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Article

Political budget cycles, irregularities, and adverse opinions on municipal accounts in the state of Rio de Janeiro

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Political Budget Cycle theory suggests that, in election years, incumbents tend to increase public spending, especially on public works, in an effort to remain in power. This behavior may cause fiscal distortions and increase the incidence of irregularities in public accounts, thereby requiring greater oversight by Courts of Accounts. In this context, the objective of this study is to identify, in light of political budget cycles, the factors that explain the increase in irregularities and the likelihood of adverse preliminary opinions issued by the Rio de Janeiro State Court of Accounts (TCE-RJ). The sample covers the period from 2014 to 2022 and includes two regression models: ordinary least squares (OLS) and logit, with variables such as election year, expenditures on public works and personnel, reelection, and party ideology. The results indicate that, in election years, there is a higher number of irregularities identified in audit opinions, as well as an increased likelihood of adverse rulings on municipal accounts. The analysis also shows that increases in investment and personnel expenditures during this period are directly associated with the occurrence of irregularities, including those classified as "constitutional matters" and related to the "Fiscal Responsibility Law (FRL)." A complementary regression focused only on theory-related irregularities reinforced the robustness of the findings. It is concluded that the adverse preliminary opinion issued by the TCE-RJ reflect not only legal noncompliance, but also a systemic pattern influenced by the electoral cycle.
Keywords: political budget cycles, irregularity, adverse opinion.

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Ciclo político orçamentário em irregularidades e pareceres contrários das contas municipais fluminenses

A Teoria dos Ciclos Políticos sugere que, em anos eleitorais, os governantes tendem a ampliar os gastos públicos, especialmente com obras públicas, com o intuito de se perpetuar no poder. Esse comportamento pode gerar distorções fiscais e aumentar a incidência de irregularidades nas contas públicas, exigindo maior atuação das Cortes de Contas. Nesse contexto, o objetivo deste estudo é identificar, à luz dos ciclos políticos orçamentários, os fatores que explicam o aumento das irregularidades e a probabilidade de rejeição das contas pelo Tribunal de Contas do Estado do Rio de Janeiro (TCE-RJ). A amostra contempla os anos de 2014 a 2022 e inclui dois modelos de regressão: Mínimos Quadrados Ordinários (MQO) e Logit, com variáveis como ano eleitoral, despesas com obras e pessoal, reeleição e ideologia partidária. Os resultados indicam que, em anos eleitorais, há maior número de irregularidades nos pareceres e aumento da probabilidade de rejeição das contas. A análise também mostra que o acréscimo em despesas de investimento e pessoal nesse período está diretamente relacionado à ocorrência de falhas, inclusive quando classificadas entre constitucionais e relacionadas à Lei de Responsabilidade Fiscal. Uma regressão complementar com foco apenas nas irregularidades ligadas à teoria reforçou a robustez dos achados. Conclui-se que os pareceres prévios contrários emitidos pelo TCE-RJ refletem não apenas ilegalidades, mas um padrão sistêmico influenciado pelo calendário eleitoral.
Palavras-chave: ciclos políticos orçamentários, irregularidade, parecer contrário.

Ciclo político presupuestario en irregularidades y dictámenes desfavorables de las cuentas municipales fluminenses

La teoría de los ciclos políticos sugiere que, en años electorales, los gobernantes tienden a aumentar el gasto público, especialmente en obras, con el fin de perpetuarse en el poder. Esta conducta puede generar distorsiones fiscales y aumentar la incidencia de irregularidades en las cuentas públicas, lo que exige una mayor actuación de los tribunales de cuentas. En este contexto, el objetivo de este estudio es identificar, a la luz de los ciclos políticos presupuestarios, los factores que explican el aumento de irregularidades y la probabilidad de rechazo de las cuentas por parte del Tribunal de Cuentas del Estado de Río de Janeiro (TCE-RJ). La muestra comprende los años 2014 a 2022 e incluye dos modelos de regresión: mínimos cuadrados ordinarios (MCO) y logit, con variables como año electoral, gastos en obras y personal, reelección e ideología partidaria. Los resultados indican que, en años electorales, hay más irregularidades en los dictámenes y una mayor probabilidad de rechazo de las cuentas. El análisis también muestra que el incremente en los gastos de inversión y de personal durante ese período se relaciona directamente con la existencia de irregularidades, incluso cuando estas se clasifican como constitucionales y relacionadas con la Ley de Responsabilidad Fiscal. Una regresión complementaria reforzó la solidez de los hallazgos. Se concluye que los dictámenes previos contrarios emitidos por el TCE-RJ reflejan no solo ilegalidades, sino un patrón sistémico influenciado por el calendario electoral.
Palabras clave: ciclos políticos presupuestarios, irregularidad, dictamen contrario.

1. INTRODUCTION

The Political Budget Cycles Theory, grounded in Downs (1957), suggests that politicians act in their own self-interest, aiming to enhance their prestige and power through strategies designed to gain and maintain voter support. Rogoff (1990) and Rogoff and Sibert (1988) further developed this framework by demonstrating that incumbents may manipulate fiscal and budgetary variables in accordance with the electoral cycle to maximize political support.

Subsequent studies have provided empirical evidence of such political manipulation, especially through the expansion of public works and infrastructure spending during pre-election periods, given the high visibility of these expenditures (Dias et al., 2018; Drazen & Eslava, 2010; Sakurai & Menezes-Filho, 2008; Veiga & Veiga, 2007).

In addition, incumbents may also increase personnel expenditures, as documented in several studies (Drazen & Eslava, 2005; Lautenschlager, 2017; Oliveira & Carvalho, 2009; Salgueiro et al., 2021; Santos, 2024). Such strategies are often grounded in partisan political ideology, which shapes the behavior and decision-making of public officials (Bartoluzzio et al., 2023; Gonçalves et al., 2017).

Given the potential for manipulation of fiscal and budgetary policies for electoral purposes, the role of oversight institutions becomes particularly relevant. According to Pase et al. (2018), the courts of accounts exercise external control over public administration within a constitutional framework, holding the authority to influence government actions through auditing activities.

In this context, the courts of accounts review the financial statements submitted by the head of the executive branch and issue a preliminary technical opinion. This opinion informs the legislative judgment of accounts, which is carried out by municipal councils, state assemblies, and legislative bodies (Martins et al., 2020).

Within the academic literature, numerous studies have analyzed irregularities, deficiencies, and the misuse of public resources identified in reports issued by the courts of accounts (Crisóstomo et al., 2015; Dias et al., 2023; Milanezi & Monte-Mor, 2017; Silva & Cruz, 2018). However, these studies do not explicitly adopt the Political Budget Cycles framework.

Accordingly, there remains a gap in understanding the political dynamics underlying the functioning of oversight institutions. This gap stems from the limited number of studies that incorporate Political Budget Cycles into the analysis of control agencies. Although some studies address related theoretical aspects (Pereira & Cordeiro, 2012), there is a lack of systematic application of this framework to interpret the phenomena observed in the courts of accounts.

However, it is important to note that a substantial body of literature has already identified determinants consistent with the Political Budget Cycles Theory (Cella & Machado, 2020; Santos et al., 2016; Silva et al., 2023; Velten, 2015). This reinforces the need for more comprehensive, in-depth research that not only adopts this theoretical perspective but also deepens the understanding of the factors influencing political dynamics in the performance of oversight institutions.

It is also important to consider that the operationalization of the Political Budget Cycles Theory at the municipal level is subject to specific institutional constraints. Local governments operate under fiscal and financial restrictions that limit their capacity to adopt expansionary strategies (Cunha et al., 2021). Moreover, the role of the courts of accounts is restricted to ex post oversight and the issuance of preliminary opinions, without directly addressing the political incentives that drive managerial behavior (Pereira & Cordeiro, 2012). Nonetheless, understanding how these constraints interact with opportunistic behavior during electoral periods is essential and emphasizes the relevance of this study.

In light of this gap, the research question guiding the objective of this investigation is: *Based on the Political Budget Cycles framework, which factors explain the number of irregularities identified in preliminary opinions and increase the likelihood of account rejection by the Court of Accounts of the State of Rio de Janeiro (TCE-RJ)?*

This study contributes to the literature by expanding discussions on identifying irregularities and rejecting accounts by oversight bodies, including less explored factors such as party ideology, investment in public works and infrastructure, and personnel expenditures. These factors are especially relevant because of their connection to Political Budget Cycles, allowing for a more comprehensive understanding of decision-making processes within the courts of accounts across different political contexts.

Finally, this study advances research in Political Budget Cycles Theory, accountability, and public management, while offering practical contributions to improving oversight practices in the State of

Rio de Janeiro. By examining the political manipulation of public budgets during pre-election periods, the findings provide relevant insights for auditors and technical staff of the TCE-RJ. These insights help enhance the accuracy and effectiveness of preliminary opinions, thereby strengthening oversight mechanisms and promoting more transparent and responsible use of public resources.

2. BACKGROUND AND HYPOTHESIS DEVELOPMENT

According to Silva et al. (2013), the Political Budget Cycles Theory is central to understanding how political parties and politicians adjust their strategies over time. Downs (1957) argues that, in democratic regimes, politicians prioritize remaining in office, often at the expense of broader social demands. Nordhaus (1975) further posits that, in pursuit of reelection, incumbents tend to adopt expansionary economic policies during election years in order to stimulate economic growth and reduce unemployment.

Hibbs (1977) incorporated an ideological dimension into the analysis of political cycles, arguing that public policies reflect the economic interests of the constituencies represented by each party. He thus proposed the partisan-economic model, according to which left-wing governments favor expansionary policies to reduce unemployment, whereas right-wing governments prioritize inflation control. Similarly, Alesina (1987) examined how voter preferences and political strategies shape economic decision-making, demonstrating that politicians adjust public spending and taxation over the electoral cycle to maximize political support.

Rogoff and Sibert (1988), in turn, argue that politicians may strategically manipulate fiscal variables, giving rise to Political Budget Cycles. Since voters assess incumbents on fiscal performance, office-seeking politicians tend to adopt expansionary policies before elections, even at the cost of higher fiscal deficits. Shi and Svensson (2003) emphasize that such behavior is intended to signal competence and increase the likelihood of political survival.

In this context, Schuknecht (2000) highlights capital expenditures, particularly investment in public works, as a primary instrument incumbents use to influence electoral outcomes. These expenditures are highly visible and electorally salient, contributing to perceptions of administrative effectiveness and significantly increasing incumbents' reelection prospects (Drazen & Eslava, 2010).

With regard to spending on public works and infrastructure, studies such as Bartoluzzio and Anjos (2020), Dias et al. (2018), Drazen and Eslava (2010), Eslava (2006), Klein (2010), Oliveira et al. (2023), Sakurai and Menezes-Filho (2008), and Veiga and Veiga (2007) show that voters tend to reward incumbents electorally when investments in this sector increase in the period preceding elections.

Based on this evidence, it is reasonable to expect that increased investment in public works during pre-election periods may also be associated with a higher incidence of irregularities identified in preliminary opinions. Pereira and Cordeiro (2012) argue that the political use of such investments as a vote-seeking strategy may lead to questionable decisions and reduced transparency in project execution. Accordingly, the first hypothesis is formulated:

- H1: Higher levels of spending on public works and infrastructure – i.e., investment expenditures – during pre-election periods are linked to an increase in the number of irregularities found in preliminary opinions and a higher likelihood of account rejection by the TCE-RJ.

Besides public investment, recent research highlights the strategic use of personnel expenditures as a tool for electoral influence. Lima et al. (2024) point out that such expenditures have been subject to strict regulation since the implementation of Complementary Law No. 101/2000, known as the Fiscal Responsibility Law (FRL).

However, Streb and Torrens (2013) argue that the FRL alone is not enough to fully control opportunistic behavior related to Political Budget Cycles. In this context, the role of courts of accounts as external oversight bodies becomes especially important (Macedo & Corbari, 2009).

Empirical evidence from Drazen and Eslava (2005), Lautenschlager (2017), Oliveira and Carvalho (2009), Morais et al. (2019), Salgueiro et al. (2021), and Santos (2024) indicates that increases in personnel expenditures during election years are linked to a higher likelihood of mayoral reelection, whether through better perceptions of well-being or by strengthening political support bases.

Accordingly, the expansion of expenditures, particularly related to personnel, can be interpreted as an opportunistic strategy aimed at short-term electoral gains, often at the expense of fiscal discipline. Such expenditures, when excessive or poorly planned, increase the risk of non-compliance with the FRL and may result in unfavorable preliminary opinions (Lautenschlager, 2017). Thus, the second hypothesis is proposed:

- H2: Higher levels of personnel expenditures during pre-election periods are linked to an increase in the number of irregularities found in preliminary opinions and a higher likelihood of account rejection by the TCE-RJ.

It is also important to note that the expansion of public spending, particularly personnel expenditures and capital investments during pre-election periods, can be influenced by the ideological stance of the incumbents. In Brazil, the party system is marked by a high degree of ideological diversity, spanning from left to right (Bartoluzzio et al., 2023; Tarouco & Madeira, 2013). Empirical evidence indicates that party ideology affects public spending patterns (Sakurai, 2009; Sakurai & Menezes-Filho, 2011), with left-leaning parties more likely to adopt expansionary policies, often linked to lower efficiency levels (Bartoluzzio et al., 2023; Gonçalves et al., 2017).

However, Couto (2025) emphasizes that, in the contemporary Brazilian context, decision-making processes are not solely driven by party-level dynamics but are strongly mediated by individual incentives and pragmatic governance arrangements. Party fragmentation and the increasing relevance of legislative arenas have shifted political coordination toward more individualized and negotiated forms, including at the municipal level. Thus, while party ideology remains analytically relevant, its effects on budgetary decisions tend to operate alongside individual electoral incentives.

In the context of oversight institutions, Velten (2015), analyzing preliminary opinions issued by the State Court of Accounts of Espírito Santo, finds that left-leaning parties are more likely to receive unfavorable opinions. Consistent with Hibbs (1977), this pattern may be explained by the greater propensity of left-wing governments to adopt interventionist policies, which expand public spending and may weaken fiscal discipline (Velten, 2015). This leads to the third hypothesis:

- H3: Left-leaning political parties are linked to a higher likelihood of account rejection and more irregularities in preliminary opinions during election years.

It is worth noting that both the expansion of public spending and the influence of party ideology tend to intensify in election years, driven by incumbents' incentives to secure reelection.

Cavalcante (2016), Ebeke and Olçer (2013), and Efthyvoulou (2012) show that election years are typically associated with higher fiscal deficits resulting from increased government spending, which may enhance reelection prospects. Conversely, Pereira and Cordeiro (2012) and Silva and Cruz (2018) find that, during these same periods, mayors are more likely to receive unfavorable preliminary opinions. Additionally, accounts may be deemed irregular, potentially leading to ineligibility for public office (Cella & Machado, 2020).

The expectation of reelection thus constitutes a core mechanism of the Political Public Cycles Theory, as incumbents strategically manipulate policy instruments to remain in power (Bracco et al., 2024). When reelection prospects are limited, opportunistic behavior may intensify, including the adoption of corrupt practices aimed at maximizing private gains before leaving office (Sidorkin & Vorobyev, 2018).

Within the context of oversight institutions, Ferraz and Finan (2005) and Santos et al. (2016) show that reports issued by the Office of the Comptroller General (CGU) and the TCE-RJ tend to identify more irregularities among second-term mayors. Based on this evidence, the following hypotheses are formulated:

- H4: Election years are linked to a higher number of irregularities identified in preliminary opinions and a higher likelihood of account rejection by the TCE-RJ.
- H5: Municipalities with reelected mayors are linked to a higher likelihood of account rejection and more irregularities in preliminary opinions issued by the TCE-RJ.

Finally, as emphasized by Downs (1957), politicians are motivated by the pursuit of income, prestige, and power. In this sense, the interaction between the Political Budget Cycles and the role of the courts of accounts highlights how the political environment shapes fiscal behavior and, consequently, accounting outcomes. This emphasizes the importance of robust auditing practices and effective oversight mechanisms. Moreover, it reinforces the relevance of studies on Political Budget Cycles, given that budgetary execution and fiscal management are central elements in the preliminary opinions issued by the courts of accounts.

3. RESEARCH METHODOLOGY

The selection of the State of Rio de Janeiro is justified by its historical challenges in fiscal governance and transparency. Many municipalities in the state face recurring fiscal crises that jeopardize budget execution and reveal structural deficiencies in public management, including resource misallocation, weaknesses in internal controls, and inconsistent transparency practices (Santos & Nazareth, 2017).

In this context, the State Court of Accounts of Rio de Janeiro (TCE-RJ) plays a central role in the system of external oversight, as the issuance of preliminary opinions on mayors' accounts falls under the authority of its collegiate body of auditors. Institutional developments over the past decade, particularly those affecting the court's composition through judicial decisions, highlight the importance of examining its performance and the procedures used to assess public accounts. In addition, the

TCE-RJ has advanced its governance and transparency practices, having been awarded the Diamond Seal in Public Transparency in 2025, a national recognition that signals its institutional strengthening.

The study population includes 91 municipalities whose preliminary opinions are issued by the TCE-RJ. The state capital was excluded because its accounts are reviewed by a separate municipal court of accounts. The municipalities of Carapebus, Itatiaia, Santa Maria Madalena, and Silva Jardim were also excluded, as no elections were held in 2020 due to judicial decisions, which affect the measurement of the reelection variable. Table 1 shows the distribution of favorable and unfavorable preliminary opinions issued by the TCE-RJ from 2014 to 2022.

TABLE 1 FAVORABLE AND UNFAVORABLE OPINIONS FROM THE TCE-RJ FROM 2014 TO 2022

Year	Favorable opinions	Unfavorable opinions
2014[1]	83	2
2015[2]	79	7
2016	20	67
2017	75	12
2018	70	17
2019	62	25
2020	59	28
2021	83	4
2022[3]	80	4
Total	611	166

Note: 1 = Cabo Frio and Miracema did not submit the necessary documentation to the TCE-RJ for the preparation of the preliminary opinions. 2 = Cabo Frio did not submit the required documentation to the TCE-RJ for the preliminary opinion. 3 = There was no conclusive prior opinion on the accounts of Barra do Piraí, Belford Roxo, and Nova Iguaçu.
Source: Elaborated by the authors.

The empirical strategy relies on two samples. The first, used in the Ordinary Least Squares (OLS) estimation, consists of 166 unfavorable preliminary opinions. The second, used in the Logit model, includes 166 unfavorable opinions and 119 favorable ones, selected based on electoral population size. Each unfavorable opinion was matched to a favorable one within the same year; however, in 2016, sample imbalance prevented complete matching. As a result, the final sample for the Logit estimation comprises 285 observations (166 unfavorable and 119 favorable).

The use of electoral population as the matching criterion is intended to align the empirical design with the Political Budget Cycles Theory. Electoral data were collected for the years 2014, 2016, 2018, 2020, and 2022 from the database of the Superior Electoral Court (TSE). As these data are published biannually, interpolation was required for the intervening years. Municipalities were grouped into three categories according to the size of the electorate, and matched pairs were randomly selected within each group.

The empirical analysis comprises four stages: i) descriptive statistics; ii) tests of mean differences between municipalities with favorable and unfavorable preliminary opinions; iii) Spearman and Pearson correlation analyses between the dependent variable (number of irregularities) and the explanatory variables, to assess the direction and strength of associations; and iv) the estimation of two regression models. The first model employs OLS, using the number of irregularities identified in unfavorable preliminary opinions as the dependent variable. The second model uses a Logit specification, in which the dependent variable is binary, indicating whether the preliminary opinion is favorable or unfavorable.

$$\begin{aligned} Irregularity = {} & \beta_0 + \beta_1 COVID - 19 + \beta_2 Distance + \beta_3 MHDI + \beta_4 ElectoralPop \\ & + \beta_5 ElectoralYear + \beta_6 Reelection + \beta_7 PolIdeology \\ & + \beta_8 InvestExp + \beta_9 InvestExp * ElectoralYear + \beta_{10} PersonnelExp \\ & + \beta_{11} PersonnelExp * ElectoralYear + \varepsilon \ (1) \\ Opinion = {} & \beta_0 + \beta_1 COVID - 19 + \beta_2 Distance + \beta_3 MHDI + \beta_4 ElectoralPop \\ & + \beta_5 ElectoralYear + \beta_6 Reelection + \beta_7 PolIdeology \\ & + \beta_8 InvestExp + \beta_9 InvestExp * ElectoralYear + \beta_{10} PersonnelExp \\ & + \beta_{11} PersonnelExp * ElectoralYear + \varepsilon \ (2) \end{aligned}$$

Table 2 highlights the definitions, measurement procedures, data sources, expected signs, and references.

TABLE 2 RESEARCH VARIABLES

Variable	Description and Measurement	Source	Expected sign	Authors
Irregularity (Number of irregularities – OLS)	Dependent variable. Number of irregularities in the 166 unfavorable preliminary opinions issued between 2014 and 2022.	TCE-RJ Transparency Portal: preliminary opinion		Silva et al. (2023)
Opinion (Unfavorable and favorable opinions – logit)	Dependent variable. Based on 166 unfavorable opinions and 119 favorable opinions between 2014 and 2022. Favorable opinions: 0; Unfavorable opinions: 1.			Milanezi & Monte-Mor (2017); Pereira & Cordeiro (2012) Velten (2015)
ElectionYear	Independent variable. Checks for more irregularities and a higher likelihood of account rejection during election years. Years 2016 and 2020: 1; other years: 0.	TSE	(+)	Cella & Machado (2020); Pereira & Cordeiro (2012)
Reelection	Independent variable. Checks for differences in the number of irregularities or the likelihood of account rejection between municipalities with reelected mayors and those with first-term mayors. Reelected candidates: 1; First-term candidates: 0.	TSE	(+)	Santos et al. (2016); Sidorkin & Vorobyev (2018)

(Continue)

Variable	Description and Measurement	Source	Expected sign	Authors
Ideology (Party ideology)	Binary independent variable. Checks whether administrations of left-leaning parties are more prone to a higher number of irregularities and if there's a greater likelihood of rejection of public accounts. Center or right-wing parties: 0; left-wing parties: 1.	TSE	(+)	Bartoluzzio et al. (2023); Gonçalves et al. (2017); Velten (2015)
InvestExp (Public works and infrastructure expenses)	Independent variable. Checks whether annual spending on public works and infrastructure leads to differences in the number of irregularities and whether it increases the probability of account rejection from 2014 to 2022.	TCE-RJ Transparency Portal: municipalities' committed investment expenditures disclosed in preliminary opinions	(+)	Bartoluzzio & Anjos (2020); Klein (2010); Oliveira et al. (2023)
InvestExp* ElectionYear (Interaction between public works and infrastructure expenses and election year)	Independent variable. Checks for changes in the relationship between public works and infrastructure expenses during the pre-election period and for irregularities or unfavorable opinions. This is measured by the interaction between the variable "investment expenditures" and the dummy "election year."			
PersonnelExp: (Expenditures related to personnel)	Independent variable. Checks whether annual spending on personnel leads to differences in the number of irregularities and whether it increases the probability of account rejection from 2014 and 2022.	TCE-RJ Transparency Portal: municipalities' personnel expenses disclosed in preliminary opinions.	(+)	Drazen & Eslava (2005) Morais et al. (2019); Oliveira & Carvalho (2009)
PersonnelExp* ElectionYear (Interaction between personnel expenses and election year)	Independent variable. Checks for changes in the relationship between personnel expenses during the pre-election period and for irregularities or unfavorable opinions. This is measured by the interaction between the variable "personnel expenditures" and the dummy "election year."			

Note: 1 = Supporting variables: personnel expenses and investment expenses. 2 = Variables related to the Political Cycle Theory: election year, investment expenses interacting with election year, personnel expenses interacting with election year, party ideology, and reelection. Hypotheses were formulated for these variables.

Source: Elaborated by the authors.

The control variables include COVID-19, geographic distance, the Municipal Human Development Index (MHDI), and electoral population. All are expected to exhibit a positive association with the dependent variables. The independent variable party ideology classifies Brazilian political parties along the ideological spectrum – far left, center-left, center, center-right, and far right – following Bartoluzzio et al. (2023). Finally, the study includes two complementary analyses based on the main regression models.

4. ANALYSIS OF RESULTS

4.1 Econometric results

A descriptive analysis of the sample of favorable and unfavorable preliminary opinions was conducted. The dataset comprises 285 observations, of which 166 are unfavorable, representing 58.24% of the total.

Regarding political orientation, 59 observations are linked to left-leaning mayors, while 226 are linked to right-leaning mayors. Of the 119 favorable preliminary opinions, 24 involve left-leaning mayors, whereas 35 of the 166 unfavorable opinions are associated with this group. Overall, mayors affiliated with right-leaning parties make up the majority of rejected accounts during the analyzed period, accounting for approximately 79% of the total.

TABLE 3 DESCRIPTIVE STATISTICS

	Mean	Median	Standard deviation	Minimum	Maximum
Total Sample					
Distance	145.0175	134.00	87.3597	19.80	386.00
MHDI	0.7131	0.713	0.0353	0.61	0.84
ElectoralPop*	10.8942	10.9737	1.2776	8.81	13.44
InvestExp*	15.8193	15.7197	1.6486	9.26	19.99
PersonnelExp*	18.5618	18.4850	1.2079	12.54	21.07
Favorable Opinion sample					
Distance	141.9773	134.00	82.2978	19.80	386.00
MHDI	0.7134	0.713	0.04089	0.61	0.84
ElectoralPop*	10.9199	11.0588	1.2811	8.85	13.43
InvestExp*	16.0724	16.0307	1.7819	10.06	19.99
PersonnelExp*	18.6175	18.6484	1.2010	16.73	21.07
Unfavorable Opinion sample					
Distance	147.1970	132.00	90.9982	19.80	386.00
MHDI	0.7129	0.715	0.03082	0.64	0.84
ElectoralPop*	10.8757	10.7185	1.2787	8.81	13.44
InvestExp*	15.6379	15.6226	1.5258	9.26	10.54
PersonnelExp*	18.5218	18.4803	1.2148	12.54	20.99

Note: * = values of these variables are in Natural Logarithm (ln).

Source: Elaborated by the authors.

As reported in Table 3, investment expenditure is the only variable exhibiting a substantial difference between groups. Municipalities with favorable preliminary opinions spent an average of BRL 9,553,326.73, whereas those with unfavorable opinions spent BRL 6,186,623.38, a difference of BRL 3,366,703.35. This represents the largest variation among the variables analyzed, suggesting that investment expenditure may be a relevant distinguishing factor between the groups.

Tests of mean differences were performed to compare the independent variables across municipalities with favorable and unfavorable preliminary opinions. Additionally, Pearson and Spearman correlation coefficients were calculated to evaluate the direction and strength of the relationships between the independent variables and the number of irregularities.

Before performing mean comparison tests, the normality of the variables was evaluated to determine whether parametric or non-parametric methods were suitable.

TABLE 4 KOLMOGOROV-SMIRNOV NORMALITY TEST

Variable	Opinion	P-value	Mean Test
Distance	1	<0.0001	Non-Parametric: Mann-Whitney
	0	<0.0001	
MHDI	1	0.0070	Non-Parametric: Mann-Whitney
	0	0.0100	
ElectoralPop	1	0.0130	Non-Parametric: Mann-Whitney
	0	0.0070	
InvestExp	1	0.2000	Parametric: T-test
	0	0.2000	
PersonnelExp	1	0.2000	Non-Parametric: Mann-Whitney
	0	<0.0001	

Source: Elaborated by the authors.

Table 4 presents the p-values from the Kolmogorov–Smirnov test alongside the mean comparison tests used for each variable. At the 10% significance level, the variables distance, MHDI, electoral population, and personnel expenditure reject the null hypothesis of normality and are thus analyzed with the non-parametric Mann–Whitney test. Investment expenditure does not reject normality and is analyzed using the parametric Student's t-test.

Accordingly, Table 4 presents the results of the mean difference tests using both the Student's t-test and the Mann–Whitney test, depending on the distributional properties of each variable.

TABLE 5 STUDENT'S T-TEST AND MANN-WHITNEY MEAN TESTS

	Parametric Test		Non-Parametric Test	Mean of Favorable Group	Mean of Unfavorable Group
	P-value Levene	P-value robust t	P-value Mann-Whitney		
Distance	-	-	0.952		
MHDI	-	-	0.995		
ElectoralPop	-	-	0.918		
InvestExp	0.038	0.032	-	16.0724	15.6379
PersonnelExp	-	-	0.759		

Source: Elaborated by the authors.

Table 5 shows that investment expenditure has a p-value of 0.038 in Levene's test, indicating heterogeneity of variances between groups. The corresponding robust t-test results in a p-value of 0.032, showing that the mean difference of 0.44 between municipalities with favorable and unfavorable preliminary opinions is statistically significant. This result suggests that municipalities with favorable preliminary opinions tend to display higher levels of investment expenditure. The variables distance, MHDI, electoral population, and personnel expenditure do not show statistically significant differences according to the Mann–Whitney test. For the subsample of unfavorable preliminary opinions, Table 6 reports Pearson and Spearman correlation coefficients used to assess the bivariate relationships between the independent variables and the number of irregularities.

TABLE 6 PEARSON AND SPEARMAN CORRELATION

		Distance	MHDI	ElectoralPop	InvestExp	PersonnelExp
Irregularity	Coef.	-0.057	0.003	0.092	-0.068	0.005
	P-value	0.465	0.972	0.237	0.381	0.945
Distance	Coef.		-0.309***	-0.585***	-0.279***	-0.256***
	P-value		0.000	0.000	0.000	0.001
MHDI	Coef.			0.525***	0.194**	0.271***
	P-value			0.000	0.012	0.000
ElectoralPop	Coef.				0.375***	0.465***
	P-value				0.000	0.000
InvestExp	Coef.					0.771***
	P-value					0.000

(Continue)

Correlation Spearman						
Irregularity	Coef.	-0.040	-0.022	0.015	-0.108	-0.077
	P-value	0.606	0.780	0.848	0.166	0.322
Distance	Coef.		-0.237***	-0.632***	-0.305***	-0.309***
	P-value		0.002	0.000	0.000	0.000
MHDI	Coef.			0.530***	0.230***	0.313***
	P-value			0.000	0.003	0.000
ElectoralPop	Coef.				0.394***	0.492***
	P-value				0.000	0.000
InvestExp	Coef.					0.832***
	P-value					0.000

Note: * = significant at 10%; ** = significant at 5%; *** = significant at 1%.
Source: Elaborated by the authors.

The econometric analysis includes OLS estimations, in which the dependent variable is the number of irregularities, and Logit models, in which the dependent variable is binary, indicating whether the preliminary opinion is favorable or unfavorable. Initially, a full specification including all independent variables was estimated for both models. However, the inclusion of interaction terms involving investment expenditure, personnel expenditure, and the election-year dummy resulted in multicollinearity.

To address this issue, the empirical specification was reorganized into three models for each estimation method: (1) a baseline model including investment and personnel expenditures without interaction with the election-year variable; (2) a model including investment expenditure and its interaction with the election-year variable, excluding the election-year dummy; and (3) a model including personnel expenditure and its interaction with the election-year variable, also excluding the election-year dummy.

After these adjustments, multicollinearity issues were reduced, with maximum Variance Inflation Factor (VIF) values of 2.828 for OLS and 3.198 for Logit, both below the conventional threshold of 10 (Gujarati & Porter, 2011). For the OLS estimates, White's test shows heteroskedasticity, so robust standard errors are used. Although residuals are not normally distributed, this is acceptable given the sample size, according to the Central Limit Theorem.

Table 7 reports the estimated coefficients, corresponding p-values from t-tests, R^2 values, and F-statistics for the OLS models, allowing for the assessment of model fit and statistical significance.

TABLE 7 REGRESSION RESULTS

Ordinary Least Squares (OLS) Regressions						
	Model 1		Model 2		Model 3	
	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value
Constant.	–0.0640	0.9859	3.5519	0.2850	1,1387	0.7558
ElectionYear	2.6571***	<0.0001				
Reelection	–0.3093	0.2690	–0.2985	0.2978	–0,3193	0.2701
Ideology	0.1390	0.7038	0.2262	0.5579	0,2813	0.4686
InvestExp	–0.3063**	0.0168	–0.2155**	0.0122**		
InvestExp*ElectionYear			0.1632***	<0.0001		
PersonnelExp	0.3707**	0.0283			–0,0187	0.8740
PersonnelExp*ElectionYear					0,1422***	<0.0001
COVID-19	–0.7600**	0.0437	–0.6930*	0.0648	–0,8152**	0.0328
Distance	–0.0015	0.2562	–0.0009	0.5191	–0,0008	0.5511
MHDI	–4.2442	0.4050	–3.4802	0.5047	–3,2497	0.5281
ElectoralPop	0.2652*	0.0652	0.3785**	0.0124	0,3037**	0.0393
R^2	0.4062***	<0.0001	0.3889**	<0.0001	0,3958***	<0.0001
heteroskedasticity		0.0241		0.0684		0.0297**
Normality		<0.0001		<0.0001		<0.0001***
MaximumVIF	2.828		2.047		2.189	
LOGIT Regressions						
	Model 4		Model 5		Model 6	
	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value
Constant.	-1.5384	0.620	0.9741	0.7289	-0.1723	0.9548
ElectionYear	1.1290***	0.0002				
Reelection	-0.3072	0.338	-0.3108	0.3307	-0.3664	0.2419
Ideology	-0.1919	0.550	-0.1742	0.5853	-0.1375	0.6635
InvestExp	-0.3131**	0.0193	-0.2175**	0.0249		
InvestExp*ElectionYear			0.07102***	0.0002		
PersonnelExp	0.3145	0.112			-0.0308	0.8345
PersonnelExp*ElectionYear					0.0614***	0.0001
COVID-19	-1.0151***	0.0038	-1.0136***	0.0038	-1.0808***	0.0020
Distance	0.0000	0.986	0.0004	0.786	0.0007	0.6713
MHDI	0.0658	0.987	0.4324	0.915	-0.4163	0.9176
ElectoralPop	0.0675	0.684	0.204	0.1683	0.0982	0.549
R^2	0.0645***	0.0030	0.0603***	0.0029	0.0493**	0.0143
MaximumVIF	3.1980		2.159		2.663	

Note: * = significant at 10%; ** = significant at 5%; *** = significant at 1%.

Source: Elaborated by the authors.

The results show that the control variable COVID-19 is statistically significant at the 10% level and negatively related to the dependent variables. Electoral population is statistically significant only in the OLS models and has a positive association.

Investment expenditure is statistically significant in Models 1, 2, 4, and 5, with a negative coefficient. This shows that higher investment expenditures during non-election periods are linked to fewer irregularities and a lower likelihood of unfavorable preliminary opinions. In contrast, personnel expenditure is only statistically significant in Model 1 (OLS), with a positive coefficient, suggesting that higher personnel expenditures in non-election periods are linked to more irregularities and an increased likelihood of account rejection.

With respect to variables associated with the Political Budget Cycles Theory, the election-year variable is statistically significant in Models 1 and 4, indicating that during election years, unfavorable preliminary opinions tend to exhibit more irregularities and a greater likelihood of account rejection. In Models 2 and 5, the interaction between investment expenditure and the election-year variable is statistically significant, suggesting that the negative effect of investment expenditure is attenuated in election periods.

The interaction between personnel expenditure and the election-year variable is positive and statistically significant in both OLS and Logit estimates, indicating that higher personnel expenditures during election years are associated with increased irregularities and a higher probability of unfavorable preliminary opinions. The variables reelection and party ideology are not statistically significant in any of the estimated models.

The COVID-19 variable has negative, statistically significant coefficients, indicating a reduction in both the number of irregularities and the likelihood of account rejection during the pandemic period. This result is consistent with the temporary relaxation of constitutional expenditure constraints in 2020 and 2021, particularly in the areas of health and education, which affected the evaluation criteria adopted by the TCE-RJ. The electoral population variable has a positive and statistically significant coefficient in the OLS estimates, suggesting that municipalities with larger electorates tend to exhibit more irregularities in preliminary opinions.

The election-year variable is a central element of the Political Budget Cycles Theory, capturing periods when incumbents face stronger incentives to maximize electoral returns. As shown in Table 7, this variable is statistically significant in Models 1 (OLS) and 4 (Logit), with a positive coefficient. This indicates that election years are associated with more irregularities and a higher likelihood of account rejection. This finding is consistent with the theoretical expectations of Political Budget Cycles and aligns with prior empirical evidence (Cella & Machado, 2020; Pereira & Cordeiro, 2012).

This pattern can be interpreted in light of the political incentives described by Downs (1957), according to which politicians seek to maximize power, prestige, and access to resources. During election years, these incentives intensify, leading incumbents to prioritize electoral gains, potentially at the expense of fiscal discipline and strict legal compliance.

Consequently, there is a greater tendency to allocate resources toward highly visible expenditures, particularly public works and infrastructure. However, the intensification of such spending may compromise budgetary and fiscal execution, increasing the likelihood of irregularities and reinforcing patterns consistent with opportunistic fiscal behavior (Bartoluzzio et al., 2023; Veiga & Veiga, 2007).

It is also important to note that election years coincide with the final year of the mayoral term, a period in which the Fiscal Responsibility Law (FRL) imposes additional constraints. In particular, the

TCE-RJ evaluates compliance with fiscal balance requirements and cash availability for the assumption of obligations, as established in Article 42 of the FRL. In 2016, 64 out of 67 unfavorable preliminary opinions included at least one irregularity related to these constraints, and 59 of these cases also involved additional irregularities. In 2020, 21 of 28 unfavorable opinions contained at least one such irregularity, and 24 also exhibited additional issues. These findings indicate that, beyond the specific fiscal constraints of the final year in office, election years are associated with a broader pattern of irregularities, making them particularly critical for municipal fiscal management.

Both investment expenditure and its interaction with the election-year variable (multiplicative dummy InvestExp*ElectionYear) are statistically significant in the OLS and Logit models. Investment expenditure presents a negative coefficient, whereas its interaction with the election-year variable is positive. This indicates that, in non-electoral periods, higher investment expenditure is associated with fewer irregularities and a lower likelihood of unfavorable preliminary opinions. However, during election years, this effect is attenuated, suggesting that increases in spending on public works and infrastructure may elevate the risk of irregularities and account rejection. These results provide empirical support for hypothesis H4 and are consistent with prior studies (Bartoluzzio & Anjos, 2020; Klein, 2010; Oliveira et al., 2023).

It is noteworthy that the TCE-RJ typically does not conduct in-depth qualitative assessments of public works and infrastructure expenditures in preliminary opinions, as its analysis focuses primarily on compliance with legal and fiscal requirements. As a result, such expenditures may be interpreted as neutral or even favorable, particularly when associated with long-term planning. However, this approach may be insufficient in election periods, when the strategic use of public spending intensifies to increase political visibility and capture votes. This dynamic potentially leads to less rigorous execution and a higher incidence of irregularities.

Personnel expenditure presents a positive coefficient and statistical significance only in Model 1 (OLS), indicating that increases in such expenditures in non-election periods are associated with a higher number of irregularities. The interaction between personnel expenditure and the election-year variable is statistically significant and positive in both OLS and Logit models, indicating that increases in personnel spending during election years are associated with more irregularities and a greater likelihood of unfavorable preliminary opinions. These findings support the corresponding hypothesis and are consistent with prior empirical evidence (Drazen & Eslava, 2005; Morais et al., 2019; Oliveira & Carvalho, 2009).

The TCE-RJ closely monitors personnel expenditures to ensure compliance with the FRL limits. The results suggest that these expenditures are subject to political manipulation, particularly in election years, in line with the Political Budget Cycles Theory. Such increases may result from hiring, wage adjustments, and the creation of public positions, potentially leading to administrative inefficiencies and increasing the likelihood of account rejection.

Finally, the variables related to reelection and political ideology are not statistically significant in the estimated models. Table 8 summarizes the results of the hypotheses.

TABLE 8 SUMMARY OF HYPOTHESIS TESTS – OLS AND LOGIT REGRESSION RESULTS

	Hypotheses	Expected sign	OLS Regression	Logit Regression	Status
H1	Investment Expenditure * Election Year	(+)	(+)***	(+)***	Supported
H2	Personnel Expenditure * Election Year	(+)	(+)***	(+)***	Supported
H3	Party Ideology	(+)	Not significant	Not significant	Not supported
H4	Election Year	(+)	(+)***	(+)***	Supported
H5	Reelection	(+)	Not significant	Not significant	Not supported

Source: Elaborated by the authors.

4.2 Complementary Analyses

4.2.1 Analysis of Constitutional and Fiscal Responsibility Law Irregularities

In this subsection, a complementary analysis is conducted using two Logit specifications. The first model includes unfavorable preliminary opinions that contain at least one constitutional irregularity, while the second focuses on those that include at least one irregularity related to the Fiscal Responsibility Law (FRL).

TABLE 9 GROUPS OF IRREGULARITIES

Number of opinions with at least one constitutional irregularity	Number of opinions with at least one irregularity related to the FRL
96	118

Source: Elaborated by the authors.

As reported in Table 9, among the 166 unfavorable preliminary opinions issued between 2014 and 2022, 96 (57.83%) contain at least one constitutional irregularity, whereas 118 (71.08%) include at least one irregularity related to the FRL. The Logit specification presented in the methodology is re-estimated using these subsamples, with the only modification being the definition of the dependent variable.

In the first model, the dependent variable is coded as 1 for the 96 unfavorable preliminary opinions with constitutional irregularities and 0 for the 119 favorable preliminary opinions, resulting in a total of 215 observations.

In the second model, the dependent variable is coded as 1 for the 118 unfavorable preliminary opinions with FRL-related irregularities and 0 for the 111 favorable preliminary opinions, totaling

229 observations. The years 2021 and 2022 are excluded from this analysis because there were no unfavorable preliminary opinions with FRL-related irregularities during those years.

TABLE 10 LOGIT REGRESSION RESULTS

Unfavorable Opinion with Constitutional Irregularities						
	Model 1		Model 2		Model 3	
	Coeff.	**P-value**	**Coeff.**	**P-value**	**Coeff.**	**P-value**
Constant	–5.2001	0.1543	–1.122	0.7250	–2.6851	0.4399
ElectionYear	1.3449***	0.0002				
Reelection	–0.0843	0.8197	–0.1346	0.7139	–0.1953	0.5860
Ideology	0.0035	0.9922	0.0277	0.9387	0.0692	0.8457
InvestExp	–0.4475**	0.0103	–0.2438**	0.0302		
Invest Ext*ElectionYear			0.0863***	0.0001		
PersonnelExp	0.5814**	0.0362			0.0210	0.9097
PersonnelExp*ElectionYear					0.0772***	0.0000
COVID-19	–0.9809**	0.0167	–1.004**	0.0147	–1.1182***	0.0062
Distance	0.0018	0.4266	-0.0009	0.6609	0.0007	0.7470
MHDI	1.4763	0. 7504	2.2896	0.6183	0.6326	0.8889
ElectoralPop	0.0045	0.9823	0.2627	0.1301	0.1198	0.5434
R^2	0.0894***	0.0218	0.0770***	0.0016	0.06461***	0.0037
MaximumVIF	4.132		2.155		2.942	
Unfavorable Opinion with Irregularities related to the Fiscal Responsibility Law						
	Model 4		**Model 5**		**Model 6**	
	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value
Constant	–3.5060	0.3452	0.6617	0.8427	–1.0379	0.7705
ElectionYear	2.1531***	0.0000				
Reelection	–0.3893	0.3291	–0.3966	0.3178	–0.4000	0.2999
Ideology	0.1677	0.6433	0.1750	0.6264	0.2061	0.5584
InvestExp	–0.4088***	0.0084	–0.3185***	0.0048		
Invest Ext*ElectionYear			0.1365***	0.00		
PersonnelExp	0.4174*	0.0541			–0.0440	0.7866
PersonnelExp*ElectionYear					0.1128***	0.0000
COVID-19	–1.6063***	0.0001	–1.6129***	0.0000	–1.6492***	0.0000
Distance	0.0010	0.6245	0.0015	0.4628	0.0018	0.3817
MHDI	–1.3780	0.7663	–1.0932	0.8141	–2.2122	0.6258
ElectoralPop	0.2217	0.2786	0.3790**	0.0325	0.2217	0.2356
R^2	0.1604***	0.0973	0.1558	0.0991***	0.1357***	0.0789
MaximumVIF	2.793		2.090		2.468	

Note: * = significant at 10%; ** = significant at 5%; *** = significant at 1%.

Source: Elaborated by the authors.

The results presented in Table 10 for variables associated with Political Budget Cycles align with those from the baseline Logit model (Table 7). These results indicate that, regardless of how the dependent variable changes, the preliminary opinion is affected by political manipulation during election periods.

4.2.2 Analysis of irregularities associated with the Political Cycle Theory

This specification restricts the analysis to irregularities directly associated with the Political Budget Cycles Theory. From 2014 to 2022, the TCE-RJ identified 21 types of irregularities across 166 unfavorable preliminary opinions, which were categorized into three groups: constitutional irregularities, FRL-related irregularities, and other categories.

Three types of irregularities were excluded from the analysis because they are not directly related to Political Budget Cycles. The dependent variable in this specification follows the same structure as in the OLS model presented in the methodology, capturing only the number of irregularities associated with political cycles. This approach allows for a robustness check focused on the subset of irregularities most closely aligned with the theoretical framework. The results are reported in Table 11.

TABLE 11 REGRESSION RESULTS – IRREGULARITIES RELATED TO THE POLITICAL BUDGET CYCLE

	Model 1		Model 2		Model 3	
	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value
Constant	–1.3234	0.7104	2.4899	0.4543	–0.1015	0.9777
ElectionYear	2.6838***	<0.0001				
Reelection	–0.2418	0.3727	–0.2337	0.4033	–0.2509	0.3712
Ideology	0.2265	0.5196	0.3183	0.3933	0.3661	0.3291
InvestExp	–0.2977**	0.0173	–0.1903**	0.0213**		
InvestExp*ElectionYear			0.1646***	<0.0001		
PersonnelExp	0.4022**	0.0145			0.0198	0.8576
PersonnelExp*ElectionYear					0.1436***	<0.0001
COVID-19	–0.7290*	0.0513	–0.6588*	0.0778	–0.7818**	0.0390
Distance	–0.0014	0.2824	–0.0008	0.5714	–0.0008	0.5775
MHDI	–3.2773	0.5219	–2.4539	0.6415	–2.2951	0.6577
ElectoralPop	0.2432*	0.0878	0.3637**	0.0158	0.2813*	0.0539
R^2	0.3871***	<0.0001	0.3703***	<0.0001	0.3804***	<0.0001
heteroskedasticity		0.0298		0.0567		0.0595**
Normality		<0.0001		<0.0001		<0.0001***
MaximumVIF	2.828		2.047		2.189	

Note: * = significant at 10%; ** = significant at 5%; *** = significant at 1%.

Source: Elaborated by the authors.

The findings indicate that restricting the analysis to irregularities related to the Public Budget Cycles Theory does not produce substantive changes in the estimated coefficients. This result reinforces the robustness of the main findings, suggesting that the observed relationships are not driven by unrelated categories of irregularities but remain consistent when focusing specifically on those linked to Political Budget Cycles.

4.2.3 Discussion of complementary results

The complementary analyses reinforce the evidence that Political Budget Cycles are associated with both the number and the nature of irregularities identified in unfavorable preliminary opinions, including constitutional violations and breaches of the FRL.

According to Salgueiro et al. (2021), the Political Budget Cycles Theory predicts that public officials adjust administrative and fiscal decisions in response to the electoral calendar, seeking political gains even when such behavior compromises legal compliance and fiscal efficiency. In the context of the TCE-RJ, this dynamic is reflected in an increased incidence of unfavorable preliminary opinions during election periods, accompanied by a higher frequency of constitutional irregularities and violations of the FRL.

Taken together, the results indicate that Political Budget Cycles exert a significant influence on municipal public management in the State of Rio de Janeiro. In particular, incumbents appear more likely to expand public works and personnel expenditures during election years to strengthen political support, even when such strategies increase the risk of noncompliance with fiscal and legal requirements.

Finally, the evidence suggests that the increase in both the number of irregularities and the likelihood of unfavorable preliminary opinions is not episodic, but rather reflects a systematic pattern associated with the electoral cycle. In this sense, unfavorable preliminary opinions issued by the TCE-RJ capture not only instances of legal non-compliance but also the broader effects of electoral incentives on fiscal behavior and public administration.

5. CONCLUSION

This study aims to identify, within the framework of political budget cycles, the factors that may explain a higher number of irregularities in preliminary opinions and increase the likelihood that public managers will have their accounts rejected by the TCE-RJ. To this end, hypotheses were formulated based on the Political Budget Cycles Theory, a topic that remains underexplored in studies of external control.

The results indicate that preliminary opinions issued by the TCE-RJ exhibit more irregularities during election years, and that mayors are more likely to have their accounts rejected during these periods. In addition, the findings show that mayors who increase investment and personnel expenditures during election years are more likely to receive preliminary opinions with more irregularities and unfavorable opinions.

It is important to emphasize that the results remained consistent even when irregularities were disaggregated into constitutional and Fiscal Responsibility Law (FRL)-related categories. Furthermore, an additional regression was conducted focusing exclusively on irregularities associated with the Political Budget Cycles Theory. In this specification, 18 irregularities were considered, compared to

21 in the main model. Even so, no substantive changes were observed, reinforcing the robustness of the empirical findings.

Overall, the results reveal a clear association between the electoral behavior of municipal executives in the state of Rio de Janeiro and outcomes in the external control process conducted by the TCE-RJ. This finding points to persistent institutional challenges, suggesting that existing regulatory frameworks have been insufficient to curb opportunistic behavior. In this context, the TCE-RJ's adoption of more effective monitoring mechanisms, particularly during pre-election periods, is warranted. Such measures may include targeted audits and advanced analytical tools to detect atypical spending patterns, particularly in public works and investment expenditures.

Beyond its technical role, the TCE-RJ may also strengthen its educational function by expanding training initiatives and issuing clearer guidance to foster a culture of compliance. Continuous capacity-building for municipal officials can help prevent irregularities, positioning the preliminary opinion as a proactive governance instrument. Moreover, enhancing transparency and promoting social accountability in the monitoring of public accounts are essential to increasing the effectiveness and reach of external control.

This study has some limitations. The period analyzed (2014–2022) encompasses only a single complete political cycle. Additionally, the lack of data on outstanding liabilities and previous-year expenditures in the TCE-RJ's preliminary opinions prevented the inclusion of these variables. The analysis was also limited to municipalities under the jurisdiction of the TCE-RJ.

Future research may extend the temporal scope of analysis, incorporate additional variables, such as public debt and transparency indicators, and further investigate the role of parliamentary amendments in political budget cycles, given that their allocation and execution may intensify opportunistic behavior during election periods and affect expenditure composition. Additionally, future studies may account for heterogeneity across municipalities by size, contributing to a more nuanced understanding of the observed effects.

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RESEARCH DATA AVAILABILITY

The data supporting the findings of this study are publicly available through the transparency portals of the State Court of Accounts of Rio de Janeiro (TCE-RJ) and the Superior Electoral Court (TSE). However, the consolidated dataset used in the analysis, including the spreadsheets developed for the regressions described in the methodology, is available from the corresponding author, Bianca Banhos, upon request.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

ARTIFICIAL INTELLIGENCE USAGE

The ChatGPT artificial intelligence tool was only used for grammar correction.