, in line with a theoretical approach to rigid tax regimes and the Theory of Political Electoral Cycles, is influenced by the opportunistic behavior of managers and by the practices of accounting gimmicks.

**Keywords:** Accounting gimmicks. Stock-flow adjustment. Fiscal Rules. Social public spending. Electoral political cycles.

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# GASTOS SOCIAIS E ACCOUNTING GIMMICKS: UMA PERCEPÇÃO DOS CICLOS POLÍTICOS ELEITORAIS NOS MUNICÍPIOS DO CENTRO-OESTE BRASILEIRO

## RESUMO

Essa pesquisa objetivou verificar em que extensão as práticas de *accounting gimmicks* afetam as políticas fiscais e a execução dos gastos sociais durante os ciclos políticos eleitorais. Por meio de um modelo *logit*, foram analisadas as contas públicas dos 466 municípios da região centro-oeste brasileira em um painel desbalanceado no período de 2004 a 2017. Com uma especificidade singular, os municípios brasileiros têm apresentado dificuldades na manutenção de um desempenho fiscal eficiente. Uma abordagem teórica dos regimes fiscais enfatiza que a rigidez fiscal pela qual os governantes são conduzidos pode impulsionar práticas de manipulações contábeis, especialmente nos saldos do SFA (*Stock-flow adjustment*). Tais práticas visam melhorar os resultados orçamentários mirando a visibilidade política e a permanência no poder. Os achados permitiram corroborar parcialmente com a literatura de que há uma relação positiva entre as regras fiscais rígidas e as práticas de *accounting gimmicks*. Ainda foi possível constatar que situações de elevados índices de dependência financeira e de oportunismo político para reeleição são impulsionadores nas ocorrências dessas manipulações. Portanto, concluiu-se que a utilização dos gastos sociais, alinhados a uma abordagem teórica dos regimes fiscais rígidos e da Teoria dos Ciclos Políticos Eleitorais, é influenciada pelo comportamento oportunista dos gestores e pelas práticas de *accounting gimmicks*.

**Palavras-chave:** *Accounting gimmicks*. *Stock-flow adjustment*. Regras fiscais. Gastos Sociais. Ciclos políticos eleitorais.

## 1 INTRODUCTION

The complexity of public management has generated great efforts in the efficient reconciliation of the execution of expenses, provision of services, and the fulfillment of fiscal targets. The creation of the Fiscal Responsibility Law (LRF) in 2000, brought a new vision for Brazilian fiscal policy. In this new dimension is the braking of the uncontrolled increase in public spending due to the rise in social demands of the government with distributive policies and with the objective of political control, in addition to greater accountability of the manager regarding the use of these expenses (Santos, Machado & Scarpin, 2013).

First, the ratio of public expenditure and tax collection is the goal to be achieved by different governments to keep the economy balanced, since the costs of fiscal indiscipline can directly affect the stabilization of the economy (Montes & Alves, 2012). However, the likelihood of an unsuccessful fiscal balance increases as demand for public services massively exceeds resource allocation. To control the negative effects of this situation and try to solve the problems, governments adopt models of fiscal rules (Vinnari & Näsir, 2008).

Empirical and theoretical literature has presented, through a political-institutional approach, a way to explain the phenomenon of economic behavior and State intervention. In this way, fiscal regimes act as strategic agents for

directing government policy. They are classified into three distinct types: ideal, flexible, and rigid (Von Hagen & Wolff, 2006; Menezes & Tonedo Junior, 2006; Gobetti, 2014; Lledó, Yoon, Fang, Mbaye & Kim, 2017; Gonçalves, 2018).

While some researchers present restrictive fiscal rules as being effective and capable of reducing the deficit, inflation, and interest rates, in addition to adapting more quickly to unexpected recessions (Besley & Case, 2003; Fatás & Mihov, 2006; Arestis & Sawyer, 2008; Sacchi & Salotti, 2015), other researchers indicate that the rules may induce distortions of public spending against investments, as well as an increase in the tax burden (Milesi-Ferreti, 2003; Von Hagen & Wolff, 2006; Gobetti, 2014; Oskaya, 2014). In the latter case, the public manager will tend to reduce the degree of fiscal transparency, in addition to causing artificial expenses or non-recurring revenues to meet the goals.

Furthermore, with the imposition of fiscal targets, the public manager reduces their discretionary power to use public spending, making it impossible for resources to be invested in activities of opportunistic allocation preferences (Salvador, 2016). In this context of rigid fiscal rules, more specifically focused on numerical rules, accounting gimmicks seem to be more recurrent (Buti, Martins, & Turrini, 2007). The concept of accounting gimmicks is linked to the fiscal context, in which governments use a variety of deliberate attempts (tricks) to improve the appearance of their public accounts (Alt, Lassen, & Wehner, 2014).

According to Gobetti (2014), the Brazilian's fiscal regime is considered rigid and needs to undergo restructuring to distance itself from a deficit bias with a political nature. Notwithstanding, the government's lack of careful regulation and rational choices has allowed public spending to suffer from the mismatch between expenditure and investments, compromising the quality of the service provided. In this context, the public manager, who is often unable to fulfill electoral promises, seeks accounting devices to adjust fiscal results and meet the goals established in government plans (Dalmonch, Sant'Anna, Coimbra, & Teixeira, 2008).

In this perspective, politicians have incentives to distort the local fiscal policy in pre-election periods, to increase their probability of permanence or succession of allies in power. The study aims are to verify the influence of accounting gimmicks practice on social spending in periods of electoral political cycles in the municipalities of the Brazilian's Midwest. For this, we analyzed information from the regional accounts and public finances of the municipalities. The data are presented in an unbalanced panel, from 2004 to 2017, comprising four electoral cycles - 2004, 2008, 2012, and 2016.

It is known that there are disparities in the interregional political and economic context (Simonassi & Cândido Junior, 2008). Another important point is the fact that regions with low purchasing power and subnational governments tend to be more influenced by the opportunistic behavior of politicians aligned with clientelist practices that manipulate public spending. In this regard, the study is justified since the existence of stricter fiscal rules can induce the manipulation of data by the government, given that the gimmicks are sufficient means to deceive those stakeholders involved to achieve the fiscal goals.

## 2 LITERATURE REVIEW

### 2.1 Accounting Gimmicks

The literature has endeavored to present a long and extensive knowledge regarding accounting manipulations in the corporate context. However, for the activities that took place in the government scenario, the academic effort did not receive such importance (Beck, 2018). This is in contrast to the new social perspective aimed at more transparent processes and with higher levels of accountability for managers.

Eventually, in the publication of government results, there may be a tendency to disclose positive information that satisfies users of the public service. From this, there is an attraction to the practice of accounting gimmicks. This term has a similar conceptual relationship with the term creative accounting. Its origin goes back to the comments made by the professionals of the accounting area and by the media about the activities that took place in the public sector in an attempt to demonstrate to users a different reality, mainly in the economic context. Thus, both terms are considered to be extremely general and distanced from any specific theory (Stolowy & Breton, 2004; Beck, 2018).

The intention is to maneuver reality, mainly budgetary so that public accounts present a positive performance and that government transactions assume an improvement in the budget balance. According to Alt et al. (2014), the practice of accounting gimmicks is related to the choices that the public managers make concerning their voters. One of these choices concerns the adjustment of taxes and expenses, even observing the imposed fiscal rules. This fact minimizes institutional pressure, but it can generate unpopularity. It is important to exclude non-cyclical factors from this, such as natural disasters, which provide large unforeseen expenses (Koen & Van den Noord, 2005).

Oskaya (2014) identified that accounting gimmicks can go beyond the internal structures of a government. Based on data from Turkey's public debt, the results of its research identified that the government practiced accounting devices to transmit distorted information to the International Monetary Fund (IMF) and ease international pressures. In Brazil, Gobetti and Orair (2017) showed that accounting gimmicks became a practice commonly used in an attempt to minimize or avoid the rigidity of the fiscal regime of primary result targets, harming the reliable information of the historical series for analysis of fiscal policy.

In this perspective, the empirical and theoretical studies that seek to measure the levels of earnings management or accounting devices in the public scenario, unlike the private scenario, are still incipient. For Goto and Yamamoto (2018), the work presented by Milesi-Ferrati (2003) is an exception for the insufficiency of theoretical studies in the area. Milesi-Ferrati presented a theoretical assumption that clarifies the actions of governments on the effects of fiscal rules and that can identify the practices of accounting gimmicks through the data reported incorrectly. As a result, discrepancies between changes in debt and the budget deficit are identified, generating a statistical residue known as the Stock-Flow Adjustment - SFA (Alt et al. 2014).

It is worth mentioning that the SFA corresponds to true accounting information that highlights the dynamics of public debts in the country and has the function of statistical monitoring of fiscal performance. In the context of an

informational asymmetry of fiscal engagement, it is that this mechanism can be used to express accounting untruths. Reischmann (2015), used the SFA in his study to examine the influences of electoral motivations on the existence of creative accounting. The author analyzed the variations in SFA between the 27 OECD countries in the period 1970-2011. For he, trends in the use of mechanisms to reduce deficits started with the introduction of the Stability and Growth Path -SGP (Stability and Growth Proposal) carried out in 1998 by the European Union that limited the debt / GDP ratio and the deficit for member countries.

Studies like Koen and Van den Noord (2005); Von Hagen and Wolff (2006); Weber (2012); Cleménceau and Soguel (2017) also presented, under this assumption, the trends for the use of accounting gimmicks. In the Brazilian context, this approach is not yet widely disseminated. However, Gobetti (2010) and Silva (2018) presented information to the national literature. Silva (2018) proposed a model adapted to the work presented by Reischmann (2015) and, at the same time, weighted the SFA by the Current Net Revenue (RCL) due to the legal principles that govern Brazilian fiscal policy. The weighting intended to show the degree of involvement of the variable with the debt limit index.

On the other hand, there is a range of variables in the existing literature to explain the phenomenon of accounting manipulations in government sectors (Rose, 2006; Buti et al., 2007; Oskaya, 2014; Hodges, 2018). For example, in Brazilian practice, the variable “*restos a pagar*” is mentioned. This variable represents expenses incurred in an accounting period but chargeable or payable in another. For Aquino and Azevedo (2017), the public manager has used this budget account like his allocative preferences for reducing budgetary rigidity. As a result, the credibility in fiscal transparency became weak. Corroborate this understanding Alves, Oliveira, and Dantas (2007); Costa & Gardner (2015) and Almeida and Sakurai (2018).

Indeed, Goto and Yamamoto (2018) state that explanatory models may present insufficient results for the casualty and detection of accounting gimmicks. However, variations in the SFA, whether positive or negative, can allow analysis and inferences of the presence of accounting gimmicks. For the reality of subnational entities, such as Brazilian municipalities, the increasing increase in the level of debt in situations of fiscal rigidity can maximize the option of managers in the insertion of tricks aiming at budgetary improvement (Milesi-Ferrati, 2003). Certainly, such dispersions can compromise socioeconomic performance indexes and present a public manager with unpopular decisions, minimizing his electoral credibility and political visibility.

## 2.2 Fiscal Policies and Public Spending

There is a trade-off between theory and practice regarding the adoption of fiscal regimes. Theoretically, a government's discretionary decisions can achieve results similar to those achieved by the imposition of fiscal rules or even more effective. However, the practical reality of governments presents itself in another way. Thus, the literature has emphasized that to resolve several distortions, it is necessary to include fiscal rules (Alesina & Bayoumi, 1996).

In this regard, it is understood that the governments adopted fiscal regimes as strategic mechanisms for directing economic behavior (Gonçalves, 2018).

Corroborating this understanding, Menezes and Tonedo Junior (2006) emphasize that the Theory of Budgetary Institutions strengthens the context of fiscal discipline. According to Fatás and Mihov (2006), the normative ideal of the fiscal rule is attributed to a positivist aspect based on the reality that governments need institutional limits and restrictions that can contain the deficit bias used of the managers.

By the way, the 1990s were marked by the existence of stricter rules that focused on short-term annual targets for fiscal results. Subsequently, in the mid-2000s, a new trend based on a series of works promoted the improvement of fiscal rules combining investment with fiscal sustainability in the medium term. However, with the 2008 international crisis, a theoretical and empirical debate was encouraged to make the rules more flexible to accommodate the effects of economic cycles and fiscal variations. In this sense, the debate revolved around criticizing the characteristics of the previous works one for not allowing adjustments to exogenous distortions of public expenditure, besides minimizing transparency, opening space for possible fiscal manipulations (Orair, 2016).

In this perspective, several countries (European Union, Chile, and Switzerland) carried out institutional reforms and served as a model of experience (Gobetti, 2014). Thus, fiscal rules were disseminated throughout the world in an attempt to ensure fiscal discipline and sustainability of public indebtedness. Despite a diversity of concepts on the subject of fiscal rules, they are commonly classified as ideal, flexible, and rigid. The ideal rules reinforce the objective of aligning economic sustainability with flexible fiscal events and efficient policies. The flexible rules analyze the effects of an economic cycle to ease the rigidity of fiscal targets to the detriment of public investments. Finally, the rigid rules ones have characteristics of goals legally imposed or linked to government options (Von Hagen & Wolff, 2006; Menezes & Tonedo Junior, 2006; Gobetti, 2014; Lledó et al., 2017; Gonçalves, 2018).

For Souza (2008), there is no consensus on the ideal fiscal rule model, as these rules differ from country to country. However, there is unanimity as to the main objective, which is to serve as a mechanism for reducing the discretion of the governments in decision making, restoring fiscal sustainability. In Brazil, fiscal rules are grouped with different characteristics, such as the golden rule, which constitutionally aims to prevent an increase in public debt to finance current expenses. The other rules, which can be found in the LRF, aim to promote a fiscal balance in public accounts, reinforcing the need for austere and responsible thinking.

Thus, the adoption of fiscal rules reduces the degree of freedom for a public manager when determining spending restrictions, as in the case of those preferred by the active political party in the power. Moreover, it allows the expenditure of public resources to occur in favor of a society in general (Montes & Alves, 2012). In this regard, public expenditures are categorized by the literature as the economic interference of the State in the application of resources and provision of services previously defined in the budget. Likewise, they correspond to the government's allocative preferences and make it possible to understand the dynamics of the implementation of public policies in the distribution and redistribution of resources. Studies on public spending and resources have come to stand out as sources of research for the economic and financial sciences (Rezende, 2008; Bogoni, Hein, &

Beuren, 2011; Coate & Knight, 2011; Videira & Matos, 2011; Silva, Ferreira, Braga, & Abrantes, 2012; Soares, Clemente, Freire & Scarpin, 2016).

According to the taxonomy recommended in the study by Rezende (1997), expenditures can be classified according to the allocation preference. The first category that represents expenditure related to economic activity, in which the government assumes the role of intervention or regulator, is classified as economic. The second category is that of minimum expenditures and corresponds to those for which the government has exclusive control. Finally, the category of social expenditures represents the share of expenditure applied by the government to the provision of goods and services of a meritorious or quasi-public nature.

Sakurai (2009) shows that some budgetary functions become more prioritized due to administrative preferences or political party options. Among these preferences is social spending. The financing of some Brazilian social expenditures (eg. education, health, and social security) is mandatory and follows the principle of attachment. For Salvador (2016), this is characterized as "plastered" the public budget, as it reduces the public manager's discretion and prohibits the execution of contingencies for a surplus. The spending linked ensures that governments carry out the minimum execution of expenditures, minimizing the predominance of the political ideology of the government.

Education and health are among the expenses with greater efforts to ensure effective and specific sources of financing, as they have linked sources. The rigidity can also be found by the limits of indebtedness recommended by the LRF, in which case investment expenses are found. However, Neduziak and Correa (2018) show that the rigidity of financing spending does not cover all social spending, such as social assistance, culture and development, and housing. This allows each government to execute them based on his political party preferences.

In this same context, there is a discretion of the government in the fiscal behavior for public spending which does not be linked. Studies such as Orair and Siqueira (2016) sought to identify determinants for the application of these resources. Subsequently, Orair and Siqueira (2018), identified that the volume destined to public investments and other expenses is related to the guidelines of public policies and the priorities dedicated by each government. However, such options, in the Brazilian case, should comply with the set of established fiscal rules.

### **2.3 Political Electoral Cycles**

The democratic reality that affects the world has brought a paradox to the elected representatives who make decisions about the local economic and fiscal policy. Such representatives face the difficulty of reconciling the execution of public policies aimed at society or maintaining loyalty to their electorate. In this way, two opposing theoretical currents have emerged that seek to explain the influences of political decisions in the economic context: The theory of Political Electoral Cycles and theory of Political Control.

The Theory of Political Electoral Cycles propagates the efforts that elected agents to make to improve their performance to guarantee their permanence in the power of public administration. The theoretical and empirical discussion of this approach led to several variations regarding the name itself, however, the centrality of the phenomenon remained the same (Milesi-Ferreti, Perotti &

Rostagno, 2002; Silva, 2018). The theoretical assumption more related to the subject refers to the seminal study of Downs (1957). For the author, government action occurs rationally and specifically aims to maximize its political-electoral performance, in the same way that the private sector works with the theory of profit maximization and monopoly permanence of power.

Moreover, Sakurai (2009) defines Political Cycles as the influencing factors of politics concerning the economic behavior of a place. The two initial schools of Theory of Political Electoral Cycles used the assumptions of Theory of Economic Cycles to justify such influence. The first approach presented by Nordhaus (1975) considers that political action is based on an adaptive expectation and permeated with opportunistic incentives aiming at the probability of remaining in power. The second approach aimed at rational expectation was defended by Rogoff and Sibert (1986) and considers that political actions are due to an asymmetry of information between representatives and the electorate.

In the second phase of construction of the theoretical thinking of this theory, the idea arose that the influences of the elections in the economic cycles were also related to the party or ideological politics of the ruler. Alesina's study (1987) is considered a basic reference for this new assumption. For the author, the maximization of political cycles occurs in situations in which voters are influenced by the uncertainties that may occur after the victory of a new party in the electoral race.

For Simonassi and Cândido Junior (2008), the Theory of Political Control is opposed to the approaches defended by the theoretical current of political electoral cycles. Studied by Barro (1973) and Ferejohn (1986), the theoretical current of Political Control presents elections as a mechanism capable of ratifying the accountability of politicians. It is related to the models by which there is an asymmetry between principal and agent. In this case, the agents are the politicians and do not have information about the interest of the electorate who becomes the principal. Thus, when seeking to continue the political electoral cycles, the government starts to behave in line with the voter's interest and minimizes opportunism.

Nakaguma and Bender (2010) argue that the approaches to the Theory of Political Electoral Cycles and the Theory of Political Control, although presenting contradictory assumptions, act in a way that complements each other. Each approach treats the representative's relationship with the electorate differently. For the political cycle model, voters prefer representatives based on competence and such cycles serve as signaling mechanisms to demonstrate the competence acquired. As for the approach to electoral political control, staying in the office can generate tendencies towards opportunism and elections serve for voters to signal control in their hands.

## **2.4 Hypothesis Development**

The responsibility of states and municipalities to provide social welfare reflects the visibility of the government's fiscal performance. Fiscal rigidity can act as a mechanism that affects opportunistic interests and positively affect fiscal decisions (Drazen and Eslava, 2005). As a result of complying with such rigid expenditures and signaling administrative competence to their voters, the public

managers tend to manipulate the fiscal situation based on changes in public spending. Because of the above, we have the hypothesis (H<sub>1</sub>) that there is a positive relationship between rigid fiscal rules and accounting gimmicks practices.

According to Macedo and Corbari (2009), the practices of a system based only on transfers from a central entity generate a trend in the municipalities of excessive spending and successive deficits, driving greater indebtedness. In this sense, municipalities that have a high degree of dependency are led to a low fiscal effort of their own. Thus, there is the possibility of maximizing fiscal opportunism and the use of accounting gimmicks to maintain these transfers. Therefore, the hypothesis (H<sub>2</sub>) is assumed that there is a positive relationship between the financial dependence of the municipality and the accounting gimmicks practices.

Expenditure surpluses recorded in the balance payable are considered as legal escape devices to maintain surpluses while preserving the results of fiscal discipline (Souza, 2013). This accounts to be paid are the mechanisms most likely to suffer from the manager's allocative manipulations, given that their balances do not enter the primary results. Thus, the hypothesis (H<sub>3</sub>) arises that there is a positive relationship between the "restos a pagar" (represents expenses incurred in an accounting period but chargeable or payable in another) and the accounting gimmicks practices.

The increase in expenditures in a municipality may be guided by policies for the use of public expenditures by which governments adopt and use these expenditures accounting devices to the same extent that they reduce expenditures in the same sector. For the fiscal competition, a given municipality can imitate its neighbor's spending pattern, signaling a good performance for its constituency (Videira & Mattos, 2011). The hypothesis (H<sub>4</sub>) that there is a positive relationship between the spatial interaction of the municipalities and the practices of accounting gimmicks is based on the government's attitudes to generate an appreciation of its performance to a portion of its population.

Brazilian municipalities are known for a constant permanence of power, either through the reelection or succession of allies (Sakurai, 2009). Political performance has been endorsed, in some cases, by smoothing fiscal results. Thus, the hypothesis (H<sub>5</sub>) is assumed that there is a positive relationship between the political electoral cycle and the accounting gimmicks practices. In this sense, Nakaguma and Bender (2006) presented that the changes that occurred after the enactment of the law that regulated the reelection in the Brazilian federal entities enabled an increasing tendency to fiscal manipulations aiming at political opportunism in electoral periods. Thus, the hypothesis (H<sub>6</sub>) in which there is a positive relationship of opportunistic behavior for reelection with the practices of accounting gimmicks must be analyzed. Gámez and Ibarra-Yúnez (2009) attribute this to opportunistic political cycles in which the governments use these instruments to achieve success in the election.

### 3 METHODOLOGY

The research is descriptive and explanatory. We used documentary analyzes in articles, books, legislation, reports, and financial statements of the investigated entities. Besides, descriptive and inferential statistics were used, using

binomial logistic regression. Regarding the method, the quantitative stands out, through an econometric analysis of the data, using non-linear estimators (Gujarati & Porter, 2011).

The investigation covers the 466 municipalities in the Midwest region, according to data from the Brazilian Institute of Geography and Statistics (IBGE), divided into 246 municipalities in Goiás, 141 in Mato Grosso, and 79 in southern Mato Grosso, in addition to the Federal District. An unbalanced panel was created with annual data for the period from 2004 to 2017, comprising 4 political cycles - 2004, 2008, 2012, and 2016. The choice to the sample period was due to the coming into force of Complementary Law No. 101, of May 4, 2000 (Brazil, 2000) and Federal Senate Resolution No. 40, of December 20, 2001.

We collected the information from the regional accounts and public finances of each municipality based on Public Finances in Brazil (Finbra) and in the Accounting and Tax Information System of the Brazilian Public Sector (Siconfi). The data were taken from the balance sheet, the budget balance sheet, the statement of changes in equity, as well as the summary budget execution report (RREO) and the Fiscal Management report (RGF). The other data, such as the number of inhabitants, municipal GDP, IPCA indexes, and election information were selected: (i) at IBGE; (ii) at the Institute for Applied Economic Research - Ipea; (iii) at the Central Bank of Brazil - Bacen; (iv) the Information System on Public Budgets in Education - SIOPE; (v) at the SUS IT Department - Datasus; and (vi) at the Superior Electoral Court (TSE).

Municipalities that did not have data in the STN database were considered as missing values. From the calculation of the Mahalanobis distance, we found cases with multivariate outliers, being excluded from the sample. Among these cases, the existence of a subsample in the data set of the Federal District was detected. Thus, the number of final observations was 5517.

To verify the levels of SFA in each municipality, we observed the understanding proposed by the model studied by Reischmann (2015). For the author, the change in debt (B) in period  $t$  must represent the same value as the deficit (D) in period  $t$ . The result of the debt level in period  $t$  corresponds to the accumulated deficit values added to the debt level. In the case of non-conformity in these results, the inference of accounting gimmicks is possible. Equation 1 represents the understanding presented by Reischmann (2015).

$$B_t - B_{t-1} = D_t + SFA_t \quad (1)$$

At the same time, the study by Silva (2018) which, when proposing a model adapted to the Brazilian reality, presented the variations of the SFA weighted by the RCL, also served as a basis for the initial development of the dependent variable of this study. Regarding the transformation of the variable, we used procedures similar to those practiced by Freire, Monteiro, Vieira, Santos, and Freire Filho (2007). The procedures use mathematical inferences from the calculation of the mean and standard deviation of municipality  $i$  in the period  $t + n$ . First, the variable used as the base ( $sfa\_rcl$ ) was standardized with a normal distribution. Equation 2 demonstrates such standardization, in which,  $Z_{sfa\_rcli,t} \sim N(0,1)$

$$Z_{sfa\_rcl_{i,t}} = \frac{sfa\_rcl_{i,t} - \bar{X}}{\sigma} \quad (2)$$

The result of the equation gave rise to a new variable called *AccountG*. For the categorization of the variable in the attributes of 0 and 1, the premise that municipalities that present the result of the SFA account equal to zero do not demonstrate the use of accounting gimmicks was considered. Therefore, for values other than zero, whose value represents positive or negative variations, there is the presence of SFA with the possibility of verifying these practices (Alt & Lassen, 2006).

In the case of a sample where the number of municipalities that presented SFA equal to zero was very small, the existence of any margin of error is understood as the data used for the research may contain some accounting inaccuracy, mainly due to the transformations of the public sector accounting system that occurred with the convergence to international standards. Thus, the margin of sampling error (*e*) was considered in the process of classification of the municipality and adherence to the variable, according to equation 3.

$$e = Z_{\alpha/2} \pm \sqrt{\frac{p(1-p)}{n}} \cong \frac{1}{n} \quad (3)$$

In which *z* represents the value of the Z table of reliability defined for 95% confidence; *P* represents the estimated proportion (usually used for the value of 0.5) and *n* is the sample size.

Moreover, the following explanatory variables were considered: (i) spending *per capita* on education, spending *per capita* on health, spending *per capita* on housing and spending *per capita* on investment, (ii) processed unpaid commitments (*restos a pagar processados*) and unprocessed unpaid commitments (*restos a pagar não processados*), (iii) financial dependence, (iv) inflation, (v) centrality, (vi) size, (vii) election year, the year before the election, the year after the election, (viii) ideology, and (ix) opportunism. Table 1 presents the summary information regarding the description and references of the variables used for the composition of the object of study.

**Table 1**

Summary regarding the description and justification of the study variables

<b>Dependent Variable</b>	<b>Proxy</b>	<b>Theoretical foundation</b>	
AccountG	Represents the binary variable in which 1 is attributed the presence of accounting gimmicks and 0 in contrary cases from the existence of the SFA weighted by the / RCL of municipality <i>i</i> in period <i>t</i>	Exploratory based on studies such as Buti et al. (2007); Clémenceau and Soguel (2017), Von Hagen and Wolff (2006); Reischman (2015); Silva (2018); Weber (2012)	
<b>Independent variable</b>	<b>Proxy</b>	<b>Theoretical foundation</b>	<b>Expected Effect</b>
Spending	Represents the balance of current expenses <i>per capita</i> with the education function of municipality <i>i</i> in period <i>t</i>		positive
	Represents the balance of current expenses <i>per capita</i> with the healthy function of municipality <i>i</i> in period <i>t</i>	Drazen and Eslava (2005); Ribeiro and Zuccolotto (2014); Sakurai (2009)	positive
	Represents the balance of expenses <i>per capita</i> with the housing function of municipality <i>i</i> in period <i>t</i>		negative
	Represents the balance of expenses <i>per capita</i> in the investment function of municipality <i>i</i> in period <i>t</i>		positive
Lnrpp	Natural logarithm of the final balance of the "restos a pagar" accounts processed in municipality <i>i</i> in period <i>t</i> .	Aquino and Azevedo (2017); Milesi-Ferrati (2003); Oliveira (2011)	positive
Lnrpnp	Natural logarithm of the final balance of the "restos a pagar" accounts non-processed in municipality <i>i</i> in period <i>t</i> .	Aquino and Azevedo (2017); Milesi-Ferrati (2003); Oliveira (2011)	positive
Ddpen	Represents binary variable 1 for municipality <i>i</i> , which presented higher values of transfers received in proportion to its own budget revenues, and 0 for otherwise	Adapted from Freire et al (2017); Fiirst et al. (2018)	positive
Ipca	Represents the accumulated IPCA index for the year in period <i>t</i>	Gobetti (2014)	positive
Centrel	Represents the dummy variable that assumes value 1 for municipality <i>i</i> classified as influencing period <i>t</i> , and 0 otherwise	Werck et al. (2008); Soares et al. (2016)	positive
tam	Inserted as a control variable. Assumes values from 1 to 7 and represents the category of municipality <i>i</i> according to the number of inhabitants in period <i>t</i>	Videira and Mattos (2011)	exploratory
Anoelei	Dummy that assumes the value of 1 if in municipality <i>i</i> , in period <i>t</i> , an election took place and 0 otherwise.	Drazen and Eslava (2005); Nakaguma and Bender (2010); Reischmann (2015)	positive
Anoelep	Dummy that assumes the value of 1 if in municipality <i>i</i> , in the period <i>t+1</i> , is the year preceding the election and 0 otherwise.		positive

Independent variable	Proxy	Expected Effect
Anopos	Dummy that assumes the value of 1 if in municipality <i>i</i> , in period <i>t-1</i> , is the year that after the election and 0 otherwise.	negative
Ideo	Represents the party spectrum of the occupants of the position of mayor of municipality <i>i</i> in the elective term from the period <i>t</i> . It assumes a scale ranging from 1 to 3, with the value 1 representing parties on the right, 2 for parties in the center, and 3 for parties on the left.	positive
Oportun	It represents the opportunity for the mayor's re-election. Assumes a value of 1 for re-election opportunity and 0 otherwise.	positive

Source: Developed by the authors

Note: Public account values deflated by the methodology used in Brazil's Central Bank calculator.

The expected positive sign for social spending on education and health corresponds to the public manager's tendency to comply with fiscal rigidity. The social security expenditures were not selected due to the lack of information for this function in most municipalities. On the other hand, the negative sign is expected in the case of the housing function because it is an allocation preference of the public manager without fiscal rigidity. However, the investment function was inserted, because it has a degree of application rigidity in the indebtedness limits, besides, they are expenses commonly used in the governmental decision process with opportunistic reasons, mainly electoral (Drazen & Eslava, 2005; Orair & Siqueira, 2018).

A positive sign is expected for financial dependence (*ddpen*) because the degree of dependence does not allow manager fiscal freedom (Fiirst et al, 2018). At first, the variable was calculated from an indicator proposed by Freire et al. (2007) in which its revenue fewer government transfers in proportion to total revenue indicated the location's financial dependence. The indicator presented a minimum number of municipalities with less than 90% dependency. Thus, it was decided to choose dichotomously to identify the municipalities in which the amounts of government transfers received exceed the values of their budget revenues.

In short, the dependent variable of the study starts to assume a qualitative characteristic of a binary or dichotomous nature, being detected more commonly by the logit regression model. Corroborating the idea of Goto and Yamamoto (2018) that it is difficult to understand the mechanisms and the causality of accounting gimmicks, we sought to institute a model that presents the probability of occurrence. The regression was performed with the aid of the statistical software Stata 13. Equation 5 presents the study model:

**AccountG**

$$= \frac{1}{1 + e^{-\beta_0 + \beta_1 \text{Gastos}_{it} + \beta_2 \text{lnlrpp}_{it} + \beta_3 \text{lnrnp}_{it} + \beta_4 \text{ddpen}_{it} + \beta_5 \text{Centrel}_{it} + \beta_6 \text{Tam}_{it} + \beta_7 \text{Elei}_{it} + \beta_8 \text{Oport}_{it} + \beta_9 \text{ipca}_{it}}} \tag{4}$$

## 4 ANALYSIS OF RESULTS

Of the 5517 observations in the study, 1283 (23.26%) corresponded to observations in which the municipalities did not present accounting gimmicks. The value of observations in which the municipalities presented the occurrence of accounting gimmicks is 4234, which corresponds to 76.74% of the total observations.

We performed statistical tests to check if the means between the groups had statistical equality. We used the chi-square test (Ch2) for qualitative variables, which found that there was no significant correlation between the means of the groups of the variables *centrel*, *tam*, *ideo*, and *oport* concerning the accounting gimmicks practices. In the case of quantitative variables, Wilcoxon's non-parametric test found that the variables *educ\_cap*, *Inrpp*, *centrel*, *tam*, *ideo*, and *oport* were not statistically significant. The results of the descriptive statistical analysis of the variables used in the study are shown in Table 2.

**Table 2**  
Descriptive statistics of the variables used in the model

Variable	Obs	Mean	Standard Dev.	Min	Max	Chi2	Wilcoxon test
						p-valor	p-valor
<i>educ_pcap</i>	5517	920.0966	750.1658	0	8852.838		0.7152
<i>saud_pcap</i>	5517	680.9582	391.9506	0	4855.081		0.0493
<i>hab_pcap</i>	5517	260.3745	251.8519	0	5128.234		0.0058
<i>inv_pcap</i>	5517	302.8707	392.5635	0	11718.74		0.0000
<i>Inrpp</i>	5517	11.47592	4.37271	0	18.70377		0.0016
<i>Inrppn</i>	5517	6.736116	6.632249	0	19.20128		0.2465
<i>ipca</i>	5517	5.732998	1.672952	2.95	10.67		0.0000
<i>ddpen</i>	5517	0.235454	0.424321	0	1	0.016	0.0160
<i>centrel</i>	5517	0.171289	0.376795	0	1	0.095	0.0946
<i>tam</i>	5466	2.425357	1.308012	1	7	0.252	0.0999
<i>anoelai</i>	5517	0.275875	0.446994	0	1	0.000	0.0002
<i>anoelep</i>	5517	0.210803	0.407916	0	1	0.000	0.0000
<i>anopos</i>	5517	0.286569	0.452199	0	1	0.000	0.0000
<i>ideo</i>	5444	1.796841	0.749953	1	3	0.277	0.1717
<i>oport</i>	5473	0.799562	0.400365	0	1	0.459	0.4592

Source: Developed by the authors

We perform tests to detect multicollinearity by VIF and tolerance. The values found allowed the inference of absence of multicollinearity since for the variables the VIF value was less than 10. Chi-square's results (Ch2) for maximum likelihood show the model adjustment statistics with a level of significance below 1%. This assumption is related to the fact that the variables introduced to the model have a significant impact on the prediction of the probability of the event occurring (Hair et al., 2009).

Thus, we used a model with the inclusion of all expenditures to test the research hypotheses, which found that the probability of the occurrence of accounting gimmicks must be analyzed globally, not being possible at the

moment to decompose the expenditures. The Hausman test with p-value (0.0019) rejects the hypothesis that the model for random effects is more appropriate. Thus, we opted for the logistic regression model in a panel of fixed effects. Table 3 presents the results obtained from the coefficients and the odds ratio for the logit model of fixed effects.

**Table 3**  
Fixed Effects Model for AccountG

accountG	Coef.	OR	Std. Err.	z	P>z	[95% Conf. Interval]
educ_pcap	0.0002222	1.000222	5.65E-05	3.930	0.000***	0.0001115 0.000333
saud_pcap	-0.0005245	0.9994756	0.000143	-3.670	0.000***	-0.0008047 -0.0002443
hab_pcap	-7.330E-08	0.9999999	0.000205	0.000	1.000	-0.0004015 0.0004013
inv_pcap	0.0002935	1.000294	0.000146	2.010	0.044*	7.53E-06 0.0005794
lnrpp	0.0159689	1.016097	0.009101	1.750	0.079	-0.0018683 0.0338062
lnrpn	-0.0056679	0.9943481	0.006477	-0.880	0.382	-0.0183632 0.0070274
ipca	-0.1104281	0.8954507	0.02349	-4.700	0.000***	-0.1564673 -0.0643888
ipca	-0.1104281	0.8954507	0.02349	-4.700	0.000***	-0.1564673 -0.0643888
ddpen	0.3033229	1.354352	0.103633	2.930	0.003**	0.1002061 0.5064398
centrel	0	(omitted)	(omitted)			
tam						
2	0.2638401	1.30192	0.203859	1.290	0.196	-0.1357155 0.6633958
3	0.3904817	1.477692	0.261862	1.490	0.136	-0.122759 0.9037224
4	-0.0731624	0.9294498	0.327246	-0.220	0.823	-0.7145532 0.5682283
5	0.1500176	1.161855	0.636617	0.240	0.814	-1.097729 1.397764
6	-2.158676	0.1154779	1.067997	-2.020	0.043*	-4.251911 -0.0654415
7	0	(empty)	(empty)			
anoelai	-0.5257481	0.591113	0.115648	-4.550	0.000***	-0.7524131 -0.299083
anoelep	-1.168552	0.3108167	0.118835	-9.830	0.000***	-1.401464 -0.9356398
anopos	-1.238332	0.2898673	0.114348	-10.830	0.000***	-1.46245 -1.014214
ideo	-	-	-	-	-	-
2	-0.0377477	0.9629559	0.096633	-0.390	0.696	-0.2271439 0.1516485
3	0.0656351	1.067837	0.12171	0.540	0.590	-0.1729114 0.3041816
oport	0.1848112	1.202991	0.094281	1.960	0.050*	0.0000232 0.3695993
LR Chi2	281.31				0,000***	
N	5063					
Hausman Chi2	60.12				0,0000	

Source: Developed by the authors

Note: p<0.05; \*\* p<0.01; \*\*\* p<0.001. The variables centrel and category 7 of the variable tam were omitted due to no variation within the group

The explanatory variables *educ\_pcap*, *saud\_pcap*, *ipca*, *anoelai*, *anoelep*, and *anopos* presented a level of significance that was statistically different from zero and to below 1%. On the other hand, the variables *inv\_pcap*, *ddpen*, and *oport* presented a significance level of 5%. In a less conservative approach and implying the occurrence of type II error, one can consider the static significance of the variable *lnrpp* at 10%. The variable tam obtained a level of statistical significance only for category 6 that corresponds to the population

range of municipalities from 100,001 to 500,000 inhabitants. Therefore, these variables affect the probability of the occurrence of accounting gimmicks.

It is important to highlight that the analysis of the observations generated by the logistic regression must be attentive to the value of the odds ratio. While the estimated coefficients indicate the direction for the change concerning the dependent variable, the odds express the probabilistic reason for the event to occur or not. To calculate this probability, information from the study by Corrar, Paulo, and Dias Filho (2009, p. 313) was considered.

#### 4.1 Public Spending

Hypothesis 1 tested the positive relationship between strict tax rules and accounting gimmicks practices. For this, we analyzed public expenditures that receive fiscal rigidity in Brazilian municipalities (education, health, and investment) and, also, expenditures that do not express such rigidity (housing). In the case of investment spending, although not classified as social, the inclusion in the model aimed at identifying expenditures commonly used as fiscal opportunism for election. The coefficients were relatively low (0.000022 for *educ\_pcap*, -0.0005245 for *saud\_pcap*, -7.330E-08 for *hab\_pcap*, and 0.002935 for *inv\_pcap*) indicating a marginal effect lower than expected.

With a level of statistical significance of less than 1%, the variable *educ\_pcap* showed the expected positive sign and allowed the corroboration with that presented in hypothesis 1. The result is corroborated by Arvate, Avelino, and Lucinda (2008) when they emphasized that the increase in Education spending tends to cause a worsening of primary fiscal results since demand uses a greater number of budgetary resources. In this way, the environment becomes favorable for the public manager to practice accounting gimmicks in an attempt to improve his fiscal results.

Although with a significance level of less than 1%, the variable *saud\_pcap* showed a sign of the estimated coefficient contrary to the expected, establishing an inverse relationship in the presence of accounting gimmicks. Thus, it was not possible to corroborate hypothesis 1 for this type of spending. The odds ratio (0.9999) represents the probability of a 0.013% reduction in the chance of accounting gimmicks occurring in the event of an increase in the function's expenses. The justification for this finding may be the determination of other variables for each municipality. One of them is the eminence of the public service offered by other entities such as the State and the Union or by relations of spatial interaction since such expenses are the ones that suffer most from this interaction (Soares et al., 2016). Thus, the manager can minimize the concern with this expense due to the continuity of service provision by others. Consequently, the expense occurs in a minimal way than required and does not affect primary fiscal results.

The variable *hab\_pcap* showed the expected signal in the study, but it was not statistically significant. Thus, it was not possible to infer results for the primary intention of understanding the "non-rigid" spending relationship with accounting gimmicks practices. As for the variable *inv\_pcap*, the level of significance was 5% and the sign was as expected, corroborating with hypothesis 1. The result allowed the inference that public spending on investments can be the object of

accounting tricks aiming at opportunism fiscal and electoral successes, as in the example of the preference for building bridges and other infrastructure improvements that can be more visible and measurable, regardless of the increase in the fiscal deficit in the municipality. Such inferences are corroborated in the literature by Sakurai (2009); Nakaguma and Bender (2010); Orair and Siqueira (2018).

In this context, the odds ratio of the probability of the event, in the case of investment expenditures, was also low as that of the variable of expenditure on education, representing a probability of less than 1%. The justification may lie in the efficiency of the LRF's presence, which imposes debt limits on federal entities, reinforcing fiscal rigidity. Thus, the limits imposed are important determinants for the public manager's discretionary choice. Another important fact to highlight for failures in corroborating the hypothesis can be inferred from the fact raised by Almeida and Sakurai (2018), where the rigidity of the use of the received values is directly related to the political variables.

## 4.2 Economic and Other Fiscal Factors

Although with a different sign than expected, the *ipca* variable presented a significance level of less than 1%. Thus, the results corroborate with hypothesis 1 and with the current that defends rigid fiscal rules as possible reducers of inflation rates (Besley & Case, 2003; Fatás & Mihov, 2006; Arestis & Sawyer, 2008; Sacchi & Salotti, 2015). On the other hand, when observing the odds ratio (0.89) of the probability of occurrence on the dependent variable, there is a probability of - 2.75%, i.e, there is a decrease in the chance of the occurrence of accounting gimmicks concerning an increase of one percentage point in the rate of inflation. It is known that economic effects are permeated by other variables that may have been suppressed in this model.

The results presented by the *ddpen* variable allow corroborating with hypothesis 2, inferring that the level of financial dependence of the municipality has a relationship with the accounting gimmicks practices. With a level of statistical significance at 5%, the positive coefficient presented in the variable indicates a positive proportional relationship with the dependent variable. With a 1.3545 odds ratio, the probability of accounting gimmicks occurring was 7.50%, which is higher in the case of municipalities with high financial dependence. The results corroborate the findings of Dal-Ri and Correa (2019), who found that municipalities dependent on government transfers use them to obtain electoral profits.

We corroborated hypothesis 3 deals with the positive relationship between accounting gimmicks practices and "restos a pagar" when considering the variable *lnrpp* as a less conservative criterion of a 10% significance level. Thus, it can be verified a significant statistical relationship with the practice of accounting gimmicks. The odds ratio of the variable that presents itself as 1.0161, corresponds to an increase of chance in the probability of occurrence of accounting gimmicks of 0.40% when there is a positive variation in the variable. The results corroborate the findings by Alves et al. (2017) who showed that the management of this item, in Brazil, is something recurring for the public sector and that its use by public managers serves as a source of accounting devices. However, the results refuted the predictive power of unprocessed leftover accounts (*lnrnpp*).

### 4.3 Demographic Factors

It was not possible to corroborate hypothesis 4 that the accounting gimmicks practices have a positive relationship with the spatial interaction with the municipalities since the *centrel* variable could not be analyzed due to non-variance within the group. The variable *tam* was added to the model as a control variable, but it did not present a satisfactory level of statistical significance in most of the indicated categories. The only exception is in the category for municipalities with more than 100,000 to 500,000 inhabitants, which had a statistically significant negative coefficient with an odds ratio of 0.1154. This factor represents that for each increase in the category, there is a reduction of -39.65% in the probability of occurrence of accounting gimmicks.

### 4.4 Political Factors

Hypothesis 5, which corresponds to the positive relationship between the electoral political cycles and the accounting gimmicks practices, was partially corroborated due to variables that showed signs contrary to the expected, as in the case of the *anoele* and *anoelep* variables. Although with a level of statistical significance of less than 1%, the signs found were negative. Thus, these results did not corroborate with the academic literature that lists political cycles as determinants of fiscal manipulation practices. As a result, the probability odds ratio had an opposite effect on the practice of accounting gimmicks, with a reduction of -12.84% and -25.86%, respectively, for the occurrence of such manipulations in the years presented.

However, it is possible to verify a partial corroboration from the statistical significance of the *anopos* variable, which was added for the total closure of the electoral cycle. The variable presented the expected sign in the study (negative) and an odds ratio of 0.2898, which corresponds to the probability of -27.53% of accounting gimmicks practices in the years after the election. The results of the variable corroborate with the understanding of the literature on political electoral cycles that, in years after the election, the governors tend to decrease their opportunistic behavior and manipulations due to two determinants: the first related to the fiscal adjustment received in the previous government and the second for its proximity to the electoral results, which makes the representative more prone to criticism and punishment.

In the same way, it can be inferred that such results were more in line with the theoretical current of Electoral Control (Barro, 1973; Brambor & Ceneviva, 2012; Duggan & Martinelli, 2015). For, government officials tend to reduce the practices of accounting gimmicks aiming at permanence. Given this, the results allow inferring a strengthening that the municipalities have taken a new stance in the policy of social and electoral control.

The partial corroboration of hypothesis 5 was also because the categorical variable ideology (*ideo*) did not present a level of statistical significance. We deduce that there is no relationship between the practice of accounting gimmicks and party ideology. It is also known that political effects are permeated by other variables that may have been suppressed in this model. Although the result was not significant, the findings contribute to the literature by showing that the existence of the ideology factor does not determine manipulation.

The *opport* variable presented results with a 5% statistical significance level, corroborating hypothesis 6 in which the accounting gimmicks practices are related to political opportunism for reelection. With an expected positive sign, the odds ratio of approximately 1.2029 of the variable represents an increase of 4.61% in the probability of occurrence of accounting gimmicks corroborating the findings of Gámez and Ibarra-Yúnez (2009) and Nakaguma and Bender (2006; 2010). Although the results had a contradictory effect with the political cycles from the verification by the electoral years, the statistical significance of the *opport* variable corroborates with this approach to what concerns that the political cycles tend to generate greater opportunisms in the representatives aiming at the maintenance in the power.

#### 4.5 Model Overview

In summary, the adequacy of the model that represents the probability of occurrence of accounting gimmicks and the adjustment of this model can be seen in Table 4. For Hair et al. (2009), the evaluation of the fit of the model can also occur from the comparison of its predictions between the results. The table shows the classifications according to the probability that was estimated and the observed results of the sample. The true values presented correspond to how many were events (occurrence of accounting gimmicks -D) or were not events (non-occurrence of accounting gimmicks - ~ D) for the *accountG* variable (Fávero & Belfiore, 2017).

**Table 4**  
Classification for the Study Model

Classification	True		
	D	~D	Total
+	4111	1206	5317
-	15	15	30
Total	4126	1221	5347
<b>Cutoff values for the model</b>			<b>Increased cutoff values</b>
Classified + se predicted Pr(D)	>= 0.5		Classified + se predicted Pr(D) >= 0.6
Sensitivity	Pr(+ D)	99.64%	Sensitivity Pr( + D) 97.26%
Specificity	Pr(~D)	1.23%	Specificity Pr( ~D) 9.17%
Correctly Ranked	77.16%		Correctly Ranked 77.15%

Source: Developed by the authors

Note: True D is defined as *accountG* != 0

Overall, the model was able to correctly classify 77.16% of the variance in the occurrence of accounting gimmicks events in the municipalities. For Field (2009), the remainder (22.84%) represents variables still unknown in the model. The sensitivity of 99.64% represents the correctness rate of those who were events. In turn, the specificity of 1.23% refers to the correctness rate of those who were not true events. It is possible to verify that the *cutoff* increase to 0.6 will cause an inexpressive reduction in the model (77.15%). Therefore, considering the 100% probability of occurrence, the result would express a cutoff point between 0.6 and 0.4 for the occurrence of accounting gimmicks.

The results showed that the practices commonly occur as a result of determinants widely experienced in the literature. Thus, it is inferred the power of accounting in the public sector to increase fiscal quality and maintain social welfare. Given the reality of Brazilian municipalities as federative entities that have greater political opportunistic behaviors, the research findings add to the literature by corroborating the hypotheses through an econometric model that the variables used in the study act as determinants related to fiscal manipulation practices.

## 5 CONCLUSIONS

The present study aimed to verify to what extent the practices of accounting gimmicks affect fiscal policies and the execution of social spending during political electoral cycles. The 466 municipalities in the Brazilian Midwest region from 2004 to 2017 were analyzed. For this purpose, an unbalanced data logistic regression model was estimated with variables identified by national and international literature to explore the phenomenon and answer the research problem.

The variables used correspond to economic, fiscal, demographic, and political factors. The estimation of the model allowed partially corroborating the hypothesis (H<sub>1</sub>) that there is a positive relationship between the rigid fiscal rules and the accounting gimmicks practices. The results showed that rigid social spending, such as education, and spending on rigid debt limits, such as investment, are statistically significant concerning the probability of the occurrence of accounting gimmicks. However, it was not possible to corroborate this fact with health and housing expenses.

Hypothesis 2 (H<sub>2</sub>), which assumed the positive relationship between the financial dependence of the municipalities with the practices of accounting gimmicks, was corroborated. The results represented that, on average, the municipalities with the highest financial dependency index have a 7.5% higher probability of accounting gimmicks. Hypothesis 3 (H<sub>3</sub>) was also corroborated. This hypothesis sought to verify the positive relationship between “*restos a pagar*” from municipalities and the accounting gimmicks practices, in line with the literature that identifies in these accounts a greater tendency for accounting manipulations by public managers. Unexpectedly, the hypothesis (H<sub>4</sub>) that assumed the positive relationship of spatial interaction between municipalities and the practices of accounting gimmicks by public managers was refuted, since the variable that verified centrality was not statistically significant.

The results by which a positive relationship between accounting gimmicks and the political electoral cycle was sought allowed to partially corroborate hypothesis 5 (H<sub>5</sub>). The variables that identified the pre-election year and the election year were statistically significant, but with expected signs contrary to the study. Such results were corroborated by the theoretical approach of Political Control. The result is also corroborated by the significance of the variable that identified that in the year following the election, accounting gimmicks practices tend to suffer a 27.53% reduction in the probability of occurrence. This is corroborated by the literature on political electoral cycles when it identifies that in these years the government is starting its electoral cycle and during fiscal adjustments, it is concerned with the proximity of the election and that its voters

still have a more active memory. Equally, hypothesis 6 (H6) was corroborated when verifying the positive relationship of accounting gimmicks with the opportunistic behavior by which the manager could use his position to manipulate fiscal results looking for electoral favoring.

It is worth mentioning that the results found in the study align the contradictions between the two literary currents regarding the rigidity of the fiscal rules and the existence of manipulations. Indeed, accounting gimmicks practices cannot only be driven by the presence of strict fiscal rules. Its presence is more inclined to the behavior of the governor due to electoral variables. Furthermore, it is possible to infer that the presence of such rules, as in the case of the LRF, allows greater fiscal sustainability in the municipalities, and in the case of non-compliance with these limits, harmful results can become constant.

This study contributed to the literature by presenting an exploration of the phenomenon of accounting manipulation practices that occurred in the context of the public sector. The proposed econometric model makes a practical contribution to the verification of determinants of accounting gimmicks practices in subnational governments, in addition to providing attributes to the power of accounting in fiscal transparency and social welfare.

The lack of data available for all municipalities was identified as a limitation for conducting the research. In addition to a unified base for public finance data that provides a better fit in the collection process. This fact had an impact on the improvement in the number of observations for the research. Therefore, for future research, it is proposed to verify the possible phenomenon that occurred with the effects treated by the spillover effect approach. This approach deals with the behavior of the public manager who uses spatial devices to maintain power. Thus, it is inferred that such accounting gimmicks practices may occur more frequently. It is also suggested to check the behavior of the variables for the Federal District since their removal from the survey allowed the identification of a subsample.

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