Does receiving a basic income encourage citizens to turn out to vote?

Evidence from mayoral and general elections in Brazil

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Abstract

Political theorists and enthusiasts of basic income programs advocate that receiving an unconditional, periodic, and nonwithdrawable cash payment can encourage voter turnout by freeing citizens' time, energy, and cognitive bandwidth. This paper provides the first quantitative assessment of this argument by studying *Renda Básica de Cidadania* (RBC) – currently the largest basic income program in Latin America. RBC pays a monthly transfer equivalent to 15% (R$170 ≈ US$35) of the national minimum wage to 42,000 (25%) of individuals living in Maricá, Brazil. Estimates from a difference-in-differences design show a substantive increase in voter turnout after the adoption of the basic income. Besides turnout, the RBC is also associated with a reduction of invalid votes – which tends to signal voters' lack of information about candidates or their dissatisfaction with the candidate pool. These effects appear in local and general elections and are robust across different models.

Keywords: Basic income; political participation; voter turnout; invalid votes; Brazil.

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1 Introduction

There is a consolidated pattern of voter turnout decline worldwide. In advanced industrial democracies and young democratic regimes, a growing number of people renounce their voting rights each election and stay away from ballot boxes (e.g., Beramendi and Anderson, 2008; Dahl et al., 2018; Kostelka and Blais, 2021). Even democracies adopting compulsory voting have been experiencing an increase in voter abstention (Katz, Levin et al., 2018).

The literature has advanced different (sometimes divergent) explanations for this pattern in voting behavior (Blais, 2006; Cancela and Geys, 2016; Santana and Aguilar, 2021). Still, scholars seem to agree that voter abstention is disproportionately concentrated among low-income citizens (e.g., Brady, Verba and Schlozman, 1995; Highton and Wolfinger, 1998; Lijphart, 2012; Bartels, 2018; Shafer et al., 2021)[1]. Across contexts, studies find that low income voters are typically underrepresented in the polls and less likely to cast ballots even in elections with compulsory voting where incentives for participation are higher (Fujiwara, 2015; Cepaluni and Hidalgo, 2016).

Meanwhile, basic income programs – which pays an unconditional, periodic, and nonwithdrawable income to individuals by virtue of their legal residence in a given territory (Torry, 2019) – are often framed by political theorists and enthusiasts as a policy that could prompt citizens to participate in elections. The logic behind such an idea is straightforward: By giving a secure and stable source of income, basic income programs free citizens' time, energy, and cognitive bandwidth, thus safeguarding the right to vote (Pateman, 2004; Goodhart, 2007; Birnbaum, 2012; Morales, 2018; Bidadanure, 2019).

While these theoretical mechanisms are largely established, the empirical relationship between

[1]Exceptions in the literature are Kasara and Suryanarayan (2015), Häusermann, Kurer and Wüest (2018), and Amat and Beramendi (2020).

basic income and turnout has yet to be examined. This paper provides the first quantitative assessment of this argument by studying *Renda Básica de Cidadania* (Citizens' Basic Income; henceforth RBC) – a basic income program implemented in Maricá, a mid-sized municipality in Brazil. Financed by revenues from explorations of oil and gas, the RBC has been running since 2013, and 42,000 of the 165,000 (25%) inhabitants of Maricá receive an unconditional monthly transfer of R$170 (≈ US$35). The population covered by the RBC is composed of all individuals with residence in Maricá for at least three years and who earn less than R$3300 – three times Brazil's national monthly wage of R$1,100 (≈ US$200).

Currently, the RBC is the only ongoing basic income program being implemented in the Brazilian state of Rio de Janeiro. Leveraging this opportunity, I use municipalities unaffected by this intervention to resemble a counterfactual and estimate the impact of the RBC on voter turnout. Because RBC is paid out in *Mumbucas*, a local currency which can only be used in Maricá, the counterfactual is not affected by potential spillovers created from the program, e.g. beneficiaries sending their benefits to neighbouring municipalities. Using granular data from all polling stations in the state of Rio de Janeiro (N = 31,650), I demonstrate that voter turnout in Maricá and the other municipalities in the same state follow parallel trends before the intervention. This result indicates that, in the absence of the RBC, voter turnout in Maricá would not have changed.

Estimates from a difference-in-differences design show that voter turnout increased by four percentage points in the local elections held after the adoption of the basic income. Substantively, these results suggest that 5% of registered voters in Maricá would not have voted in local elections held in 2016 and 2020 in the absence of the RBC. Statistical models using data from general elections reinforce this causal effect: After the adoption of the RBC, voter turnout increased in

Maricá compared to other municipalities in Rio de Janeiro state. I estimate that, in the absence of a basic income, roughly 3% of registered voters in Maricá would not have voted in the 2014 and 2018 general elections.

Crucially, estimates using a placebo treatment show no evidence of an increase in voter turnout in other municipalities benefiting from oil and gas royalties but without a basic income program. This result indicates that the adoption of the RBC was crucial to booster voter turnout in Maricá. I also rule out other alternative mechanisms that could increase participation in elections. Specifically, I provide evidence that the estimated impact of the RBC on voter turnout cannot be explained by an increase in the share of the population over 18 and under 70 (when voting is compulsory) or by the levels of schooling of the electorate.

I also investigate some of the implications of more people turning out to vote. Specifically, I test whether the RBC reduced the share of invalid votes in Maricá in comparison to the other municipalities in the same state. Although showing up to vote is compulsory in Brazil, voters have the option of not supporting any of the candidates running for office. That can be done by either selecting the option "blank" (voto em branco) or by pressing in the voting machine a combination of numbers that do not correspond to any registered candidate (voto nulo). Difference-in-difference estimates reveal that the adoption of the basic income in Maricá was determinant to not only mobilize voters, but also enhance the share of citizens casting valid options (supporting a candidate). These results appear in local and general elections and hold robust across different models.

Existing basic income programs typically last for relatively short periods (Haushofer and Shapiro, 2016; Gentilini et al., 2019). As of now, the RBC is running for eight years without any prospect of future discontinuation. Local authorities are currently working to extend the

program for all Maricá's citizens by the end of 2022, which would place RBC as the largest universal basic income worldwide.

The current study has implications for several strand in the literature on voting behavior, political economy, and development. First, most studies evaluating the basic income programs focus on their impact on socio-economic dimensions such as poverty, inequality, labor market, and mental health (e.g., Berman, 2018; Hoynes and Rothstein, 2019; Kangas et al., 2019; Hamilton and Mulvale, 2019). This paper shows that basic income programs can also impact citizens' predisposition to participate in elections. To my knowledge, this is the first study to systematically evaluate the effect of a basic income on voter turnout.

Second, evidence from Maricá contradicts the so-called resource curse theory which sustains that natural resources are likely to produce adverse economic and political effects (Sachs and Warner, 2001; Herb, 2005; Wick and Bulte, 2009). The RBC is an example of an application of oil and gas royalties to promote development in a middle-income country. Since low and middle-income countries are underrepresented in studies investigating the impacts of basic income programs (Banerjee, Niehaus and Suri, 2019), findings reported in the current paper can provide insights for scholars and policy-makers.

In the next section, I outline potential mechanisms by which a basic income can impact voter turnout. In section 3, I then describe the RBC, its characteristics, and the context of implementation. Section 4 presents the data and identification strategies implemented in this paper. Results are reported and discussed in section 5. Section 6 concludes and discusses the implications of findings for the literature. Online appendices A-H provide additional information on the data, analyses, and robustness checks.

2 Beyond freedom: The Democratic Case for a Basic Income

Voters are often prevented from participating in the electoral process. They can be excluded either on formal or material grounds. Formal exclusion entails the adoption of institutional rules to prevent some citizens from casting a ballot. For example, some democracies impose restrictive requirements on voter registration, which in turn disenfranchise otherwise eligible voters. Meanwhile, material exclusion takes place when citizens fail to participate in elections because they lack specific material resources even if no formal rule prevents them from turning out to vote. Not reaching the polling station because of a lack of transport or an inability to abstain from working are typical instances of material exclusion.

All political activities are costly because resources such as income, time, and information must be invested to carry them out (Aldrich, 1993; Pettigrew, 2017; Blais et al., 2019; Chen et al., 2019; Santana and Aguilar, 2021). Low-income voters face food, housing, and medical care restrictions and, as such, have reduced time and/or energy to dedicate to following public debates, participating in political organizations, or holding elected representatives accountable (Taylor-Robinson, 2010). Consequently, it is often the case that low-income voters are also less likely to turn out to vote (Cepaluni and Hidalgo, 2016; Bartels, 2018).

The proposal to grant individuals a periodic cash payment regardless of their social or work condition was initially framed as an instrument for securing individual freedom (Van Parijs, 2004; Van Parijs and Vanderborght, 2017) by giving individuals the possibility of expending more time on leisure and entrepreneurship activities. Nevertheless, other political theorists have defended that we should go beyond this individualistic approach by stressing the potential of a basic income to promote equity in the opportunities to integrate the *polis* (e.g., Pateman, 2004; Goodhart, 2007; Birnbaum, 2012; Morales, 2018). According to these authors, a basic

income has significant democratic potential because it promotes political participation and creates opportunities for citizens to develop their political capacities and skills. These goals could be achieved by lowering the costs of political engagement. Based on this logic, a basic income is fundamental to the exercise of democratic rights as it provides lifelong security that helps mitigate the costs of participating in politics irrespective of income.

Of course, one should expect a basic income to impact several dimensions of political participation. For the sake of simplicity and empirical tractability, this paper focuses on voter turnout, one of the key dimensions of political participation. Efforts that can reduce inequalities in electoral participation matter (Lijphart, 1997): Elections shape democratic representation, so unequal participation of voters in elections may negatively impact the overall performance of democratic institutions (Norris, 2012).

2.1 How may a basic income affect voter turnout?

In many democracies, voter turnout is higher among the rich than the poor (Kostelka and Blais, 2021; Shafer et al., 2021). It is commonly accepted among political theorists that individuals should enjoy primary conditions of subsistence to employ all their social and political capacities (Sen, 1982; Pettit, 2012). There is abundant evidence showing that being poor dramatically increases the likelihood of facing stress and other mental health dysfunctions (e.g., Belle, 1990; McLeod and Shanahan, 1993; Bryant-Davis et al., 2010; Das et al., 2007; Hanandita and Tampubolon, 2014). A basic income could enhance political participation by freeing up energy and the cognitive bandwidth of citizens living in vulnerable conditions.

A basic income can also compensate for the time spent with administrative procedures required for registration or the money invested with transportation to arrive at polling booths.

For example, it has been shown that the distance to polling stations can negatively affect citizens' decision to turn out to vote (Haspel and Knotts, 2005; Brady and McNulty, 2011). The existence of a basic income could mitigate these and other direct costs of voting.

Low-income voters typically perceive the benefits of voting not outweighing its costs (Cepaluni and Hidalgo, 2016; Turgeon and Blais, 2020). The rise of income inequality in many countries and the widespread perception that politicians do not take into account ordinary citizens' preferences have contributed to this scenario (Beramendi and Anderson, 2008; Schlozman, Verba and Brady, 2013; De Vries, Hobolt and Hobolt, 2020). For this reason, it is often assumed that a basic income could reverse that feeling of disillusionment with democracy and political institutions.

A basic income program may also create incentives for voters showing up to vote to defend a public policy with a direct impact on earnings. While conditional anti-poverty schemes can also create such a mobilization effect (Araújo, 2021), they are often focused on targeted populations and tend to be more vulnerable to economic shocks and political instability (Diaz-Cayeros, Estévez and Magaloni, 2016). They also face more opposition from those who help finance the program without directly enjoying its benefits (Corrêa and Cheibub, 2016). A basic income has the advantage of creating a prospect of continuous gains in welfare, thereby stimulating a stable pattern of political participation.

Through their impact on citizens' time, cognitive bandwidth, administrative costs, and perceptions of democracy and its policy rewards, basic income programs can thus encourage political participation. Building from this rationale, I hypothesize that:

- H1: In the presence of a basic income, citizens are more likely to show up to vote.

Low-income voters tend to be penalized with less time to compare candidates' ideas and policy proposals (Converse, 2000; Somin, 2020). As a result, even when showing up at the polling

stations, they are typically less capable of choosing among the options displayed on the ballot (Achen and Bartels, 2017). A basic income can subsidize time allocated for political activities, thereby decreasing the indirect cost of voting and allowing citizens' to be better informed. As such, I expect that:

- H2: In the presence of a basic income, citizens are less likely to discard their votes, thereby supporting at least one of the candidates running for office.

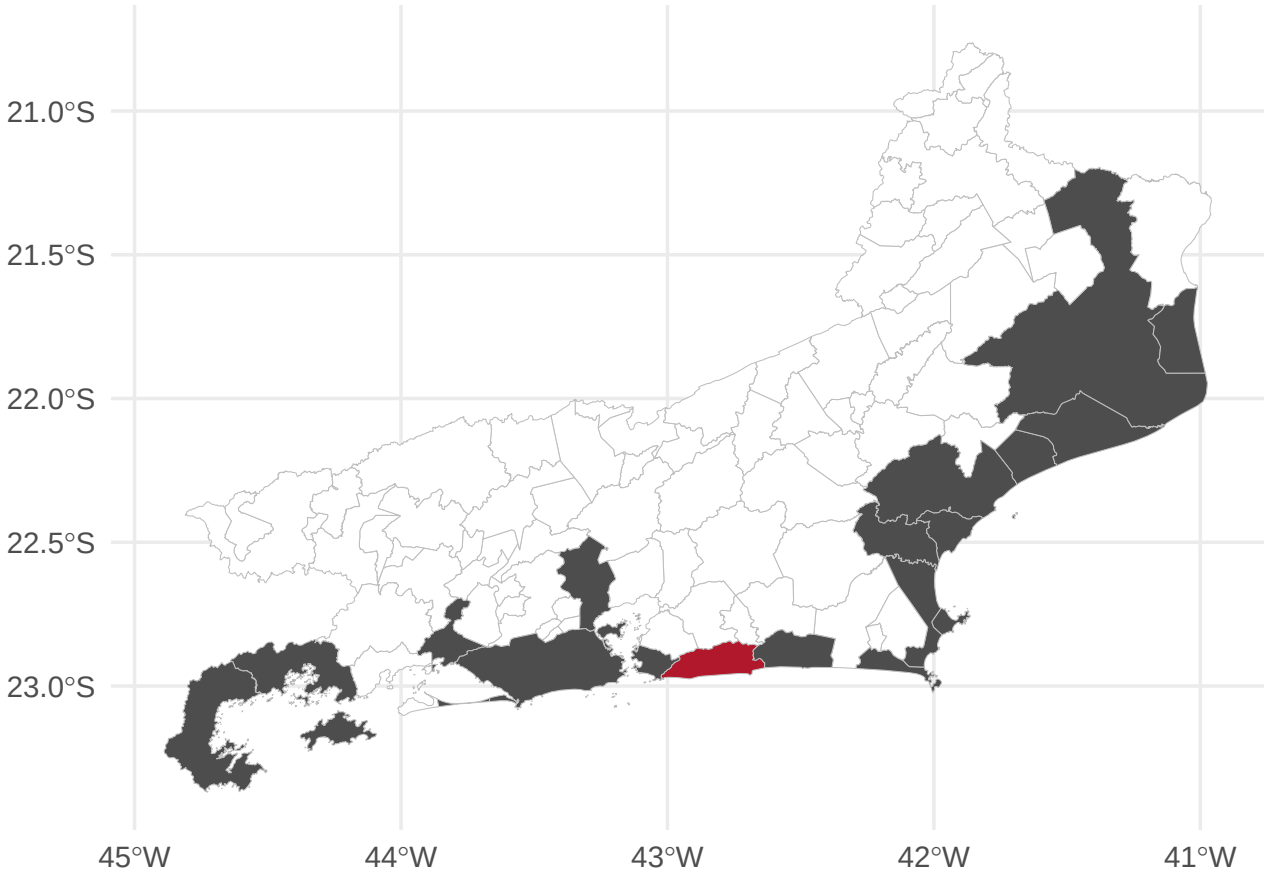
In this paper, I test these hypotheses using evidence from the RBC, currently the largest basic income program running in Latin America. Before describing data, methods and providing the results, the next section provides a detailed picture of this basic income program in Brazil and the characteristics that allow estimating its impact on participation in elections.

3 *Renda Básica de Cidadania* (RBC)

3.1 Context

In 2013, Maricá, a municipality with approximately 165,000 inhabitants located in Rio de Janeiro state, implemented the first basic income program in Brazil. From a fiscal perspective, this program was made possible after the Brazilian federal government discovered a new area for the exploitation of oil and gas in 2006: The Santos Basin Pre-salt Zone (SBPZ). The exploitation of natural resources in the SBPZ placed Brazil among the countries with the most significant oil potential in the world and made it a net oil exporter (da Silva and de Matos, 2016; Sauer and Rodrigues, 2016). In 2017, the SBPZ accounted for 50.7% of Brazil's national oil and natural gas production (Alves, Schmitz and Polette, 2020).

Figure 1: Santos Basin Pre-salt Zone (SBPZ) in the Rio de Janeiro state



Note: Figure shows all the 92 municipalities in the Rio de Janeiro state. The red one is Maricá; The black ones are the other 17 municipalities (Saquarema, Niterói, Rio de Janeiro, Duque de Caxias, Cabo Frio, Macaé, Casimiro de Abreu, Armação dos Búzios, Carapebus, Rio das Ostras, Quissamã, Itaguaí, Paraty, Angra dos Reis, Campos dos Goytacazes, São João da Barra, Arraial do Cabo) in the SBPZ; The white ones are the municipalities outside of the SBPZ.

Figure 1 shows the location of Maricá in the SBPZ. The municipality is surrounded by Niterói and Saquarema, two other municipalities with revenues that increased due to oil and gas royalties. In total, eighteen municipalities (Maricá + 17) in Rio de Janeiro state are net beneficiaries of oil and gas exploitation in the SBPZ. Despite fluctuations in oil prices, Maricá has experienced a substantive increase in its revenues in the last decade. Online Appendix B shows that Maricá had a total revenue per capita of R$1,056 in 2003. Ten years later, it was R$4,573, more than four times larger. In 2016, when Maricá decided to include more individuals in its basic income program, its revenue per capita was equivalent to the one observed in other municipalities in the SBPZ, R$6,119 and R$6,430, respectively.

3.2 The political economy of RBC

In the first of term of the Worker's Party (PT) in the presidency (2003-2006), the Brazilian Congress approved legislation[2] establishing a national universal basic income that should be paid for all Brazilians or foreigners living in Brazil for more than five years regardless of gender, income, or social condition. Eduardo Suplicy, an economist by training and at that time holding a seat in the Brazilian upper chamber (Senado), was the main enthusiast of the idea of implementing a basic income in Brazil. Several of his ideas, originally published as a book (Suplicy, 1998), oriented the discussion and the consequent approval of the legislation that enacted a basic income in Brazil. While the federal government never carried out this program, it served as an inspiration for Maricá to formulate its basic income program some years later.

After winning the 2008 mayoral elections in Maricá, the PT sent a bill to the local council to propose the creating of a basic income program. At that time, the opposition had control over

[2]Federal Law 10.835/2004.

the local legislature, so the proposal was not approved (Freitas and Egydio, 2014). In 2012, the PT candidate (Washington Quaquá) was re-elected to a new four-year term (2013-2016), but this time had secured a majority in the local council.

Starting in January of 2013, public audiences were held with the local population, third sector, religious leaders, and local traders. When sent to the local council again, the basic income was unanimously approved (Freitas and Egydio, 2014). The RBC was officially created in December 2013[3].

3.3 Eligibility and payments

The RBC pays a monthly income for those who have lived in Maricá for at least three years and earn less than R$3,300, three times Brazil's minimum monthly wage of R$1,100 (US$200). Conceived as a universal basic income under the law that started regulating the program in 2015[4],the RBC has already reached 42,000 of the 165,000 (25%) inhabitants of Maricá. While the RBC is does not yet cover Maricá's entire population, the program approximates a universal basic income due to the absence of conditionalities to keep receiving the monthly transfer, the fact that cash payments are transferred to individuals instead of households, and its plan for further expansion (Silva, Morais and Santos, 2020).

Once officially in the program, each beneficiary receives an identity card issued by Maricá's community bank, the Banco Mumbuca. This bank has adopted a local digital currency, called Mumbuca[5]. Beneficiaries can then use this card to buy food and several other items from local stores and merchants that accept Mumbuca in Maricá. Virtually all shops and services in

[3]Municipal-level Decree number 213/13.

[4]Municipal-level Decree law number 125/2015.

[5]This name was chosen in honour of the Mumbuca River located in Maricá. Mumbuca is a word in Tupi, one of the more than 250 languages from Brazilian native populations. In the original Tupi, Mumbuca means "Little black woman".

Maricá have been integrated into the program since 2015 (Dektar et al., 2020), but Mumbucas are restricted to Maricá and cannot be used in other localities. In combination, these rules attempt to prevent the rise of inflation and the flight of capital from Maricá to other neighboring municipalities.

Since its creation in 2013, the RBC has featured several different designs. From 2013 to 2016, it paid 85 Mumbucas (1 Mumbuca is equivalent to R$1) per month to roughly 14,000 households. In 2017, the RBC rose to 130 Mumbucas per household per month. In June 2019, the RBC shifted from a monthly payment of 130 Mumbucas per household to a monthly payment of 130 Mumbucas per individual[6], bringing the total number of beneficiaries to 42,000 (Dektar et al., 2020). In response to the Covid-19 outbreak, the RBC was increased to 300 Mumbucas in March 2021. In December 2021, this value was adjusted to pre-pandemic levels, and since then, each beneficiary has received a monthly transfer of 170 Mumbucas.

4 Empirical strategy

To estimate whether the RBC impacts electoral participation, I adopt a difference-in-difference design leveraging the timing of the creation of the policy. First, I compare the share of voter turnout and invalid votes (blank + null) in Maricá with other municipalities in Rio de Janeiro state without a basic income. I then compare Maricá with municipalities in the SBPZ, units that better resemble Maricá's characteristics, except for the fact they have not adopted a basic income program. All municipalities in this area have been beneficiaries of oil and gas royalties since 2006 and had an equivalent fiscal capacity to in Maricá when the RBC was created in 2013. As I discuss later in this paper, these two strategies reveal similar and consistent results.

[6]Municipal-level law number 2.869/2019.

4.1 Data

In Brazil, voting is compulsory for citizens between the ages of 18 and 70[7]. However, the penalty for not voting is a small fine of R$ 3.51 (US$ 0.90), so abstention still remains an option (Katz, Levin et al., 2018; Turgeon and Blais, 2020). Furthermore, once in the polling station, voters can opt to discard their votes by selecting the option "blank" (voto em branco) or by pressing in the voting machine a combination of numbers that does not correspond to any actual candidate in the dispute (voto nulo). These options are typically employed by those who are undecided about their vote choice. In some cases, they can also be used for signalling dissatisfaction with all candidates running for office (Zucco Jr and Nicolau, 2016).

I use data from Brazil's Electoral Court (Tribunal Superior Eleitoral, TSE) to create the outcome (dependent) variables used in this study: the share of registered voters who actually voted on election day (voter turnout), as well as the share of invalid votes (blank + null) in elections.

I also use data from the TSE to calculate the share of valid votes for the PT (the political party that created the RBC) in mayoral and presidential elections. Finally, I use the TSE data to compute measures of characteristics of the electorate in each polling station in Rio de Janeiro state, namely: 1) average schooling, 2) average age; and 3) the incidence of women registered to vote. Data on voters' characteristics are only available from 2008 onward. For this reason, statistical models (discussed later in this paper) that include these socio-demographic controls have fewer observations.

[7]Voting is optional for those between the ages of 16 and 18 or over 70.

4.1.1 Local elections

Every four years, Brazilians of 5,570 municipalities vote to elect a mayor and representatives of the local council (Câmara Municipal). I collected data from 31,650 polling stations in 92 municipalities in the Rio de Janeiro state, from which around 300 were located in Maricá in each election-year. The panel dataset comprises 189,902 observations from six consecutive local elections held in 2000, 2004, 2008, 2012, 2016, and 2020.

4.1.2 General elections

Every four years, Brazilian citizens elect a president (Presidente da República), state governors (Governadores), legislators for the subnational councils (Deputados Estaduais), legislators for the low chamber (Deputados Federais), and legislators for the upper chamber (Senadores). I collected data from all polling stations in 92 municipalities in the Rio de Janeiro state, from which around 300 were located in Maricá in each election-year. The panel dataset comprises 177,700 observations from six consecutive general elections held in 1998, 2002, 2006, 2010, 2014, and 2018[8].

4.2 Checking for parallel trends before the intervention

The validity of difference-in-difference designs relies on the assumption that a control group approximates the travelling path of the treated units so that the intervention (treatment) is not endogenous (parallel trends assumption). Since we cannot observe this counterfactual conditional expectation, this assumption is untestable by definition (Angrist and Pischke, 2008), and one can assume that the parallel trends assumption holds in the absence of evidence of its violation.

[8] Appendix A reports descriptive statistics for all variables used in this paper.

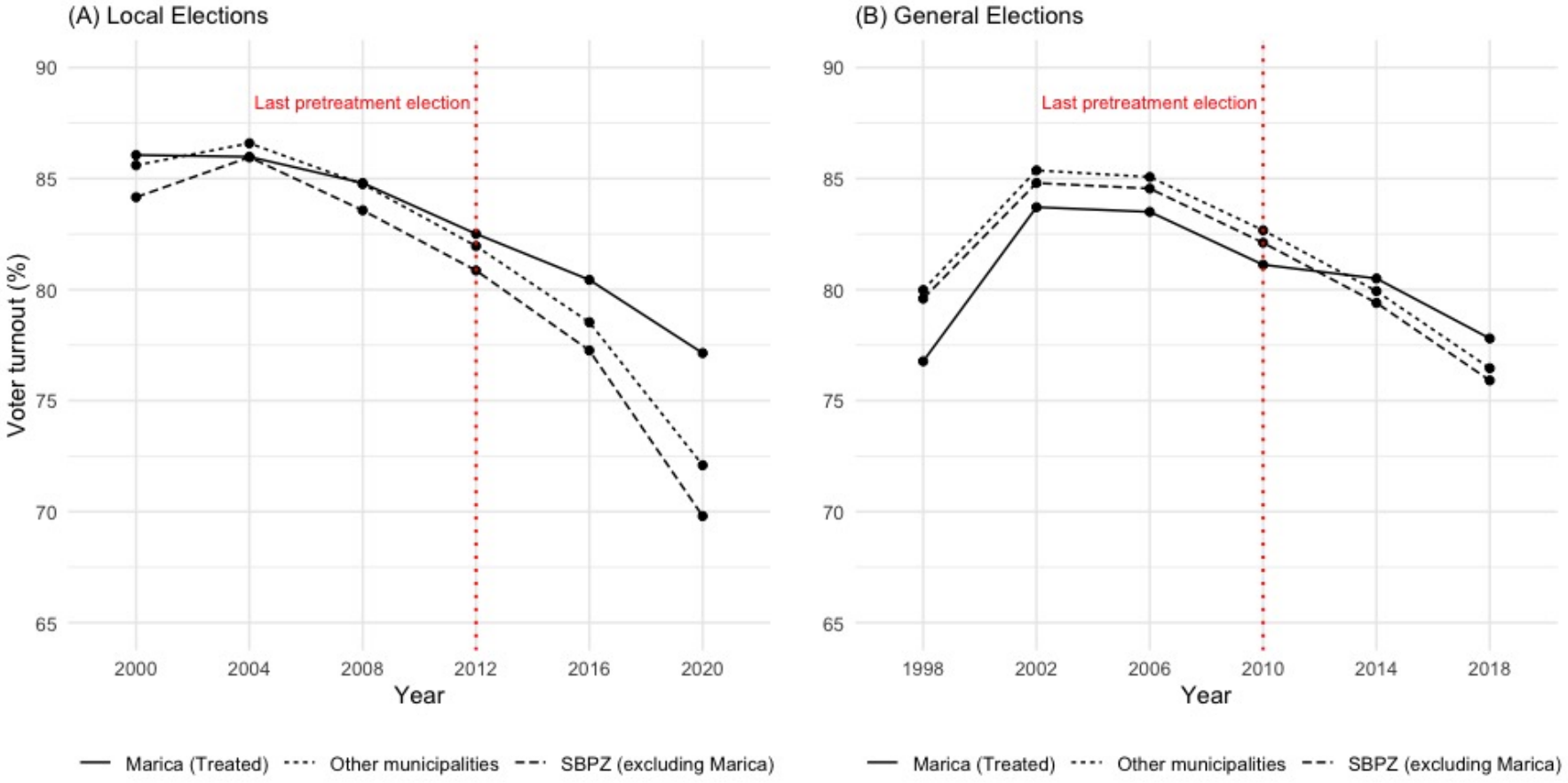
In a typical setting when this assumption holds, the difference between the treated and control units should be constant over time before the intervention.

Figure 2 plots voter turnout over time for three different groups in the Brazilian local (panel A) and general (panel B) elections. The first one, represented by the solid line, is the average turnout in polling stations located in Maricá. The other two lines represent voter turnout in the other municipalities located in the SBPZ and the rest of the municipalities in the Rio de Janeiro state, respectively.

The trend of voter turnout in the three groups was parallel with negligible differences before the implementation of a basic income in Maricá. The share of citizens turning out to vote in local elections has been decreasing over time, but Figure 2 reveals that the RBC decelerates this process in Maricá (panel A). Crucially, since 2016 the pattern of voter turnout in Maricá is notably different from the other two groups of municipalities in Rio de Janeiro.

Perhaps not coincidentally, the levels of voter turnout in Maricá in general elections (panel B) was above the other two groups of municipalities for the first time in 2014, just after the adoption of a basic income. The visual inspection suggests that this difference between Maricá and the other groups became even more salient fours years later when the 2018 general elections took place. Although there is an overall decreasing trend in voter turnout in all groups of municipalities in the Rio de Janeiro state, Maricá has been experiencing a slower decrease in voter turnout after the adoption of a basic income in 2013.

Figure 2: Voter turnout in Maricá versus municipalities in the control groups – Local (2000-2020) and general (1998-2018) elections



Note: The unit of analysis used to compute the mean is the polling station. The solid line (Treated) refers to voter turnout (%) in the polling stations in Maricá. The other two lines correspond to polling stations in the other municipalities in Rio de Janeiro state (N = 91) and the municipalities in the SBPZ excluding Maricá (N = 17), respectively.

4.3 Identification

Assuming a constant unit-time fixed effect, I use an ordinary least-squares (OLS) regression model to estimate the causal effect of the RBC on voter turnout and invalid votes (blank + null) in local and general elections held in Brazil from 1998 to 2020.

$$Y_{i,s\ ,t} = \alpha + \beta Treat_s + \gamma PostElec_t + \delta_r DiD(Treat_s X PostElec_t) + e_{i,s\ ,t} \quad (1)$$

The unit of analysis, i, is the polling station. s denotes the municipality, the level where the treatment occurred, while t refers to time. *Treat* is a dummy which takes a value of 1 if the polling station is located in Maricá; *Treat* controls fixed differences between the units being compared. *PostElec* is a dummy variable that assumes the value 1 if the election happened after the intervention in 2013. *Time* controls for the fact that conditions change over time for all units, whether treated or not. DiD is an interaction term created by multiplying *Treat* and *PostElec* that indicates treated polling stations in the post-treatment period.

In difference-in-differences models, conventional standard errors often understate the standard deviation of the estimators, meaning that standard errors are biased downward (Cunningham, 2018). To account for this, I run models with block bootstrapping standard errors (Gonçalves and White, 2005), and models with the standard errors clustered at the level where the treatment occurred (Bertrand, Duflo and Mullainathan, 2004).

5 Results

5.1 Full sample

Table 1 reports the results of estimates based on all polling stations in Rio de Janeiro state. The DiD coefficient is the average treatment effect on treatment (ATT). It is the coefficient that, under the assumptions discussed earlier in this paper, captures the estimated causal effect of the RBC on the outcomes of interest.

On average, there was a increase of 3.3 percentage points (CI 99% level) in voter turnout in Maricá (model 1). This estimated effect means a net average increase[9] of 4% of voters casting ballots in Maricá in local elections held in the post-treatment period (2016 and 2020). Substantively, this is equivalent to an average addition of 12.4 voters casting ballots in each polling station in Maricá[10]. Given that Maricá had 313 polling stations in the local election held in 2020, around 3.2% of registered voters[11] (3,893 voters) would not have voted in the absence of the RBC. This result stands in the models with clustered standard errors (model 2) and those that include socio-demographic controls (model 3).

Table 1 reveals that the same pattern can be observed in general elections. On average, there was a three percentage points (model 2) increase in voter turnout in Maricá in the elections held in the post-treatment period (2014 and 2018). Following the same logic described above, this effect represents a net increase of 3% in voter turnout. Assuming a constant effect across polling stations, about 3.3% of registered voters[12] (3,565 voters) would not have voted in the general

[9] I use the standard formula of percentage growth to estimate these effects. For example, before the intervention, the average voter abstention was 84.57 in Maricá (starting value). As per model 2 in Table 1, the estimated effect of the RBC on voter turnout is 3.3 percentage points. I use these values in the standard formula of percentage growth by dividing the estimated effect by the starting value: 3.3/84.57 = 0.039 x 100 = 3.9, or roughly 4%.

[10] On average, 311 voters showed up to vote in each voting station in Maricá before the invertention in 2013.

[11] Maricá had 121,577 registered voters in 2020.

[12] Maricá had 107,895 registered voters in 2018.

elections in the absence of the RBC. Also in this case, results hold consistent and robust in the models with clustered standard errors (model 5) and in the ones including socio-demographic controls (model 6).

Table 1: The effect of RBC on voter turnout (Full sample)

	Local Elections			General Elections		
	(1)	(2)	(3)	(4)	(5)	(6)
Treat	-0.0717	-3.582***	-1.360***	-1.908***	-1.899***	-0.844***
	(0.191)	(0.370)	(0.399)	(0.207)	(0.300)	(0.277)
Time	-9.263***	-9.214***	-4.792***	-5.193***	-5.193***	-1.826***
	(0.0336)	(0.640)	(0.404)	(0.0294)	(0.375)	(0.120)
DiD (Treat X Time)	3.362***	3.313***	2.519***	2.809***	2.809***	1.861***
	(0.285)	(0.640)	(0.501)	(0.318)	(0.375)	(0.203)
R^2	0.317	0.3157	0.6169	0.155	0.1549	0.4773
Obs.	185898	185898	129278	177700	177700	97368
N.Clusters		92	92		92	92
Block bootstrapping SE	✓			✓		
Clustered SE		✓	✓		✓	✓
Municipal-level FE		✓	✓		✓	✓
PS-level Controls			✓			✓

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Note: The unit of analysis is the polling station (PS). Dependent variable is (%) voter turnout in local (models 1-3) and general (models 4-6) elections. The following variables, measured at the polling station level, are included in the models: the average level of voters' schooling; the average age of voters; and the incidence of women registered to vote.

Online Appendix C depicts the share of valid votes cast for the PT over time in both mayoral (2000-2020) and presidential elections (1998-2018). While it is clear that there is an increase in the PT's popularity after the adoption of the basic income in Maricá, the performance of this political party in mayoral elections has already been increasing since 2008, five years before the adoption of the RBC. Crucially, the PT's candidates in presidential elections obtained fewer votes in elections held in the post-treatment period (2014 and 2018). Hence, the observed higher voter turnout in Maricá was likely not driven by those trying to reward the PT at the polling

booth.

Voter turnout is typically higher among well-educated voters (e.g., Blais, Gidengil and Nevitte, 2004; Sondheimer and Green, 2010). Suppose that, for other reasons not related to the existence of a basic income, the population of Maricá became better educated concomitantly with the adoption of the RBC. In that case, the observed effect of the basic income program on voter turnout could be explained by higher schooling attainment of registered voters in Maricá. As reported in Online Appendix D, there is no evidence in favor of this alternative explanation. I found no differences in the level of schooling between those registered to vote in Maricá and the ones voting in other municipalities in the Rio de Janeiro State.

Voting is compulsory in Brazil for citizens between the ages of 18 and 70, but it is optional for those between the ages of 16 and 18 or over 70. If during the intervention the population of Maricá became disproportionately distributed between 18 and 70, the estimated effect of the RBC on voter turnout could be a mechanical effect produced by changes in the demographic characteristics of Maricá's electorate. Online Appendix E shows that the average age of people registered to vote in Maricá and in other municipalities in Rio de Janeiro State is virtually the same over time (2008-2020).

5.2 Restricted sample

I estimate alternative models using a restricted sample that considers only municipalities in the SBPZ. In this case, instead of comparing Maricá with the other 91 municipalities in Rio de Janeiro state, I compare Maricá with the other 17 net beneficiaries of oil and gas in the same state. Since municipalities in this area benefit from royalties since 2006 and had an equivalent fiscal capacity when the basic income program intervention started in Maricá in 2013, this is

presumably a more conservative estimate of the impact of the RBC on voter turnout.

Table 2 reports the estimated effect of the RBC on voter turnout in Maricá using a restricted sample. On average, voter turnout increased 4 percentage points after the adoption of the RBC, a net increase of 5% in local elections. Estimates using general elections data point in the same direction: There was a 3 percentage points increase (CI 99% level) in the number of voters turning out to cast ballots in Maricá. Besides being consistent across different models, estimates using the restricted sample are even more sizable than the ones reported in Table 1. These findings provide further evidence that the RBC has slowed down voter abstention in Maricá.

Table 2: The effect of RBC on voter turnout (Restricted sample)

	Local Elections			General Elections		
	(1)	(2)	(3)	(4)	(5)	(6)
Treat	1.027***	-2.828***	-0.590	-1.378***	-1.267***	0.242
	(0.166)	(0.735)	(0.674)	(0.212)	(0.454)	(0.565)
Time	-9.976***	-9.910***	-5.312***	-5.211***	-5.208***	-1.758***
	(0.0488)	(0.752)	(0.428)	(0.0441)	(0.655)	(0.191)
DiD (Treat X Time)	4.075***	4.009***	3.129***	2.827***	2.824***	1.900***
	(0.251)	(0.752)	(0.536)	(0.303)	(0.655)	(0.331)
R^2	0.333	0.329	0.639	0.155	0.155	0.485
Obs.	102134	102134	71297	97782	97782	53364
N.Clusters		18	18		18	18
Block bootstrapping SE	✓			✓		
Clustered SE		✓	✓		✓	✓
Municipal-level FE		✓	✓		✓	✓
PS-level Controls			✓			✓

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Note: The unit of analysis is the polling station (PS). Dependent variable is (%) voter turnout in local (models 1-3) and general (models 4-6) elections. The following variables, measured at the polling station level, are included in the models: the average schooling of voters; the average age of voters; and the incidence of women registered to vote.

5.3 Models using a placebo treatment

An alternative approach to test the assumption of parallel trends is performing regressions with a "placebo" treatment. For this test, researchers typically estimate new models using a "fake" treatment group, that is, a group that presumably was not affected by the intervention. I use the other 17 municipalities located in the SBPZ to create a placebo treatment group. In this case, the treatment variable assumes the value 1 if the polling station is located in the SBPZ (excluding Maricá), and 0 otherwise.

Table 3: The effect of RBC on voter turnout (Placebo Estimates)

	Local Elections			General Elections		
	(1)	(2)	(3)	(4)	(5)	(6)
Treat	-2.408***	-0.693	-0.563	-1.174***	-0.773	-1.240*
	(0.0275)	(0.811)	(0.751)	(0.0382)	(0.563)	(0.636)
Time	-8.350***	-8.370***	-4.010***	-5.177***	-5.175***	-1.758***
	(0.0428)	(0.417)	(0.367)	(0.0467)	(0.277)	(0.253)
DiD (Treat X Time)	-1.626***	-1.540*	-1.430**	-0.0345	-0.0331	-0.128
	(0.0681)	(0.845)	(0.684)	(0.0639)	(0.697)	(0.410)
R^2	0.355	0.343	0.624	0.164	0.162	0.473
Obs.	184590	184590	128268	176518	176518	96629
N.Clusters		91	91		91	91
Block bootstrapping SE	✓			✓		
Clustered SE		✓	✓		✓	✓
Municipal-level FE		✓	✓		✓	✓
PS-level Controls			✓			✓

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Note: The unit of analysis is the polling station (PS). Dependent variable is (%) voter turnout in local (models 1-3) and general (models 4-6) elections. The following variables, measured at the polling station level, are included in the models: the average schooling of voters; the average age of voters; and the incidence of women registered to vote.

Suppose results reported in Tables 1 are solely driven by the RBC and not by confounders that an increase in revenues from royalties of oil and gas could create. In that case, one should observe either a negative or a null effect of this placebo treatment on voter turnout. Put

differently, if the effect reported in Tables 1 and 2 is caused by the adoption of a basic income, one should not observe a positive effect of the RBC among units that did not adopt the policy.

As expected, I found no evidence of the RBC positively affecting voter turnout when using a placebo treatment. None of the estimates (models 1-6) reported in Table 3 is positive. Only in the models for the local elections, the interaction DiD (Treat X time) is statistically significant, even though (and crucially) always with a negative sign. These findings corroborate the interpretation that the adoption of a basic income program was determinant for reducing voter abstention in Maricá.

5.4 The effect of RBC on invalid votes

In spite of compulsory voting for citizens between the ages of 18 and 70, around 15% of registered voters do not actually show up to vote on election day (Turgeon and Blais, 2020; Katz, Levin et al., 2018). Besides the weak monetary penalties applied to those not showing up to vote (Cepaluni and Hidalgo, 2016), voters' disillusionment with the quality of democracy can also be credited as a factor inducing voter abstention in Brazil (Borba, 2008).

It is worth saying that even among those complying with the compulsory voting rule, a small fraction of voters, typically something between 5% and 10%, decide not to support any of the candidates running for office (Zucco Jr and Nicolau, 2016). This is possible because the voting machine used in the Brazilian elections has the option "blank" (voto em branco), which gives voters the option of attending the polling booth without the obligation of signaling a preference for a specific candidate. Voters can also cast an invalid vote by pressing a combination of numbers that do not correspond to any candidate running for office (voto nulo).

As discussed in the previous section, the RBC has increased the participation in elections

in Maricá. Table 4 indicates that the adoption of a basic income can also disincentivize voters to discard their ballots. In local elections held in the post-treatment period (2016 and 2020), the share of invalid votes (blank + null) decreased by 5 percentage points (model 3). Likewise, models using general elections data reveal a substantive and statistically significant (CI 99% level) negative effect of the RBC on the share of invalid votes. In this case, there was a 4 percentage points reduction in the number of voters opting for blank and null votes. Models using a restricted sample (reported in Online Appendix F) show similar results. Online Appendix G and H report separate estimates using the share of blank votes and the share of null votes. In both cases, coefficients are negative and statistically significant.

Table 4: The effect of RBC on the share of invalid votes (blank + null) - Full sample

	Local Elections			General Elections		
	(1)	(2)	(3)	(4)	(5)	(6)
Treat	-1.627***	2.587***	4.244***	-0.118	-0.113	3.514***
	(0.101)	(0.268)	(0.701)	(0.206)	(0.188)	(0.267)
Time	6.152***	6.301***	5.535***	1.367***	1.391***	2.470***
	(0.0300)	(0.731)	(0.723)	(0.0250)	(0.235)	(0.153)
DiD (Treat X Time)	-5.724***	-5.874***	-5.139***	-3.718***	-3.742***	-3.810***
	(0.181)	(0.731)	(0.484)	(0.246)	(0.235)	(0.143)
R^2	0.259	0.255	0.103	0.021	0.021	0.222
Obs.	185801	185801	129181	177700	177700	97368
N.Clusters		92	92		92	92
Block bootstrapping SE	✓			✓		
Clustered SE		✓	✓		✓	✓
Municipal-level FE		✓	✓		✓	✓
PS-level Controls			✓			✓

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Note: The unit of analysis is the polling station (PS). Dependent variable is the share of invalid votes (blank + null) in local (models 1-3) and general (models 4-6) elections. he following variables, measured at the polling station level, are included in the models: the average schooling of voters; the average age of voters; and the incidence of women registered to vote.

Table 4 shows that the effect of the RBC on the share of invalid votes is almost twice as

large as the effect of the RBC on voter turnout (reported in Tables 1 and 2). This finding suggests that the effect of the RBC on invalid votes cannot be entirely attributed to the fact that adopting a basic income enhanced the electoral participation in Maricá.

A plausible answer to this puzzle is that the RBC has decreased the indirect costs of voting: As people voting in Maricá started experiencing more time and opportunities to compare candidates' policy proposals, they were more capable to select among the candidates running for office. Besides prompting the participation of previously demobilized voters, the available evidence suggests that the RBC was also important to mitigate voters' lack of knowledge about candidates. Therefore, one can tentatively interpret the results reported in Table 4 as evidence that the adoption of the RBC in Maricá has impacted electoral participation through different channels–mobilization and information.

Conclusion

Do basic income programs encourage citizens to turn out to vote? This paper sought to answer this question by studying the Renda Basica de Cidadania (Citizens' Basic Income, RBC) - a monthly income transfer implemented in Maricá (Brazil), which is currently the largest basic income program running in Latin America. Estimates from a difference-in-difference design reveal that the adoption of a basic income program slowed down the trend of increasing abstention in Maricá. This positive impact of the RBC on voter turnout is robust across several models and appears in local and general elections.

The adoption of a basic income program in Maricá has not only prompted citizens to turn out to vote but also decreased the share of voters casting blank and null options in the voting machine. Importantly, this reduction was most likely only partly induced by the rise in the

number of people attending the polling booth. The negative effect of the RBC on invalid votes can be interpreted as a consequence of voters having more time to consume political information. Exploiting in detail this and other mechanisms outlined in the current paper is a promising avenue for future research.

One could ask for how long the effects documented in Maricá are expected to last. While the current paper does not provide a conclusive answer to this question, the existent literature has shown that voting may be habit-forming: Casting a ballot in one election increases one's propensity to go to the polls in the future (Gerber, Green and Shachar, 2003; Dinas, 2012). For this reason, it is likely that a basic income can have a long-term impact on electoral participation. Also, it points in the direction that the effect of a basic income detected in the Brazilian context can potentially travel to other contexts where voting is not compulsory.

It is also plausible to expect that the effect of basic income programs also applies to other political outcomes. For example, how does a basic income impact peoples' attitudes toward democracy? The implementation of welfare policies can signal to low-income voters that democratic regimes function and help to improve their well-being (Shafer et al., 2021). Therefore, a basic income has the potential to improve citizens' evaluations of political institutions and increase the overall perception that development is likely under democracy.

Another gap for future discussion falls into the debate on vulnerability and forms of political engagement. Experimental evidence shows that the supply of water cisterns in drought-prone areas of Brazil weakens clientelism because citizens become less inclined to support candidates in exchange of material goods (Bobonis et al., 2017). Another recent contribution by Frey (2020) suggests that vulnerability reduction can undermine the power of local political machines. In this case, a lower commitment to electoral clientelism comes with the cost of less political

participation. Future studies should try to identify what political activities voters decide to abstain from once they are lifted from extreme poverty.

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Does receiving a basic income encourage citizens to turn out to vote?

Evidence from mayoral and general elections in Brazil

Online Appendix

Contents

A Descriptive statistics

Table 1: Descriptive statistics - Local elections

Variable	Obs	Mean	Std.Dev.	Min	Max
Voter turnout (%)	185,898	81.39	7.840	1.961	100
Blank votes (%)	185,801	3.864	2.336	0	21.39
Null votes (%)	185,898	7.755	4.032	0	33.33
Invalid votes (%)	185,801	11.62	5.776	0	41.60
Treatment	189,902	0.006	0.0830	0	1
Placebo treatment	189,902	0.538	0.499	0	1
Average age*	133,282	47.12	6.522	19.60	73.59
Average schooling*	133,282	4.426	0.689	1.780	8
Incidence of women†	133,282	3.103	0.109	2	4
Share of PT's valid votes‡	93,983	13.80	15.17	0.127	96.32

Note: Compiled by the author with data from the *Tribunal Superior Eleitoral* (Superior Electoral Court, TSE). The unit of analysis is the polling station (PS). †This indicator varies between 2 and 4. Values closer to 4 indicate higher incidence of women voters in a given polling station. ‡This indicator refers to the share of valid votes for PT in mayoral elections. This variable has fewer observations because PT did not present candidates in several municipalities in Rio de Janeiro state in the electoral period (2000-2020) covered in the dataset. *Socio-demographic variables measured at the level of polling stations are available only from 2008 onward. That explains the fewer number of observations for these variables.

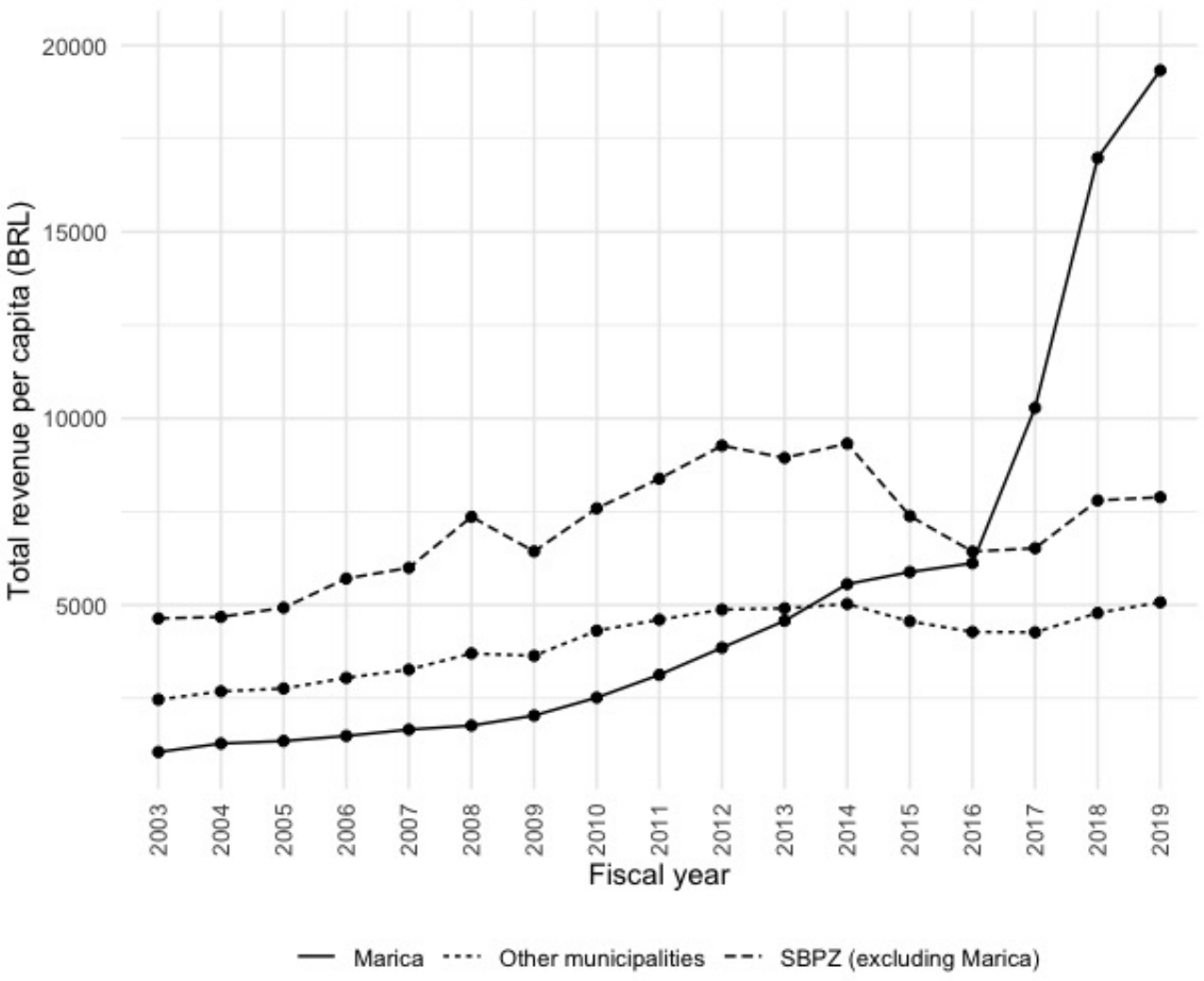
Table 2: Descriptive statistics - General elections

Variable	Obs	Mean	Std.Dev.	Min	Max
Voter turnout (%)	177,700	81.41	6.371	1.266	100
Blank votes (%)	177,700	3.344	1.790	0	22.22
Null votes (%)	177,700	7.612	3.758	0	100
Invalid votes (%)	177,700	10.96	4.691	0	100
Treatment	177,700	0.00665	0.0813	0	1
Placebo treatment alt	177,700	0.544	0.498	0	1
Average age*	97,368	46.97	6.475	17	72.16
Average schooling*	97,368	4.406	0.683	1.814	7.185
Incidence of women†	97,368	3.104	0.109	2	4
Share of PT's valid votes‡	177,679	36.55	16.16	0.457	94.51

Note: Compiled by the author with data from the *Tribunal Superior Eleitoral* (Superior Electoral Court, TSE). The unit of analysis is the polling station (PS). †This indicator varies between 2 and 4. Values closer to 4 indicate higher incidence of women voters in a given polling station. ‡This indicator refers to the share of valid votes for PT in presidential elections. *Socio-demographic variables measured at the level of polling stations are available only from 2010 onward. That explains the fewer number of observations for these variables.

B Revenue per capita by groups of municipalities in Rio de Janeiro state

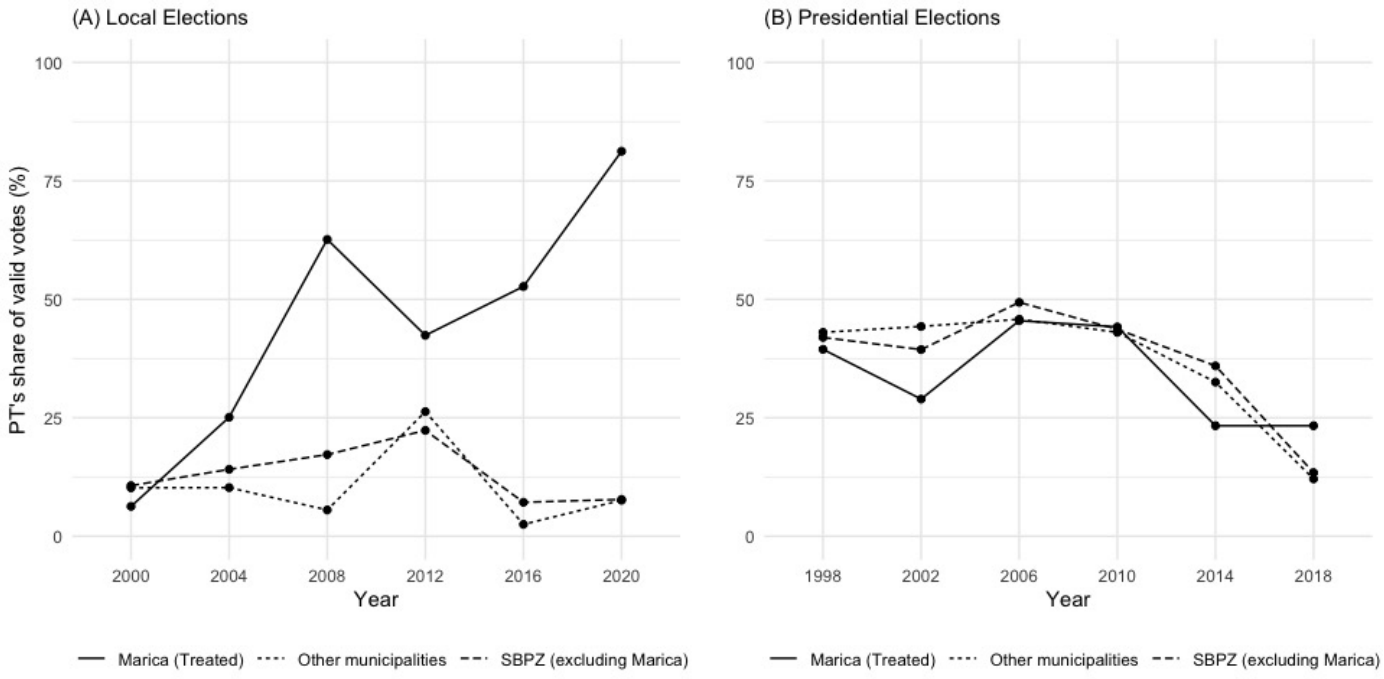
Figure 1: Total revenue per capita by groups of municipalities in the Rio de Janeiro state



Note: The unit of analysis is municipality (N = 92). Pre-salt zone (N = 17) is composed by the following municipalities in the Rio de Janeiro state: Saquarema,Niterói, Rio de Janeiro, Duque de Caxias, Cabo Frio, Macaé, Casimiro de Abreu, Armaçãodos Búzios, Carapebus, Rio das Ostras, Quissamã, Itaguaí, Paraty, Angra dosReis, Campos dos Goytacazes, São João da Barra, and Arraial do Cabo.

C Share of valid votes for the PT - Local (2000-2020) and General elections (1998-2018)

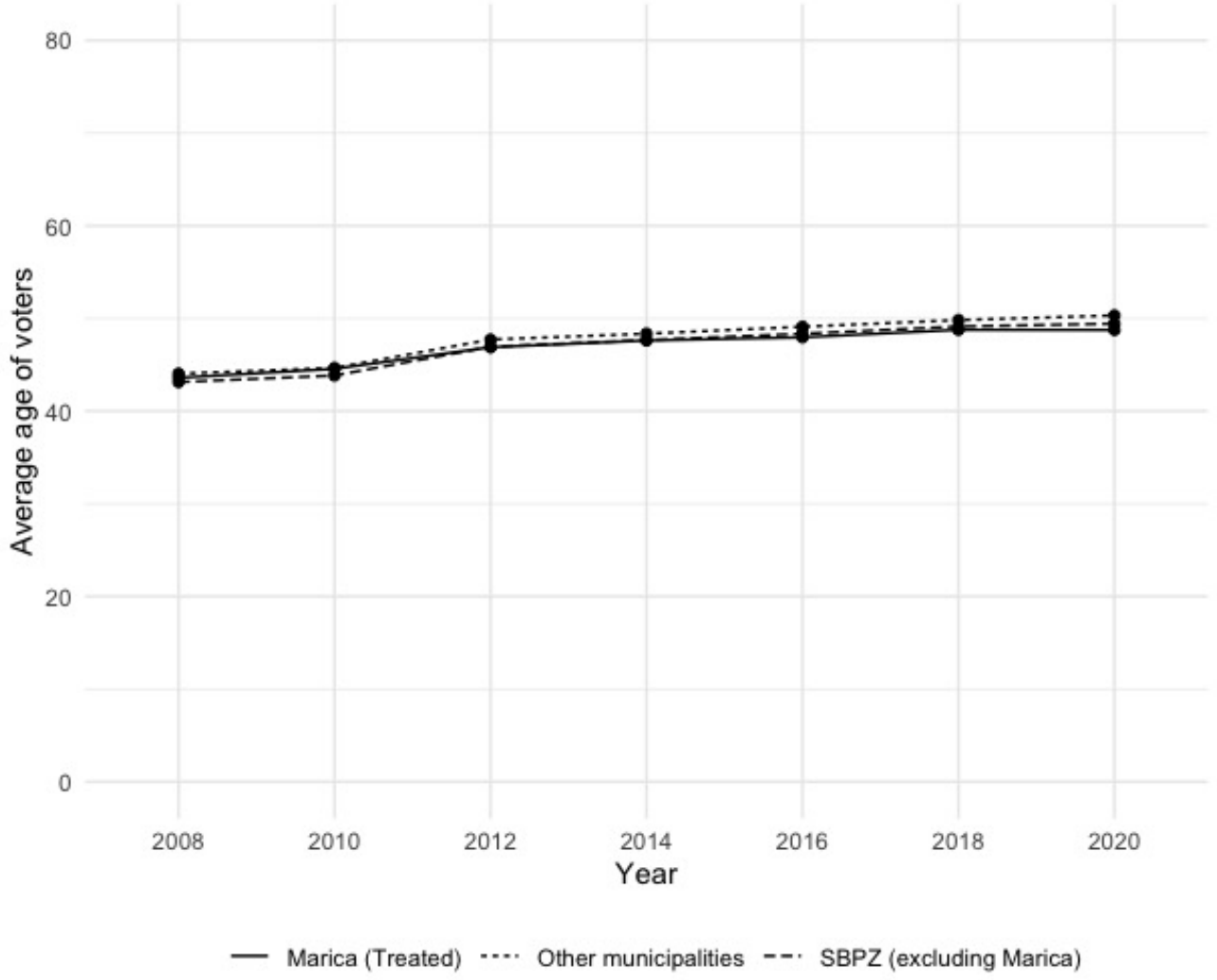
Figure 2: Share of valid votes for the PT in Maricá versus municipalities in the control groups – Local (2000-2020) and general (1998-2018) elections



Note: The unit of analysis used to compute the mean is the polling station. The solid line (Treated) refers to voter turnout in the polling stations in Maricá. The other two lines correspond to polling stations in the other municipalities in the Rio de Janeiro state (N = 91) and the municipalities in the SBPZ excluding Maricá (N = 17), respectively.

D Average age of citizens registered to vote in Brazilian elections

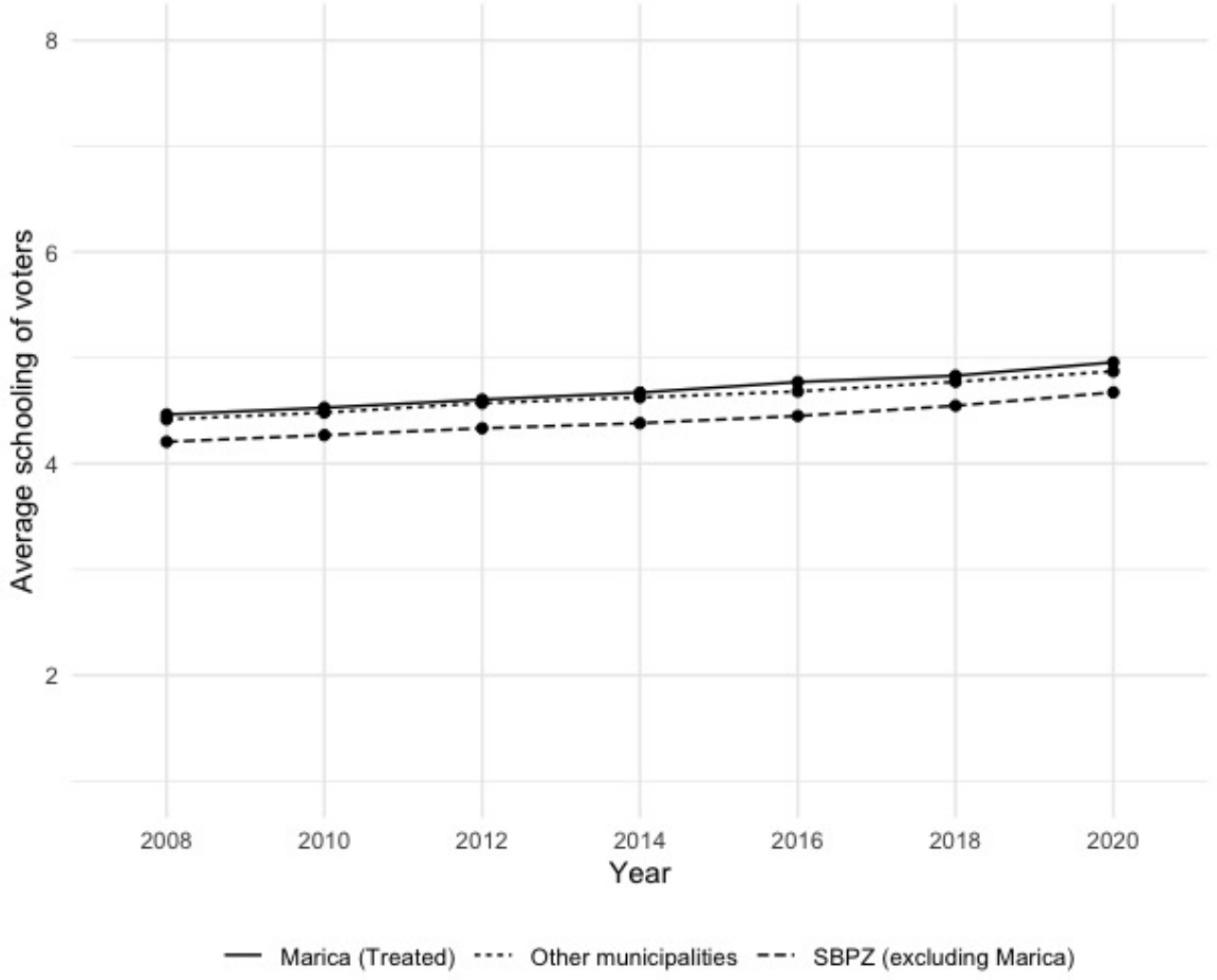
Figure 3: Average age of voters (2008-2020)



Note: The unit of analysis used to compute the mean is the polling station. The solid line (Treated) refers to the average age of voters in the polling stations in Maricá. The other two lines correspond to polling stations in the other municipalities in the Rio de Janeiro state (N = 91) and the municipalities in the SBPZ excluding Maricá (N = 17), respectively.

E Average schooling of citizens registered to vote in Brazilian elections

Figure 4: Average schooling of voters (2008-2020)



Note: The unit of analysis used to compute the mean is the polling station. This indicator varies from 1 (no education at all) to 8 (postgraduate level of education). The solid line (Treated) refers to the average schooling of voters in the polling stations in Maricá. The other two lines correspond to polling stations in the other municipalities in the Rio de Janeiro state (N = 91) and the municipalities in the SBPZ excluding Maricá (N = 17), respectively.

F Estimates of the effect of the RBC on invalid votes - Restricted sample

Table 3: The effect of RBC on the share of invalid votes (blank + null) - Restricted Sample

	Local Elections			General Elections		
	(1)	(2)	(3)	(4)	(5)	(6)
Treat	-1.879***	3.005***	4.046***	0.00486	0.618**	2.691***
	(0.110)	(0.622)	(0.949)	(0.200)	(0.304)	(0.468)
Time	6.903***	7.136***	6.270***	1.688***	1.716***	2.646***
	(0.0351)	(0.738)	(0.678)	(0.0285)	(0.226)	(0.157)
DiD (Treat X Time)	-6.475***	-6.709***	-5.556***	-4.039***	-4.067***	-3.788***
	(0.166)	(0.738)	(0.587)	(0.206)	(0.226)	(0.215)
R^2	0.321	0.312	0.132	0.032	0.031	0.360
Obs.	102112	102112	71275	97782	97782	53364
N.Clusters		18	18		18	18
Block bootstrapping SE	✓			✓		
Clustered SE		✓	✓		✓	✓
Municipal-level FE		✓	✓		✓	✓
PS-level Controls			✓			✓

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Note: The unit of analysis is the polling station (PS). The dependent variable is the share of invalid votes (blank + null) in local (models 1-3) and general (models 4-6) elections. The following variables, measured at the polling station level, are included in the models: the average level of voters' schooling; the average age of voters; and the incidence of women registered to vote.

G Estimates of the effect of the RBC on blank votes

Table 4: The effect of RBC on the share of blank votes - Full sample

	Local Elections			General Elections		
	(1)	(2)	(3)	(4)	(5)	(6)
Treat	-0.763***	0.964***	1.724***	-0.176***	0.0531	1.579***
	(0.0569)	(0.103)	(0.263)	(0.0592)	(0.0569)	(0.101)
Time	1.667***	1.712***	1.445***	0.794***	0.793***	0.824***
	(0.0115)	(0.165)	(0.201)	(0.00863)	(0.0573)	(0.0390)
DiD (Treat X Time)	-1.899***	-1.944***	-1.653***	-0.965***	-0.963***	-1.137***
	(0.0804)	(0.165)	(0.144)	(0.0752)	(0.0573)	(0.0531)
R^2	0.118			0.046		
Obs.	185801	185801	129181	177700	177700	97368
N.Clusters		92	92		92	92
Block bootstrapping SE	✓			✓		
Clustered SE		✓	✓		✓	✓
Municipal-level FE		✓	✓		✓	✓
PS-level Controls			✓			✓

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Note: The unit of analysis is the polling station (PS). The dependent variable is the share of blank votes in local (models 1-3) and general (models 4-6) elections. The following variables, measured at the polling station level, are included in the models: the average level of voters' schooling; the average age of voters; and the incidence of women registered to vote.

Table 5: The effect of RBC on the share of blank votes - Restricted sample

	Local Elections			General Elections		
	(1)	(2)	(3)	(4)	(5)	(6)
Treat	-0.910***	0.918***	1.506***	-0.166***	-0.170	0.925***
	(0.0498)	(0.242)	(0.387)	(0.0616)	(0.125)	(0.172)
Time	1.814***	1.880***	1.670***	0.814***	0.810***	0.838***
	(0.0147)	(0.186)	(0.203)	(0.0132)	(0.0736)	(0.0509)
DiD (Treat X Time)	-2.046***	-2.112***	-1.733***	-0.984***	-0.981***	-1.103***
	(0.0730)	(0.186)	(0.251)	(0.0846)	(0.0736)	(0.0697)
R^2	0.142	0.134	0.052	0.046	0.045	0.369
Obs.	102112	102112	71275	97782	97782	53364
N.Clusters		18	18		18	18
Block bootstrapping SE	✓			✓		
Clustered SE		✓	✓		✓	✓
Municipal-level FE		✓	✓		✓	✓
PS-level Controls			✓			✓

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Note: The unit of analysis is the polling station (PS). The dependent variable is the share of blank votes in local (models 1-3) and general (models 4-6) elections. The following variables, measured at the polling station level, are included in the models: the average level of voters' schooling; the average age of voters; and the incidence of women registered to vote.

H Estimates of the effect of the RBC on null votes

Table 6: The effect of RBC on the share of null votes - Full sample

	Local Elections			General Elections		
	(1)	(2)	(3)	(4)	(5)	(6)
Treat	-0.864***	1.630***	2.523***	0.0574	-0.167	1.930***
	(0.0708)	(0.191)	(0.444)	(0.205)	(0.164)	(0.190)
Time	4.474***	4.583***	4.087***	0.573***	0.598***	1.646***
	(0.0221)	(0.583)	(0.531)	(0.0188)	(0.194)	(0.125)
DiD (Treat X Time)	-3.815***	-3.924***	-3.482***	-2.753***	-2.779***	-2.673***
	(0.145)	(0.583)	(0.392)	(0.230)	(0.194)	(0.101)
R^2	0.281	0.278	0.181	0.007	0.006	0.159
Obs.	185898	185898	129278	177700	177700	97368
N.Clusters		92	92		92	92
Block bootstrapping SE	✓			✓		
Clustered SE		✓	✓		✓	✓
Municipal-level FE		✓	✓		✓	✓
PS-level Controls			✓			✓

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Note: The unit of analysis is the polling station (PS). The dependent variable is the share of null votes in local (models 1-3) and general (models 4-6) elections. The following variables, measured at the polling station level, are included in the models: the average level of voters' schooling; the average age of voters; and the incidence of women registered to vote.

Table 7: The effect of RBC on the share of null votes - Restricted sample

	Local Elections			General Elections		
	(1)	(2)	(3)	(4)	(5)	(6)
Treat	-0.969***	2.090***	2.535***	0.171	0.788***	1.759***
	(0.0833)	(0.401)	(0.580)	(0.147)	(0.208)	(0.309)
Time	5.085***	5.253***	4.598***	0.874***	0.906***	1.808***
	(0.0250)	(0.589)	(0.510)	(0.0183)	(0.158)	(0.110)
DiD (Treat X Time)	-4.426***	-4.594***	-3.821***	-3.054***	-3.086***	-2.686***
	(0.134)	(0.589)	(0.425)	(0.159)	(0.158)	(0.151)
R^2	0.351	0.343	0.202	0.015	0.015	0.253
Obs.	102134	102134	71297	97782	97782	53364
N.Clusters		18	18		18	18
Block bootstrapping SE	✓			✓		
Clustered SE		✓	✓		✓	✓
Municipal-level FE		✓	✓		✓	✓
PS-level Controls			✓			✓

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Note: The unit of analysis is the polling station (PS). The dependent variable is the share of null votes in local (models 1-3) and general (models 4-6) elections. The following variables, measured at the polling station level, are included in the models: the average level of voters' schooling; the average age of voters; and the incidence of women registered to vote.