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Ensaaios em Economia Política Aplicada

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**“Somewhere, something incredible
is waiting to be known”**

Carl Sagan

Resumo

Esta tese de doutorado é composta por três ensaios independentes, separados em capítulos. No primeiro capítulo, examino os efeitos da proibição de contribuições de empresas para campanhas eleitorais. Usando um desenho de diferença-em-diferenças no contexto da reforma de 2015 no Brasil que proibiu doações de empresas, encontro que a proibição de doações empresariais levou os candidatos a substituir as fontes de financiamento de campanhas. Em particular, os candidatos passaram a utilizar como fonte contribuições próprias. A proibição também afetou a entrada de candidatos no processo eleitoral, aumentando o número de candidatos e atraindo candidatos mais ricos. Em termos da eleição de candidatos, a proibição levou candidatos mais ricos a se tornarem prefeitos com maior frequência. Outro achado interessante é que, para municípios sem candidato incumbente, o efeito de favorecer candidatos mais ricos é maior. Esses resultados sugerem que, embora a reforma de 2015 visasse reduzir o papel do dinheiro nas eleições, questões como a remoção de limites específicos para as auto contribuições, acabaram por manter o *status quo* de poucas fontes de dinheiro preparando o terreno para candidaturas de sucesso.

No segundo capítulo, respondo à seguinte questão: o governo federal prioriza seus aliados locais na provisão de recursos públicos? Usando um desenho de regressão em descontinuidade em eleições acirradas e dados do Projeto Mais Médicos para o Brasil (PMM) – um programa do Ministério da Saúde do Brasil que visa a prestação de serviços básicos de saúde e o aumento da densidade médica local transferindo de profissionais para os municípios brasileiros – este trabalho avalia o impacto do alinhamento político entre os governos federal e local sobre o número de médicos transferidos para os municípios, bem como a probabilidade de participação dos municípios. Os resultados sugerem que o governo federal não prioriza os municípios alinhados nem penaliza os governados por partidos de oposição. Mostro que esse efeito nulo permanece em municípios com diferentes níveis de densidade médica e diferentes tamanhos de população. Uma explicação para esses resultados é que devido à natureza de “marca” do PMM e à ampla cobertura do programa pela mídia, o crédito

eleitoral da transferência deveria ir para o governo federal e, portanto, o partido que chefiava os governos locais não seria um fator crítico para a distribuição de médicos entre os municípios.

O terceiro capítulo se propõe a analisar a seguinte questão: apoiadores a partidos vencedores em eleições locais estão sobrerrepresentados dentre beneficiários do Programa Minha Casa Minha Vida? Desde 2009, levantaram-se suspeitas sobre falta de transparência na seleção dos beneficiários pelas prefeituras e favorecimento de grupos políticos na fila de espera por habitações. Usando um modelo de Regressão em Descontinuidade (RD) na margem de vitória de eleições majoritárias municipais, este artigo investiga se membros de partidos e doadores de campanha são selecionados com mais frequência pelo programa quando apoiam candidatos vencedores. Nossos resultados sugerem não haver esse tipo de favorecimento político. Dentre as possíveis razões para encontrar tais resultados nulos, estão a possibilidade de prefeitos favorecerem aliados indiretos, ou a dificuldade de tomar de volta casas de beneficiários uma vez concedidas, o que reduz substancialmente o poder de barganha do prefeito. Além disso, é possível que a realização de seleção de candidatos mais transparente seja mais frequente exatamente em municípios com alta competição eleitoral e, portanto, com eleições mais acirradas. Neste caso, o uso de RD na margem de vitória não poderia elicitar o efeito de favorecimento político.

Palavras-chave: Reforma Eleitoral, Financiamento de Campanha, Favorecimento Político

Abstract

This doctoral dissertation consists of three independent essays, divided by chapters. In the first chapter, I examine the effects of banning corporate contributions to electoral campaigns. Using a difference-in-differences design in the suitable setting of the 2015 reform in Brazil that prohibited donations from companies, I find that banning corporate contributions led candidates to substitute the funding sources to finance campaigns. In particular, candidates relied on self-contribution. The ban also affected the pool of candidates by increasing the number of candidates running for office and attracting wealthier candidates. In terms of political selection for office, the ban led wealthier candidates to become mayors. Another interesting finding is that for municipalities with open seats the effect of favoring wealthier candidates is larger. These results suggest that even though the 2015 reform was aimed at reducing the role of money in elections, leakages such as the removal of specific limits to self-contribution can maintain the *status quo* of a few sources of “big money” setting the stage for successful candidacies.

In the second chapter, I answer the following question: does the federal government prioritize its local allies on the provision of public resources? Using a regression discontinuity design in close elections and data of the *Projeto Mais Médicos para o Brasil* (PMM) – a program from the Brazilian Ministry of Health that targets the provision of basic health services and the increase of local medical density by transferring professionals to the Brazilian municipalities – this chapter assesses the impact of the political alignment between federal and local governments on the number of physicians transferred to municipalities and the municipalities’ probability of participation. The results suggest that the federal government does not prioritize same-party municipalities nor penalizes the ones governed by the opposition parties. I show that this null effect remains across municipalities with different levels of medical density and different population sizes. One explanation for these results is that with the “branded” nature of PMM and the wide media coverage of the program, the electoral credit for PMM ended going to the federal government and, hence, the party heading local

governments would not be a critical factor for the distribution of doctors across municipalities.

In the third chapter, I provide answers to the following question: are supporters of winning coalitions in local elections over-represented among beneficiaries of *Minha Casa Minha Vida* Program? Since 2009, suspicions have arisen about the lack of transparency in the selection of beneficiaries by city halls and about a potential political favoring of groups in the waiting list for housing. Using a Regression Discontinuity (RD) model on the margin of victory in municipal mayoral elections, this chapter investigates whether party members and campaign donors are selected more often in the program when supporting winning candidates. The results suggest that there is no such political favoring. Among the reasons for finding such null results are the possibility of mayors favoring indirect allies, or the difficulty of taking back homes from beneficiaries once granted, which substantially reduces the mayor's bargaining power. In addition, it is possible that the transparent selection of candidates is more frequent exactly in municipalities with high electoral competition and, therefore, with narrowly defined elections. In this case, the use of RD on the margin of victory could not elicit the effect of political favoring.

Keywords: Electoral Reform, Campaign Financing, Political Favoring

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Introduction

The design and implementation of public policies can create concentrated benefits for a few well-defined groups, with the cost scattered in society in general. Whenever this happens, the incentives to influence and shape the design of such programs are much stronger for the beneficiaries than for the rest of society bearing the costs. In that sense, it is important to analyze public policies by bringing to the surface potential special interest groups that may arise, and extract rent via political connections. This dissertation consists of three separate essays in empirical political economics, and aims to provide new evidence about how special interests interact with the design and implementation of public policy. Each chapter analyzes a specific program/reform in the context of local politics in Brazil.

The first chapter examines the effects of banning corporate contributions to electoral campaigns. Using a difference-in-difference design in the suitable setting of the 2015 reform in Brazil that prohibited donations from companies, it shows that banning corporate contributions led candidates to substitute the funding sources to finance campaigns. In particular, candidates relied on self-contribution. The ban also affected the pool of candidates by increasing the number of candidates running for office and attracting wealthier candidates. In terms of political selection for office, the ban led wealthier candidates to become mayors. These results suggest that even though the 2015 reform was aimed at reducing the role of money in elections, leakages such as the removal of specific limits to self-contribution can maintain the *status quo* of a few sources of “big money” setting the stage for successful candidacies.

The second chapter answers the following question: does the federal government prioritize its local allies on the provision of public resources? Using a regression discontinuity design in close elections and data of the *Projeto Mais Médicos para o Brasil* (PMM) — a program from the Brazilian Ministry of Health that targets the provision of basic health services and the increase of local medical density by transferring professionals to the Brazilian municipalities — this chapter assesses the impact of the political alignment between federal and local

governments on the number of physicians transferred to municipalities and the municipalities' probability of participation. The results suggest that the Federal government does not prioritize same-party municipalities nor penalizes the ones governed by the opposition parties. It also shows that this null effect remains across municipalities with different levels of medical density and different population sizes. One explanation for these results is that with the "branded" nature of PMM and the wide media coverage of the program, the electoral credit for PMM ended going to the federal government and, hence, the party heading local governments would not be a critical factor for the distribution of doctors across municipalities.

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1 Favoring the Rich? (Un)intended Effects of Corporate Campaign Donation Ban in Brazil

1.1 Introduction

The role of “big money” and the influence of corporations in elections is one of the most common concerns when it comes to reforming political systems. In the United States, the landmark decision from 2010 that allowed both corporations and unions to spend unlimited funds on elections^{1.1.1} have brought with it calls for reform. For example, Senator Tom Harkin^{1.1.2} declared: “By limiting the influence of big money in politics, elections can be more about the voters and their voices, not big money donors and their deep pockets. We need to have a campaign finance structure that limits the influence of the special interests and restores confidence in our democracy”^{1.1.3}.

In Brazil, sharing this same sentiment, Marcus Vinícius Furtado, the president of the Brazilian Bar Association (OAB), said: “The improper relationship between companies, candidates, and parties is at the root of electoral and administrative corruption. The vast majority of the population wants a new way of doing politics, with a reduction in campaign spending. People do not want millionaire, ‘Hollywoodian’ campaigns”. In fact, 74% of Brazilians said they were in favor of banning corporate contributions to electoral campaigns^{1.1.4}, according to a poll from 2015. On September 17th of the same year, the Supreme Court ruled as unconstitutional contributions from companies to finance electoral campaigns.

In this paper, I answer the following question: how the prohibition of corporate contributions to electoral campaigns affects electoral outcomes? Does it change who enters in the electoral process as candidate and who gets selected

^{1.1.1} *Citizens United vs. Federal Elections Commission* (No. 08-205, 2010).

^{1.1.2} Democrat Senator from Iowa State.

^{1.1.3} Source: “More Money Can Beat Big Money”, New York Times. November 16th, 2011.

^{1.1.4} Source: “Ibope e Datafolha: brasileiros contra empresas nas eleições”, OAB. and “Senado aprova fim do financiamento de empresas a campanhas eleitorais”, Folha de São Paulo. September 2nd, 2015 (both in Portuguese).

for office? I analyze these questions in the context of a recent campaign finance reform in Brazil, that occurred amid a large graft scandal, which led the Supreme Court to ban all companies' contributions to candidates and parties. The reform affected all Brazilian municipalities simultaneously, but as prior to the reform there was a large heterogeneity in companies' participation in funding local campaigns, I am able to leverage these different pre-reform conditions and compare cities that were more exposed to companies' contributions with less exposed cities. In fact, the group of highly exposed municipalities had in 2012 an average of 55% of the total funds to finance campaigns coming from companies' contributions, while less exposed had an average of 5%.

My analysis covers three parts of the electoral process, showing how candidates finance their campaigns in the absence of this predominant source of donations (55% of all contributions in 2012 elections), how it affects who participate in the electoral process as candidate and who gets selected for office. Using a difference-in-differences model, I find in my preferred specification that the reform affected municipalities that were more reliant on corporate resources by increasing the number of candidates running for office, even though that did not reflect on the competitiveness of the elections. My estimates suggest that these highly exposed cities had an increase of 5% in the number of candidates. The reform also affected the demographics of the candidates, by increasing the self-reported wealth of candidates in 9%, on average. Along with that, on average, the richest individual running for office is also self reported richer, with an increase of 11%. For political selection, I find that the elected candidates are richer, as well. They are 13% percent wealthier, which suggests that candidates' assets were a determinant factor in the 2016 elections. In fact, self financing had a whopping increase of 195% as a result of the reform in highly exposed cities.

These effects of attracting and electing wealthier candidates are even larger for municipalities with open seat elections. From a heterogeneity analysis for this set of cities, I find that banning corporate contributions increased the city-average self-reported wealth of candidates by 14%, with the richest individual running for office 18% wealthier and the elected candidate 15% wealthier, on average.

I interpret these findings as evidence that in the absence of contributions from companies, candidates relied on their own wealth to finance their campaigns and that in spite of the fact that one of the objectives of the reform was to reduce the role of money in elections, money was still playing an important part in selecting candidates for office. In other words, as expressed by Supreme Court Justice Gilmar Mendes, who heads Brazil's top electoral authority, "ending companies' contributions has, in fact, favored rich candidates who have their own resources"^{1.1.5}. This "favoring the rich" effect eventually became known as "Dória Effect"^{1.1.6}, following the case of João Dória, a rich businessman who was elected mayor in 2016 elections in São Paulo, and contributed with R\$ 4.4 million to his own campaign, representing 36% of his campaign spending^{1.1.7}.

Related Literature

This study relates to several strands of literature. The first is a developing literature on campaign finance policy. Most of the empirical papers analyze contributions limits in the US context and explore the variation across states and time for identification. For example, [Barber \(2016\)](#) shows that limiting contributions from political action committees (PACs) leads to an increase in polarization, as individual contributors prefer to support ideologically extreme candidates, while access-seeking PACs tend to support more moderate candidates. [Stratmann, J. e Aparicio-Castillo \(2006\)](#) also explore variation across states and time and find that contribution limits lead to closer elections for future incumbents, as well as to an increase in the number of candidates in the race.

A second strand of the literature that I contribute seeks to identify the effects of banning corporate contributions on electoral outcomes. Again, most of these empirical studies rely on the US setting, and explore the variation across

^{1.1.5} Source: "Millionaires, evangelicals benefit from Brazil campaign funds ban", Reuters. September 29th, 2016 and "O equívoco da proibição de doações de empresas na eleição", *Jornal O Globo*. October 8th, 2016 (in Portuguese).

^{1.1.6} Source: "Quais distorções emergem das contas parciais da eleição", *Nexo*. September 18th, 2018 and "TSE publica resolução que autoriza autofinanciamento de campanha para 2018", *Consultor Jurídico*. February 13th, 2018 (both in Portuguese).

^{1.1.7} A similar situation occurred in the United States during the 2020 elections primaries, with Michael Bloomberg spending over \$ 500 million dollars of his own money on his campaign.

states and years in congressional elections. Hall (2016) finds evidence that bans on companies' contributions favor the Democratic party, as a larger share of companies' contributions goes to Republican candidates. La Raja e Schaffner (2014) analyze the elimination of corporate contribution bans in the context of a landmark decision (*Citizens United vs. Federal Elections Commission*), and find limited effects on electoral outcomes.

This paper also contributes to a recent literature that analyzes the effects of the 2015 Electoral Reform in Brazil. Ricca (2019) explores the ban on corporate contributions to test the existence of political favoring via delayed payment in procurement contracts. The work of Avis et al. (2017) is the most similar to this study, as the authors investigate the effects of a different feature of the 2015 reform — the setting of municipal level spending caps — on electoral outcomes. They find that higher spending limits decrease competition and favor wealthier candidates.

This paper also speaks to the literature on the effects of campaign spending on electoral outcomes (for example, Levitt (1994), Gerber (1998), and Silveira e Mello (2011)). An important finding from this literature is that the elasticity of vote share with respect to campaign spending is larger for challengers than for incumbents, which became known as the “Jacobson Effect” (JACOBSON, 1978). This hypothesis has led many studies to suggest that campaign reforms that limit the available funding sources for campaign spending favor incumbents. However, my findings show that once controlling for having an incumbent running for re-election, the effect disappears.

Finally, this paper relates to the literature that analyzes the identity of politicians and how it shapes public policy implementation. For instance, Chattopadhyay e Duflo (2004) estimate the impact of women's leadership on policy decisions in India, and Besley, Montalvo e Reynal-Querol (2011) investigate whether having a more educated leader affects economic growth. In Brazil, Rocha, Fernandez Orellano e Bugarin (2018) analyze how gender, education level and political experience of elected candidates affect fiscal indicators in the context of Brazilian municipalities.

To the best of my knowledge, this paper represents the first attempt of analyzing the effects of corporate contribution bans on electoral outcomes in the context of local mayoral elections. Moreover, this study is one of the firsts to assess the impacts of such a ban in a developing country.

The rest of the paper is organized as follows. In Section 1.2, I provide a summary of the institutional context of both the Brazilian Political System and the 2015 Electoral Reform. In Section 1.3, I provide an overview of the data I use, how it was built and some summary statistics. The empirical strategy is explained in Section 1.4. Finally, in Sections 1.5 and 1.6, I show the main results and robustness analysis, and in Section 1.7 I conclude the paper.

1.2 Institutional Background

1.2.1 Municipal Elections and Political System in Brazil

Brazil is a federal republic with a presidential system, organized in three levels of government (federal, state, and municipal), with each of them including an executive and a legislative branch and an independent budget. The federation has one of the most decentralized systems for the provision of public goods and services (FERRAZ; FINAN, 2011). Local governments are responsible for the provision of key services, such as early childhood and primary education, basic health, sanitation and public transportation. Most of the tax revenues are raised at the federal and state levels, and to cope with this vertical imbalance, Brazil has high levels of intergovernmental transfers. For example, in 2014 approximately R\$ 140 billion^{1.2.1} were transferred from federal to municipal governments. At the city level, federal transfers amount to 85% of the municipalities' resources, on average. In contrast, local taxes^{1.2.2} represent only 6% of the available resources for the provision of public goods and services (BARBOSA; FERREIRA, 2019).

Brazilian territory is divided in 5,570 municipalities and every four years, local elections are held simultaneously in October, with contenders that are

^{1.2.1} Data from Brazilian Federal Treasury. Source: [Federal Treasury's Website](#) (in Portuguese).

^{1.2.2} Brazilian municipalities are responsible for urban property and service taxes.

elected taking office on January 1st of the coming year. The last local elections occurred in October 2016, when Brazilians chose their mayor and municipal councilors for office. For cities with less than 200,000 registered voters, mayors are elected based on a single-ballot plurality rule. For municipalities with 200,000 or more registered voters, a dual-ballot system is adopted: if no candidate receives more than 50% of the votes, a second round runoff is held. Since 1998 elected mayors face a two-term limit. If they want to run for an additional term, they must leave office for at least one term. Figure 1.2.1 provides a timeline of the municipal elections and of the 2015 electoral reform.

Figure 1.2.1 – Timeline of municipal elections and the 2015 electoral reform

The Brazilian political system is structured in a multiparty system, and has currently 35 registered parties^{1.2.3}. The constitution states that political parties must have a minimum of members, corresponding to 0.5% of the votes cast in the previous national elections for Congress, along with affiliates distributed across at least 3 of the 27 Brazilian states. Any registered voter can join a political party as a member and must do so to run for any public office. Multiple affiliations are not allowed^{1.2.4}. Due to the large number of political parties in Brazil, it is common for parties to form coalitions when running for office, as they increase the available airtime for TV and radio.

^{1.2.3} Source: <http://www.tse.jus.br/partidos/partidos-politicos/registrados-no-tse> (in Portuguese).

^{1.2.4} See Albarracín (2016) for a detailed picture of the Brazilian political party system.

1.2.2 Campaign Finance in Brazil and the 2015 Electoral Reform

Electoral campaigns in Brazil are financed by both public and private funds^{1.2.5}. Every year, political parties receive public resources from the Federal Government (*Fundo Partidário*) that are distributed based on the number of seats in National Congress obtained by each party in the previous elections. Up to 80% of these public funds can be used to finance elections^{1.2.6}. Besides resources from *Fundo Partidário*, candidates can receive private contributions as soon as they are officially registered and as late as the election date. Until 2012 municipal elections, individuals, and companies were allowed to contribute to political parties or candidates. Companies could donate up to 2% of their total sales, individuals were allowed to contribute with up to 10% of their annual income, except when contributing to their own campaign, in which case they could contribute with up to 50% of their total wealth.

Since March of 2014, a large anti-corruption investigation known as *Lava Jato* revealed a large kickback scheme that implicated key members of Brazilian political parties. The graft scheme involved the funding of these parties and electoral campaigns with resources obtained from overpriced procurement contracts. Members of some of the largest construction companies in Brazil were convicted for corruption charges. In fact, these same companies appear as the main contributors to 2012 municipal elections. Companies such as Andrade Gutierrez, Odebrecht, Camargo Corrêa, OAS, UTC, and Queiroz Galvão are all listed both as implicated in *Lava Jato* investigation^{1.2.7} and as largest contributors. Table A.5 in Appendix lists the 30 largest corporate contributors to the 2012 elections.

^{1.2.5} The matter of campaign financing and its accountability is regulated by the Brazilian Electoral Law (9,504/97), which defines a comprehensive system for the accounting of campaign revenues and expenditures. Since its enactment in 1997, there have been several improvements in the disclosure of information.

^{1.2.6} These resources can be used in the maintenance of political party headquarters, payment of personnel, political propaganda, enlistment of members, electoral campaigns and the maintenance of a research institute or foundation for political education. At least 20% must be spent with this last item. Table A.1 from Appendix provides information about the distribution of public funds from *Fundo Partidário* across political parties in 2016.

^{1.2.7} Source: “7 das 10 maiores empreiteiras tiveram executivos investigados na Lava Jato”, G1. June 20th, 2015 (in Portuguese).

Following *Lava Jato* graft scandal and an anti-corruption and “anti-special interest” environment that took place in Brazil, the Brazilian Supreme Court decided on September 17th of 2015 to declare unconstitutional the rules that allowed corporations to finance electoral campaigns^{1.2.8}. That decision was taken by the court a few days after the National Congress voted and approved an electoral reform that allowed for corporate donations. On the same month of September, President Dilma Rousseff enacted the 2015 reform (13,165/2015)^{1.2.9}, with a veto to corporate contributions.

Besides the prohibition to corporate contributions, the reform also established city-level spending limits, which were set based on the following rule: candidates can spend the maximum of either R\$ 100,000.00 or 70% of the highest amount spent by a candidate in the same municipality in the 2012 election^{1.2.10}. Along with the definition of spending limits, TSE’s resolution changed the limits to self-contribution. After the reform, candidates can finance their own campaign up to the spending cap if they have the resources to do so. This modification gave rich candidates a clear advantage in the electoral process, which became known as “Dória Effect”. Finally, the 2015 reform reduced campaign duration. Before the reform, candidates were allowed to develop campaign activities on the last three months before the election day. After it, the duration the campaign was reduced to one and a half months before the election. Table 1.2.1 summarizes the main changes in campaign financing regulations due to the 2015 reform.

^{1.2.8} Direct Action of Unconstitutionality n° 4,650.

^{1.2.9} Act n° 13,165/2015 amended provisions of the Act n° 9,504/97 (Elections Law), Act n° 9,096/95 (Law of Political Parties) and the Act n° 4,737/65 (Electoral Code).

^{1.2.10} The rule for spending caps was set via a resolution from TSE (23,459/2015). In section 1.6.2 I provide robustness analysis to this feature of the reform and show that all results remain the same.

Table 1.2.1 – The 2015 Electoral Reform

	Before	After
Campaign Duration	90 days	45 days
Campaign Spending limits - Mayor	No limits	Up to 70% of the most expensive campaign in 2012 elections (for each city). The limit cannot be smaller than R\$ 100,000 (2012 prices)
Contribution - legal person	Firms can donate up to 2% of their total sales	Unlawful
Contribution - natural person	Individuals can donate up to 10% of their annual income	Unchanged
Contribution - candidates	Candidates can donate up to 50% of their wealth	No limit, as long as the spending cap is not violated.

Notes: This table provides a summary of the changes promoted by the 2015 reform (13,165/2015).

1.3 Data and Descriptive Analysis

In this section, I describe the assembled data sets and provide descriptive statistics of the data. The main variables used in the paper come from Brazilian electoral and campaign finance data, each of which I describe separately. In addition, I provide information on complementary data that was used.

1.3.1 Electoral Data

Information on elections is obtained from the Brazilian Superior Electoral Court (TSE). TSE makes available data at the candidate level comprising their respective parties and electoral coalitions, the number of votes that each candidate received, and pre-election characteristics of all candidates like age, gender, education, self-reported wealth and occupation. The data assembled goes from 2004 to 2016 and with it I construct at the municipal level a set of electoral outcomes, such as the number of candidates running for office, characteristics of the candidate pool, open seats elections, re-election rates and characteristics of the

elected candidates.

Table 1.3.1 presents basic descriptive statistics at city-year level for the electoral years used in final sample. On average, elections from 2012 and 2016 attract 3 candidates. In practice, only 2 candidates compete for office, as measured by the number of effective candidates^{1.3.1}. 42% of the cities have an incumbent candidate running for office. Only 13% of the candidates are female, and half of the candidates hold a college degree. Candidates declare an average wealth of R\$ 1.1 million, and the richest candidate in the municipality declares to hold assets of about R\$ 2.4 million. In terms of selection for office, 23% of the municipalities had a re-elected candidate, and 27% a same-party re-election. The share of female elected candidates is even lower than the share of female candidates, rounding 12%. The share of mayors that hold a college degree is 51%, a number slightly higher than the share of candidates with a college degree. Elected candidates' self-reported wealth is 28% higher than that of the average candidate.

^{1.3.1} The number of effective candidates is computed as the inverse of the sum of squared vote shares of each candidate running for office within an electoral race (Inverse Herfindahl–Hirschman Index). This definition follows [Avis et al. \(2017\)](#) and measures the competitiveness of elections, as it weights the number of candidates by their success in obtaining votes. If all candidates have the same number of votes, the number of effective candidates equals the actual number of candidates. If one candidate receives all votes, then this measure equals 1, regardless of the number of actual candidates.

Table 1.3.1 – Descriptives of Electoral Data

	Mean	Std. Dev.	Min.	Median	Max.	Obs.
Panel A: Entry of Candidates						
- Number of Candidates	2.90	1.27	1.00	3.00	16.00	11,026
- Number of Effective Candidates	2.15	0.55	1.00	2.00	6.70	11,026
- City has an Incumbent Candidate (%)	42.52	49.44	0.00	0.00	100.00	11,026
- Female Candidates (%)	13.11	21.79	0.00	0.00	100.00	11,026
- Candidates with College Degree (%)	49.30	34.30	0.00	50.00	100.00	11,026
- Average Candidates' Assets	1,134.15	4,809.15	1.50	505.38	300,361.97	10,978
- Median Candidates' Assets	895.98	3,542.63	0.35	429.34	283,618.31	10,978
- Maximum Candidates' Assets	2,361.98	15,314.51	1.50	808.41	1,200,933.00	10,978
Panel B: Selection of Candidates						
- Mayor Re-elected (%)	23.47	42.38	0.00	0.00	100.00	11,026
- Party Re-elected (%)	27.44	44.62	0.00	0.00	100.00	11,026
- Elected Candidate is Female (%)	11.56	31.97	0.00	0.00	100.00	10,998
- Elected Cand. has College Degree (%)	50.72	50.00	0.00	100.00	100.00	11,026
- Elected Candidate's Assets	1,450.82	9,629.27	0.00	439.36	564,189.90	10,435

Notes: This table provides summary statistics of the electoral data for the years of 2012 and 2016. All variables are computed at the municipality-year level, with self reported wealth variables in thousands of 2016 price levels. Panel A presents statistics on entry of candidates and Panel B on selection of candidates for office.

1.3.2 Campaign Finance Data

The data on campaign financing is also made public by TSE. Since the 2004 municipal elections, candidates have to report the accounting of all resources that were raised to finance campaigns and how those resources were spent. From 2004 to 2016 there were many improvements on the transparency and on the level of detail of the data TSE makes available, and because of that I am only able to track all contributions from companies for a given candidate for the 2012 and 2016 elections. The contributions data for these two waves of municipal elections allows me to compute for each candidate in each election, the campaign contributions that come directly from corporations, individuals, candidates (self-donations), and public funds. Besides that, I am also able to calculate all donations from corporations that funded campaigns via federal and state-level party committees, which I will call *indirect corporate contributions* for

the remainder of the paper^{1.3.2}.

Descriptive statistics for the contributions data at the municipal level can be seen in Table 1.3.2. Panels A and B present information for the 2012 and 2016 elections, respectively. The first notable information from the comparison of 2012 and 2016 data is the downfall of almost 60% in the total resources, which is in line with the objectives of the 2015 reform but is also a consequence of the dramatic recession Brazil was going through in 2015 and 2016, with the GDP decreasing by 6.3% and 1.7% respectively. In 2012, corporations funded electoral campaigns with approximately 55% of total resources, when accounting for both direct and indirect corporate contributions^{1.3.3}. Individual contributions decreased by 26%, possibly as a result of the recession and self contributions stayed roughly the same, with a decrease of 2%. The increase in *Fundo Partidário* also had a sizable effect on campaign finances, with public resources increasing by 140%^{1.3.4}.

^{1.3.2} Federal and State level party committees receive resources for campaigning from public funds, companies, and individuals. Most of these resources are passed on to local committees or candidates that then spend those funds. Because of the fungible nature of the private contributions that go to federal and state committees, I am not able to track the exact private donors that contributed via these committees to a candidate in a specific city.

^{1.3.3} In 2012, 97% of the private donations to federal and state party committees came from companies, and unsurprisingly, from 2012 to 2016 there was a reduction of 98% on these donations with the ban to corporate contributions, going from almost R\$ 900 million to R\$ 15 million. For more details about the differences between direct and indirect corporate contributors, see Table A.3 from Appendix.

^{1.3.4} The 2015 reform more than doubled the available funds in *Fundo Partidário*. Details on the yearly amounts and the distribution across political parties can be found in [TSE Website](#) (in Portuguese).

Table 1.3.2 – Descriptive Statistics of the Campaign Finance Data (2016 prices)

	Mean	Std. Dev.	Min.	Median	Max.	Sum	Obs.
Panel A: 2012 Elections							
- Corporate donations	175,279.56	820,097.22	0.00	23,802.46	29,473,172.00	966,842,055.99	5,513
- Individual donations	159,032.26	247,951.97	0.00	88,187.38	4,509,638.00	877,221,949.33	5,513
- Self donations	97,743.70	300,130.59	0.00	38,398.39	8,597,415.00	539,154,267.91	5,513
- Indirect donations	161,905.53	2,029,790.26	0.00	6,241.36	117,130,784.00	893,070,896.89	5,513
- Public funds	18,912.54	160,501.10	0.00	0.00	6,897,301.00	104,321,554.36	5,513
- Other donations	185.02	2,871.63	0.00	0.00	132,568.91	1,020,581.43	5,513
Total donations	613,058.61	2,964,775.54	0.00	213,614.81	149,444,896.00	3,381,631,304.52	5,513
Panel B: 2016 Elections							
- Corporate donations	0.00	0.00	0.00	0.00	0.00	0.00	5,513
- Individual donations	116,534.92	354,997.51	0.00	51,406.16	14,623,353.00	642,806,606.83	5,513
- Self donations	96,270.93	338,369.49	0.00	42,685.68	17,401,920.00	531,030,439.84	5,513
- Indirect donations	2,722.75	62,760.90	0.00	0.00	4,450,509.50	15,018,715.19	5,513
- Public funds	45,411.10	366,998.37	0.00	4,000.00	13,968,795.00	250,487,635.47	5,513
- Other donations	460.47	21,040.42	0.00	0.00	1,526,345.50	2,539,977.19	5,513
Total donations	261,400.18	890,112.58	0.00	120,569.24	33,802,892.00	1,441,883,374.52	5,513
Potential expenditures	1,155,813.77	9,262,217.36	108,039.06	324,117.19	500,172,352.00	6,375,468,775.34	5,513

Notes: This table provides summary statistics of the campaign contributions data. All variables are computed at the municipality-year level and are reported in 2016 price levels. Panel A and Panel B show information about 2012 and 2016 elections, respectively. "Indirect donations" are all contributions from private contributors (individuals and companies) to state and national-level party committees that are passed on to local candidates (see section 1.3.2 for details). In 2012, 97% of these private indirect contributions came from companies. "Public funds" are all public resources from *Fundo Partidário* that were used to finance elections. "Potential expenditures" are estimates for the city-level spending limits from 2015 reform, based on the number of candidates and the spending cap, according to the following formula: (Number of candidates $\times$ Spending cap).

1.3.3 Additional Data

In addition to data on elections and campaign financing, I also use information from 2010 population census aggregated at the municipality level, as well as data from the Ministry of Labor to compute information about contributing companies. Table A.2 from Appendix provides a summary of city-level demographics of the municipalities in the sample and Tables A.3, A.4, and A.5 from Appendix provide summary statistics on contributing firms and list top contributors.

1.4 Empirical Strategy

1.4.1 Treatment and Control Groups

This paper uses a difference-in-differences strategy to assess the impacts of banning corporate contributions to campaigns on electoral outcomes. More precisely, I compare before and after the 2015 reform, municipalities that were more exposed to corporate contributions in the 2012 elections (treatment group) with municipalities that were less exposed to contributions from companies in the same election (control group)^{1.4.1}. The exposure to corporate contributions in the municipality i is defined as follows:

$$\text{Exposure}_i = \frac{\text{Corporate Contributions}_i}{\text{Total Contributions}_i} \quad (1.4.1)$$

where Corporate Contributions comprises all contributions from any legal persons to a mayoral candidate running for office in 2012 and Total Contributions are all contributions raised by all mayoral candidates. In words, I define how reliant a city is on companies' contributions based on the share of campaign finance resources in 2012 elections that came from companies.

^{1.4.1} For the remainder of the paper, I will call "highly exposed" and "treated" municipalities interchangeably. Likewise, I will use "lowly exposed" and "control" municipalities interchangeably.

The reform affected all Brazilian municipalities simultaneously, but prior to the reform there was a large heterogeneity in companies' participation in funding local campaigns. To better group the cities, I separated them in terciles of exposure (high, medium, and low). Figure 1.4.1 presents a map with the distribution of these terciles across municipalities, assuring that the participation of companies financing elections was widespread across the country, and not just concentrated in a few cities or regions.

Figure 1.4.1 – Exposure Terciles Across Brazilian Municipalities

Notes: This figure presents a map with the distribution of cities across levels of exposure to companies' contributions to electoral campaigns in 2012 elections.

Additionally, Table 1.4.1 presents some descriptive statistics about the different levels of exposure to corporate contributions, with cities ranging from

0% of the donations coming from companies to 100%. On average, lowly exposed municipalities had in 2012 elections 5% of the total resources used for campaigning coming from companies. Highly exposed municipalities had an average of 55% of the resources coming from companies. By leveraging these levels of exposure in a difference-in-differences setting, I am able to more credibly estimate the effects of the ban on elections.

Table 1.4.1 – Descriptive Statistics of Exposure to Corporate Contributions in 2012 elections

	Mean	Std. Dev.	Min.	Median	Max.	Obs.
Low Level	4.87	4.18	0.00	4.35	13.02	1,839
Medium Level	22.96	6.28	13.03	22.43	34.70	1,838
High Level	55.07	15.72	34.70	51.43	100.00	1,836
Total	27.62	23.07	0.00	22.40	100.00	5,513

Notes: This table provides a summary of the distribution of cities across levels of exposure to companies' contributions to electoral campaigns in 2012 elections.

The final sample is a balanced panel of 5,513 municipalities comprising the 2012 and 2016 elections. After merging the contribution data with electoral information and adding demographic control variables, each of the groups has approximately 1,840 municipalities. Table 1.4.2 provides some mean characteristics of the municipalities with high and low exposure and the comparison of those means. Using data from the 2010 census, Panel A of Table 1.4.2 shows that municipalities with high exposure were bigger in term of population than low exposed municipalities. Municipalities with high exposure were also more urbanized, had a higher GDP per capita and lower levels of illiteracy. Panel B of Table 1.4.2 provides information about the spending cap imposed by 2015 reform. It shows that the group of more exposed municipalities had a higher percentage of cities with at least one candidate that spent in 2016 95% of spending cap or more. The more exposed group of municipalities also had a lower share of cities with a spending cap of R\$ 100,000.00, which is in line with the fact that less exposed municipalities are smaller than highly exposed ones. The proposed identification strategy does not formally require similarity of treatment and control groups at

the cross-sectional dimension, though.

Table 1.4.2 – Characteristics of Highly and Lowly Exposed Municipalities

	High Exposure		Low Exposure		Diff.
	Mean	Obs.	Mean	Obs.	High-Low
Panel A: Municipal Demographics					
- 2010 Total Population (In Thousands)	73.50	1,845	10.97	1,841	62.53***
- 2010 Share of Urban Households (%)	71.23	1,845	58.26	1,841	12.97***
- 2010 Human Development Index	0.67	1,845	0.65	1,841	0.03***
- 2010 GDP Per Capita	15.30	1,845	10.64	1,841	4.66***
- 2010 GINI Index	0.50	1,845	0.49	1,841	0.01***
- 2010 Illiteracy Rate (%)	15.23	1,845	19.33	1,841	-4.10***
Panel B: Campaign Finance Reform					
- % of cities constrained by Spending Cap	10.51	1,846	3.64	1,843	6.87***
- % of cities with Spending Cap of R\$ 100,000	49.95	1,846	81.12	1,843	-31.17***

Notes: This table provides selected summary statistics for cities with High and Low level of exposure to corporate contributions and tests the difference in means of city-level characteristics. Panel A comprises of municipal demographics variables and Panel B comprises of variables related to the 2015 reform. Variable “% of cities constrained by Spending Cap” indicates the share of municipalities in which at least one candidate spent in 2016 95% or more of the city-level spending cap. Variable “% of cities with Spending Cap of R\$ 100,000” indicates the share of municipalities where the spending cap equals R\$ 100,000.

1.4.2 Specification and Identification

I estimate the following equation for all municipalities in the sample over 2012 and 2016 elections:

$$y_{it} = \alpha + \sum_{k=1}^3 (\tau_k \mathbb{1}_{\{\text{Tercile}_i=k\}} \cdot \mathbb{1}_{\{t=2016\}} + \delta_k \mathbb{1}_{\{\text{Tercile}_i=k\}}) + \gamma_t + X'_{it} \beta + \varepsilon_{it} \quad (1.4.2)$$

where y_{it} represents the logarithm of an outcome of interest^{1.4.2} for city i in year t , Tercile_i is a variable that assumes values 1, 2 and 3 and indicates if city i is in the first, second or third tercile of exposure to corporate contributions

^{1.4.2} Using logarithms allows me to directly recover estimates for semi-elasticities.

in 2012 elections, based on formula 1.4.1. $\mathbb{1}_{\{t=2016\}}$ is an indicator variable of the election after the reform and X_{it} is a vector of city-year level demographics and additional controls. ε_{it} are standard errors clustered at the municipality (i.e., treatment level, following [Bertrand, Duflo e Mullainathan \(2004\)](#)) to account for the plausible correlation of the error term within municipalities^{1.4.3}.

The main identification assumption this model relies on is that in the absence of the 2015 reform, municipalities would have evolved the same way regardless of their exposure to corporate contributions in 2012 elections. Under this assumption, the main coefficient of interest (τ_3) captures any deviation from a parallel evolution in the outcome of interest between the most exposed municipalities and the less exposed ones due to the reform. A second important assumption is that the groups of municipalities remain, on average, the same over time. Although these assumptions are not directly testable, we can look at pre-trends for the electoral outcomes to examine if there were significant changes in those variables before the reform. We can also present how the composition of treatment groups changes by assigning municipalities to quantiles based on information from previous elections. These are ultimately empirical concerns, and while I am not able to address them with formal tests, I run several robustness analyses to provide support for it. In particular, in section 1.6.1 I analyze pre-trends by running “placebo reforms” for previous electoral years, in the spirit of the causality test of [Granger \(1969\)](#), and in section 1.6.4 I analyze how the composition of municipalities changes over time, when using previous electoral years to gauge the exposure to corporate contributions.

1.5 Results

In this section, I present the main findings of the paper. I estimate the effects of banning corporate contributions on three levels of electoral outcomes. First, I analyze its impact on campaign contributions to candidates. Second, I

^{1.4.3} I also run specifications with standard errors clustered at the state level. As expected, the standard errors are in general slightly larger. However, the significance of the main results is left unchanged. I present these results as a robustness analysis in section 1.6.5.

assess its effects on the characteristics of the pool of candidates. Then, I analyze the effects of the reform on the characteristics of the elected candidates. I also present some heterogeneity analysis. All estimates in this section are based on the empirical specification of equation 1.4.2.

1.5.1 Results on Campaign Contributions

The main results regarding the effects of banning companies' donations on campaign contributions are reported in Table 1.5.1. The regressions are at city-year level and include state fixed-effects and municipality-year level controls, such as total population, GDP per capita and an indicator variable for open seats^{1.5.1}. Each column represents a different outcome, as follows: (1) Total contributions (2) Indirect private contributions (3) Individual contributions (4) Self contributions (5) Public funds. In addition, all variables are in logarithm values, so that the coefficients can be interpreted as semi-elasticities.

As discussed in section 1.3.2, the total contributions decreased by approximately 60% from 2012 to 2016. Most of this reduction came from the removal of contributions from companies, which accounted for 55% of all donations in 2012. From the first column of Table 1.5.1, we can see that the municipalities that most relied on corporate contributions were the most affected by this reduction. In fact, those highly exposed cities had 23% less resources to finance campaigns, when compared to those cities with low exposure. The coefficients in the second column of Table 1.5.1 depict the critical participation of companies in contributing to national and state-level party committees. *Indirect private contributions* decreased by 99%^{1.5.2} as an effect of the ban, which is in line with the fact that 97% of all *Indirect private contributions* in 2012 came from companies.

Coefficients from Columns (3), (4), and (5) suggest that candidates and political parties in highly exposed municipalities sought to circumvent the re-

^{1.5.1} Table A.7 from Appendix provides estimates of equation 1.4.2 without covariates for contributions outcomes.

^{1.5.2} This number accounts for the exponentiation of the first coefficient of column (2). For example, $100 \cdot (e^{-4.810} - 1) = -99$, which represents the percentage decrease of *indirect private contributions* in highly exposed cities, when compared to lowly exposed ones. All percentage variations presented along the text account for this procedure.

duction of resources by raising more donations from individuals, self-donations and public funds, which increased by 58%, 195% and 704%, respectively, when compared to lowly exposed cities. In practice, individual contributions increased by 33% in treated municipalities, while it decreased by 33% in control municipalities. This gap is even larger for self-contributions, with a reduction of 16% in control cities and an increase of 89% in treated cities. Contributions from public funds that are managed by political parties grew in all groups, ranging from an increase of 67% in control municipalities to 260% in treated municipalities.

Table 1.5.1 – Effects of Corporate Contributions Ban on Campaign Contributions

	(1)	(2)	(3)	(4)	(5)
High $\times$ Ban	-0.266*** (0.023)	-4.810*** (0.165)	0.447*** (0.040)	1.075*** (0.080)	2.074*** (0.192)
Medium $\times$ Ban	-0.153*** (0.023)	-3.483*** (0.160)	-0.007 (0.038)	0.258*** (0.071)	1.007*** (0.190)
City Controls	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes
R ²	0.36	0.41	0.24	0.09	0.20
Cities	5,513	5,513	5,512	5,513	5,513
Observations	11,023	11,026	10,964	11,026	11,026

Notes: This table provides estimates from model 1.4.2 of the effect of banning corporate contributions on campaign donations outcomes. Each column represents a different dependent variable, as follows: (1) Total contributions (2) Indirect private contributions (3) Individual contributions (4) Self contributions (5) Public funds. All dependent variables are in log values. Standard errors are in parentheses and are clustered at the municipality level. City-year controls include Population, GDP per capita and an indicator variable for open seats. * Significant at 10%; ** significant at 5%; *** significant at 1%.

1.5.2 Results on Entry of Candidates

In Table 1.5.2, I present results for the effects of banning corporate contributions on the entry decisions of potential candidates. As before, regressions are at city-year level and include state fixed-effects and municipality-year level controls, such as total population, GDP per capita and an indicator variable

for open seats^{1.5.3}. Column (1) provides results on the Number of candidates, Column (2) on the Number of effective candidates, Column (3) on the Share of female candidates, Column (4) on the Share of candidates with a college degree, Column (5) on Average candidates' self-reported wealth, and Column (6) on Maximum candidates' self-reported wealth.

From Columns (1) and (2), we can see that banning corporate contributions affected the entry decisions of potential candidates. Highly exposed municipalities had 5% more candidates, but without an effect on the competitiveness of the elections. An interpretation for this result is that without contributions from companies, electoral campaigns got cheaper, so the higher perceived chance of successfully financing a campaign and winning the election encouraged candidates to enter. However, as I have shown in section 1.5.1, candidates self-contributed more, and political parties increased their donations with resources from the *Fundo Partidário*, and that may have counterbalanced the actual chance of obtaining votes for some of the candidates. This result differs from the results of [Avis et al. \(2017\)](#), where the authors find that another type of campaign finance reform, namely, spending caps, not only affects the number of candidates, but also the competitiveness of elections. They show that stricter spending caps increase both the number of candidates and the number of effective candidates.

Columns (3) and (4) provide estimates for the effect of the ban on the participation of female candidates and candidates with college degree, respectively. Even though the reform led to an increase in the number of candidates in highly exposed municipalities, that did not reflect in a change in these demographics. From Columns (5) and (6), we find that as a result of the ban, wealthier candidates entered more in the race in highly exposed municipalities, which is consistent with the increase in self-contributions. The average and maximum city-level self-reported wealth increased by 9% and 11%, respectively, as an effect of the contributions ban.

^{1.5.3} Table A.8 from Appendix provides estimates of equation 1.4.2 without covariates for entry outcomes.

Table 1.5.2 – Effects of Corporate Contributions Ban on Entry of Candidates

	(1)	(2)	(3)	(4)	(5)	(6)
High $\times$ Ban	0.051*** (0.013)	0.003 (0.011)	0.245 (0.842)	−0.288 (1.214)	0.079** (0.039)	0.099** (0.044)
Medium $\times$ Ban	−0.028** (0.013)	−0.040*** (0.010)	−0.460 (0.865)	−0.816 (1.242)	0.020 (0.038)	0.003 (0.042)
City Controls	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes
R ²	0.18	0.07	0.04	0.05	0.10	0.11
Cities	5,513	5,513	5,513	5,513	5,513	5,513
Observations	11,026	11,026	11,026	11,026	10,972	10,972

Notes: This table provides estimates from model 1.4.2 of the effect of banning corporate contributions on the entry of candidates in the electoral process. Each column represents a different dependent variable, as follows: (1) Number of candidates (2) Number of effective candidates (3) Share of female candidates (4) Share of candidates with a college degree (5) Average Candidates' self-reported wealth (6) Maximum Candidates' self-reported wealth. All dependent variables are in log values, with the exception of "Share of female candidates" and "Share of candidates with a college degree", which are in percentage. Standard errors are in parentheses and are clustered at the municipality level. City-year controls include Population, GDP per capita and an indicator variable for open seats. * Significant at 10%; ** significant at 5%; *** significant at 1%.

1.5.3 Results on Selection for Office

To analyze the effects of the reform on political selection, I provide estimates in Table 1.5.3 of regressions with the same characteristics of the ones presented in the previous tables^{1.5.4}, using the following dependent variables: Column (1) provides results on the chance of a female candidate getting elected, Column (2) on the chance of a candidate with a college degree getting elected, Column (3) on the probability of the mayor getting re-elected, Column (4) on the probability of the political party in power staying in power, and Column (5) on the elected candidate's self-reported wealth.

From Columns (1) and (2), we can see that the reform did not affect the demographics of elected candidates in terms of gender and education. Columns (3) and (4) show that banning corporate contributions had no effect on incumbency

^{1.5.4} Table A.9 from Appendix provides estimates of equation 1.4.2 without covariates for selection outcomes.

advantage, measured both in terms of the chance of an incumbent candidate or an incumbent political party getting re-elected. This finding suggests that reforms that limit campaign contributions not necessarily reduce the challengers' chances of winning the election, which is contrasting with results found in [Jacobson \(1978\)](#) and [Levitt \(1994\)](#). Table A.9 from Appendix shows the results without controlling for covariates. From Column (3) of that table, we can see an incumbency advantage. However, once I control for having an incumbent running for re-election, the effect disappears, as shown in Column (3) of Table 1.5.3. Finally, Column (5) from Table 1.5.3 shows that the reform led to the election of wealthier candidates, with an increase of 13% on the self-reported wealth of elected candidates.

Table 1.5.3 – Effects of Corporate Contributions Ban on Selection for Office

	(1)	(2)	(3)	(4)	(5)
High $\times$ Ban	0.009 (0.013)	0.023 (0.020)	0.000 (0.016)	0.006 (0.019)	0.119** (0.058)
Medium $\times$ Ban	0.002 (0.013)	0.021 (0.020)	0.007 (0.016)	0.025 (0.019)	0.054 (0.058)
City Controls	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes
R ²	0.02	0.03	0.38	0.11	0.06
Cities	5,513	5,513	5,513	5,513	5,467
Observations	10,992	11,026	11,026	11,026	10,429

Notes: This table provides estimates from model 1.4.2 of the effect of banning corporate contributions on the selection of candidates for office. Each column represents a different dependent variable, as follows: (1) Indicator of female mayor (2) Indicator of Elected candidate with a college degree (3) Elected candidate was re-elected (4) Party was re-elected (5) Elected candidate's self-reported wealth. variable "Elected candidate's self-reported wealth" is in log values. Standard errors are in parentheses and are clustered at the municipality level. City-year controls include Population, GDP per capita and an indicator variable for open seats. * Significant at 10%; ** significant at 5%; *** significant at 1%.

1.5.4 Heterogeneity: open seat x has an incumbent runner

In this section, I test whether the reform affected in differing ways cities with and without an incumbent runner. Column (1) of Table 1.5.4 provides estimates using the benchmark model from previous sections, while Columns

(2) and (3) show the effects of the reform on municipalities with an incumbent runner and on cities with open seats, respectively. As we can see, all the effects related to favoring wealthier candidates are larger and significant for cities with open seats. Banning corporate contributions increased the city-average self-reported wealth of candidates by 14%, with the richest individual running for office 18% wealthier and with the elected candidate 15% wealthier, on average. The effect is also larger when it comes to the number of candidates.

Table 1.5.4 – Effects of Corporate Contributions Ban on Electoral Outcomes: Heterogeneity to Incumbency

	Full Sample	Has Incumbent	Open seat
	(1)	(2)	(3)
No. of Candidates	0.051*** (0.013)	0.046** (0.024)	0.055*** (0.020)
Avg. Cand. Assets	0.079** (0.039)	−0.003 (0.069)	0.133** (0.062)
Max. Cand. Assets	0.099** (0.044)	0.003 (0.077)	0.164** (0.070)
Elected Cand. Assets	0.119** (0.058)	0.084 (0.099)	0.140* (0.083)
City Controls	Yes	Yes	Yes
State FE	Yes	Yes	Yes
Cities	5,467	3,915	4,707
Obs.	10,429	4,460	5,969

Notes: This table provides estimates from model 1.4.2 of the effect of banning corporate contributions on selected outcomes. Each row represents a different dependent variable in logarithm values, in the following order: first row shows the effects on the Number of candidates, second row shows the effects on Average candidates' self-reported wealth, the third row on Maximum candidates' self-reported wealth, and the fourth row on Elected candidate's self-reported wealth. In Column (1) I present the baseline model, as discussed in Sections 1.5.2, 1.5.1 and 1.5.3. In Column (2) I restrict the sample to municipalities where an incumbent candidate is running for re-election. In Column (3) I restrict the sample to municipalities with open seat. Standard errors are in parentheses and are clustered at the municipality level. City-year controls include Population, GDP per capita and an indicator variable for open seats. * Significant at 10%; ** significant at 5%; *** significant at 1%.

1.6 Robustness Analysis

I have shown evidence that the reform affected the three parts of the electoral process (ie, campaign financing, entry of candidates, and selection for office) and that it favored wealthier candidates in municipalities that were more reliant on corporate contributions for financing elections. I have also shown that the number of candidates running for office increased as a result of the reform, but without increasing local competition. In this section, I provide robustness analysis by testing the sensitivity of the results to different specifications, running “placebo reforms” and interacting the effect of banning corporate contributions with other features of the 2015 reform.

1.6.1 Placebo Reforms

In this part, I test the impact of a series of placebo reforms. More precisely, I consider the pre-treatment period from 2000 to 2012 and run the specification as described in section 1.4.2, pretending the reform was enacted in 2003, 2007, and 2011, instead of 2015. The figure below provides estimates for each of the placebo reforms along with the true reform (first coefficient of each graph). Unfortunately, information on candidates’ wealth is recorded by TSE only since the 2008 elections. Therefore, the plots for outcomes related to candidates’ wealth only present placebo estimates for 2012 elections. As shown in Figure 1.6.1, no coefficient associated with placebo reforms is significant regarding candidates’ wealth. For the number of candidates, the 2008 placebo reform estimate is significant, but negative, which contrasts even more with the positive effect of the true reform.

Figure 1.6.1 – Placebo Tests

Notes: This figure shows the impact of a series of placebo reforms on the number of candidates running for office, average, and maximum candidates' wealth and elected candidates' wealth. In each graph, the first estimate refers to the impact of the 2015 reform, while the other coefficients present "placebo reforms" effective in 2004, 2008 and 2012. On estimating the effects of placebo reforms, I include pre-treatment period alone. Horizontal lines refer to 95% confidence intervals. Due to lack of available data, I was only able to present 2012 placebo estimate regarding candidates' self reported wealth variables. * Significant at 10%; ** significant at 5%; *** significant at 1%.

1.6.2 Spending Caps

Along with the ban to corporate contributions, the 2015 electoral reform defined spending caps at the city level based on 2012 maximum spending. One can be concerned that these spending caps might drive the results from section 1.5 by constraining candidates that would raise more resources in the absence of spending limits. From Figure 1.6.2, we can see that only a few municipalities had candidates constrained by the spending cap. There were 378 municipalities

where a candidate spent in 2016 elections at least 95% of the municipal spending cap. To make sure that these municipalities are not driving the results, I replicate the results removing them from the sample in Table 1.6.1^{1.6.1}. The results are very similar for each of the outcomes of interest.

Figure 1.6.2 – Spending Cap

Notes: This figure shows the distribution of actual maximum campaign spending in 2016 as a function of the city-level spending cap defined by the 2015 reform.

^{1.6.1} In Tables A.10, A.11, and A.12 from Appendix, I replicate all regressions from Section 1.5.

Table 1.6.1 – Effects of Corporate Contributions Ban on Electoral Outcomes:
Robustness to Spending Cap

	(1)	(2)
No. of Candidates	0.051*** (0.013)	0.050*** (0.014)
Avg. Cand. Assets	0.079** (0.039)	0.085** (0.041)
Max. Cand. Assets	0.099** (0.044)	0.099** (0.046)
Elected Cand. Assets	0.119** (0.058)	0.120** (0.060)
City Controls	Yes	Yes
State FE	Yes	Yes
Cities	5,467	5,095
Obs.	10,429	9,716

Notes: This table provides estimates from model 1.4.2 of the effect of banning corporate contributions on selected outcomes. Each row represents a different dependent variable in logarithm values, in the following order: first row shows the effects on the Number of candidates, second row shows the effects on Average candidates' self-reported wealth, the third row on Maximum candidates' self-reported wealth, and the fourth row on Elected candidate's self-reported wealth. In Column (1) I present the baseline model, as discussed in Sections 1.5.2, 1.5.1 and 1.5.3. In Column (2) I remove from sample all municipalities where at least one candidate spent 95% or more of the local spending cap. Standard errors are in parentheses and are clustered at the municipality level. City-year controls include Population, GDP per capita and an indicator variable for open seats. * Significant at 10%; ** significant at 5%; *** significant at 1%.

1.6.3 Number of Exposure Quantiles

The exposure levels to companies' contributions are defined based on a non-parametric approach of ranking municipalities and setting quantiles of exposure. A potential concern is about how reliant on this classification are the results presented. To be transparent about the process of choosing the number of quantiles, Table 1.6.2 shows estimates for the main outcomes with variations on the number of groups. We can see that by increasing the number of quantiles, the point estimates are usually higher, but with a toll on statistical significance. The reverse occurs by splitting municipalities based on the median level of exposure

(22.4%), where the point estimates are lower, but the coefficients have higher statistical significance. This is in line with the fact that by increasing the number of groups, we necessarily decrease the sample in each of these groups. Overall, the results are stable to differences in the number of quantiles.

Table 1.6.2 – Effects of Corporate Contributions Ban on Electoral Outcomes:
Robustness to Number of Quantiles

	Terciles	Median	Quartiles	Quintiles
	(1)	(2)	(3)	(4)
No. of Candidates	0.051*** (0.013)	0.052*** (0.016)	0.037*** (0.011)	0.055*** (0.018)
Avg. Cand. Assets	0.079** (0.039)	0.066 (0.046)	0.071** (0.031)	0.082 (0.052)
Max. Cand. Assets	0.099** (0.044)	0.081 (0.052)	0.089** (0.035)	0.103* (0.059)
Elected Cand. Assets	0.119** (0.058)	0.103 (0.068)	0.103** (0.048)	0.105 (0.075)
City Controls	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Cities	5,467	5,467	5,467	5,467
Obs.	10,429	10,429	10,429	10,429

Notes: This table provides estimates from model 1.4.2 of the effect of banning corporate contributions on selected outcomes. Each row represents a different dependent variable in logarithm values, in the following order: first row shows the effects on the Number of candidates, second row shows the effects on Average candidates' self-reported wealth, the third row on Maximum candidates' self-reported wealth, and the fourth row on Elected candidate's self-reported wealth. In Column (1) I present the baseline model, as discussed in Sections 1.5.2, 1.5.1 and 1.5.3. In Column (2)-(4) I use 2, 4 and 5 quantiles to compute city-level exposure level to corporate contributions. Standard errors are in parentheses and are clustered at the municipality level. City-year controls include Population, GDP per capita and an indicator variable for open seats. * Significant at 10%; ** significant at 5%; *** significant at 1%.

1.6.4 Alternative Proxies for Exposure Levels

The ideal experiment for assessing the effect of banning corporate contributions in 2016 elections would be to have the counterfactual information of how reliant on contributions from companies each municipality was in 2016. Of course, that information is, by definition, not available. So to better gauge that

counterfactual information, I use 2012 data (last year available) as a proxy. In Table 1.6.3, I present alternative proxies by leveraging the available data from 2004 to 2012. I construct three alternative measures. Column (2) uses data from 2004 to 2012, Column (3) uses data from 2004 and Column (4) uses data from 2008. In general, the results are very similar when I use data from 2004 to 2012, with some of the estimates losing significance when using 2004 or 2008 data alone. In any case, the coefficients are all positive regardless of the proxy used. Besides that, as already stated in section 1.3.2, the campaign finance data from 2004 and 2008 are less accurate with respect to how much of the total contributions in a city came from companies (i.e., the exposure measure). In these previous years, I am not able to compute properly indirect corporate contributions to candidates. Nevertheless, I present these alternative proxies to check for the sensitivity of the results to different indicators of exposure.

Table 1.6.3 – Effects of Corporate Contributions Ban on Electoral Outcomes:
Robustness to Different Proxies

	(1)	(2)	(3)	(4)
No. of Candidates	0.051*** (0.013)	0.065*** (0.013)	0.055*** (0.014)	0.065*** (0.013)
Avg. Cand. Assets	0.079** (0.039)	0.067* (0.039)	0.056 (0.040)	0.054 (0.038)
Max. Cand. Assets	0.099** (0.044)	0.107** (0.044)	0.110** (0.045)	0.099** (0.043)
Elected Cand. Assets	0.119** (0.058)	0.093 (0.057)	0.043 (0.059)	0.079 (0.057)
City Controls	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Cities	5,467	5,470	5,137	5,469
Obs.	10,429	10,435	9,811	10,434

Notes: This table provides estimates from model 1.4.2 of the effect of banning corporate contributions on selected outcomes. Each row represents a different dependent variable in logarithm values, in the following order: first row shows the effects on the Number of candidates, second row shows the effects on Average candidates' self-reported wealth, the third row on Maximum candidates' self-reported wealth, and the fourth row on Elected candidate's self-reported wealth. In Column (1) I present the baseline model, as discussed in Sections 1.5.2, 1.5.1 and 1.5.3, with data from 2012 to compute city-level exposure level to corporate contributions. In Column (2) I use data from 2004 to 2012. In Column (3) I use data from 2004, In Column (4) I use data from 2008. Standard errors are in parentheses and are clustered at the municipality level. City-year controls include Population, GDP per capita and an indicator variable for open seats. * Significant at 10%, ** significant at 5%, *** significant at 1%.

A different approach to the circumvent the lack of an ideal experiment for measuring the level of exposure in 2016 is to keep in the sample only municipalities that did not change their exposure status regardless of the proxies used. Table 1.6.4 replicates all results for the sample excluding municipalities that changed their exposure level status when comparing with data from all years (2004-2012). The results show stronger effects, which is reassuring for the empirical strategy, as we would expect that these cities with unchanged exposure status are the most reliant, or more structurally reliant, on corporate contributions. In that sense, these are the municipalities most affected by the prohibition of corporate donations to electoral campaigns.

Table 1.6.4 – Effects of Corporate Contributions Ban on Electoral Outcomes:
Restricting sample to Unchanged Exposure Status

	(1)	(2)
No. of Candidates	0.051*** (0.013)	0.065*** (0.015)
Avg. Cand. Assets	0.079** (0.039)	0.102** (0.045)
Max. Cand. Assets	0.099** (0.044)	0.141*** (0.051)
Elected Cand. Assets	0.119** (0.058)	0.149** (0.066)
City Controls	Yes	Yes
State FE	Yes	Yes
Cities	5,467	3,922
Obs.	10,429	7,481

Notes: This table provides estimates from model 1.4.2 of the effect of banning corporate contributions on selected outcomes. Each row represents a different dependent variable in logarithm values, in the following order: first row shows the effects on the Number of candidates, second row shows the effects on Average candidates' self-reported wealth, the third row on Maximum candidates' self-reported wealth, and the fourth row on Elected candidate's self-reported wealth. In Column (1) I present the baseline model, as discussed in Sections 1.5.2, 1.5.1 and 1.5.3. In Column (2) I keep in sample only municipalities that did not change their exposure status regardless of the proxies used. Standard errors are in parentheses and are clustered at the municipality level. City-year controls include Population, GDP per capita and an indicator variable for open seats. * Significant at 10%; ** significant at 5%; *** significant at 1%.

1.6.5 Clustering at State Level

Clustering standard errors at the treatment level to account for the plausible correlation of the error term within municipalities is the standard procedure in difference-in-differences models (BERTRAND; DUFLO; MULLAINATHAN, 2004). Nevertheless, in Column (2) of Table 1.6.5 I provide estimates with standard errors clustered at the state level. As expected, the standard errors are in general slightly larger. However, the significance of the main results is left unchanged.

Table 1.6.5 – Effects of Corporate Contributions Ban on Electoral Outcomes:
Clustering at State Level

	(1)	(2)
No. of Candidates	0.051*** (0.013)	0.051*** (0.013)
Avg. Cand. Assets	0.079** (0.039)	0.079 (0.050)
Max. Cand. Assets	0.099** (0.044)	0.099 (0.061)
Elected Cand. Assets	0.119** (0.058)	0.119** (0.049)
City Controls	Yes	Yes
State FE	Yes	Yes
Cities	5,467	5,467
Obs.	10,429	10,429

Notes: This table provides estimates from model 1.4.2 of the effect of banning corporate contributions on selected outcomes. Each row represents a different dependent variable in logarithm values, in the following order: first row shows the effects on the Number of candidates, second row shows the effects on Average candidates' self-reported wealth, the third row on Maximum candidates' self-reported wealth, and the fourth row on Elected candidate's self-reported wealth. In Column (1) I present the baseline model, as discussed in Sections 1.5.2, 1.5.1 and 1.5.3. In Column (2) standard errors are clustered at the state level. City-year controls include Population, GDP per capita and an indicator variable for open seats. * Significant at 10%; ** significant at 5%; *** significant at 1%.

1.7 Conclusion

This paper examines whether and how banning contributions from companies in electoral campaigns affects electoral outcomes. Differently from most of the existing literature that focuses on national elections for Congress, I analyze this question in the context of local mayoral elections in a developing country. I explore the heterogeneity of companies' participation in funding local campaigns and leverage these different pre-reform conditions and compare cities that were more exposed to companies' contributions with less exposed cities. Using a difference-in-differences model, I analyze three parts of the electoral process, showing how candidates finance their campaigns in the absence of this

predominant source of donations, how it affects who participate in the electoral process as a candidate and who gets selected for office.

I find that banning corporate contributions led candidates to substitute the funding sources to finance campaigns. In particular, candidates relied on self-contribution. The ban also affected the pool of candidates by increasing the number of candidates running for office and attracting wealthier candidates. In terms of political selection for office, the ban led wealthier candidates to become mayors. Another interesting finding shown in the paper is that for municipalities with open seats the effect of favoring wealthier candidates is larger.

These results suggest that even though the 2015 reform was aimed at reducing the role of money in elections, leakages such as the removal of specific limits to self contributions can maintain the *status quo* of few sources of “big money” setting the stage for successful candidacies.

A Additional Tables

Table A.1 – 2016 Public Funds Across Political Parties (top 10 only, 2016 prices)

Political Party	Public Funds	Share	Cum.
PT	108,866,368.00	13.29	13.29
PSDB	89,725,424.00	10.95	24.24
PMDB	87,472,824.00	10.68	34.92
PP	52,588,884.00	6.42	41.34
PSB	51,294,072.00	6.26	47.61
PSD	48,895,588.00	5.97	53.57
PR	46,237,132.00	5.64	59.22
PRB	36,555,268.00	4.46	63.68
DEM	33,841,608.00	4.13	67.81
PTB	32,471,780.00	3.96	71.78
Total	819,131,456.00		

Notes: This table provides information about the distribution of public funds across 10 of the 35 registered Brazilian political parties in 2016. The fund, as stated on Political Parties Law (9096/1995), consists of fines and penalties applied under the terms of the Electoral Code, financial resources allocated to them by legislation on a permanent basis, donations from individuals or legal entities and contributions from the Federal government (*duodécimos*).

Table A.2 – Descriptives of City-level Demographics

	Mean	Std. Dev.	Min.	Median	Max.	Obs.
Total Population (In Thousands)	33.89	200.90	0.81	10.93	11,253.50	5,513
Share of Urban Households (%)	63.78	22.03	4.18	64.59	100.00	5,513
GDP Per Capita	12.56	14.70	2.26	9.25	311.88	5,513
Illiteracy Rate (%)	17.44	10.71	0.97	14.13	47.64	5,513
GINI Index	0.49	0.07	0.28	0.49	0.80	5,513
Human Development Index	0.66	0.07	0.42	0.67	0.86	5,513

Notes: This table provides summary statistics of the city-level demographics for the working sample. All variables are based on the 2010 Brazilian Census data.

Table A.3 – Descriptives of Direct and Indirect Corporate Contributors

	Mean	Std. Dev.	Min.	Median	Max.	Sum	Obs.
Panel A: Direct Contributions							
- 2012 Contributions	26,226.08	167,684.73	0.00	3,314.19	12,276,021.43	967,768,603.54	36,901
- % of Firms in Simples Regime	31.60	46.49	0.00	0.00	100.00	1,166,000.00	36,901
- % of Firms in MEI Regime	3.11	17.36	0.00	0.00	100.00	110,400.00	35,474
- Number of years active	13.02	10.81	0.00	10.00	83.00	479,047.00	36,786
- Number of Employees	70.22	340.57	1.00	10.00	28,165.00	1,922,508.00	27,378
- Total Monthly Wages (December)	175,630.88	1,628,812.90	0.00	13,572.48	207,667,770.79	4,808,422,303.64	27,378
Panel B: Indirect Contributions							
- 2012 Contributions	854,436.74	4,413,698.75	5.30	132,567.75	108,261,449.26	1,159,470,659.85	1,357
- % of Firms in Simples Regime	0.03	0.17	0.00	0.00	1.00	38.00	1,357
- % of Firms in MEI Regime	0.00	0.00	0.00	0.00	0.00	0.00	1,277
- Number of years active	20.47	14.44	0.00	17.00	105.00	27,781.00	1,357
- Number of Employees	441.30	1,041.58	1.00	149.00	18,513.00	515,883.00	1,169
- Total Monthly Wages (December)	1,450,494.86	4,301,282.23	0.00	394,370.03	118,732,105.29	1,695,628,485.56	1,169

Notes: This table provides summary statistics on direct and indirect corporate contributors for the 2012 municipal elections. All variables are in 2016 price levels.

Table A.4 – 2012 Corporate Contributions Across 5-Digit Industries (top 30 only, 2016 prices)

5-Digit Industry	# of Firms	# of Donations	Av. Donations	Total Donations	Share	Cum.
01. Retail of fuel	2,294	2,614	23,685.84	61,914,793.19	5.93	5.93
02. Construction of buildings	1,220	1,483	41,082.67	60,925,595.42	5.84	11.77
03. Real Estate	569	777	50,831.66	39,496,199.63	3.79	15.56
04. Construction of highways and railways	188	482	81,189.68	39,133,424.81	3.75	19.31
05. Real estate activities of own property	466	583	47,064.64	27,438,683.02	2.63	21.94
06. Political Organization Activities	336	785	34,016.27	26,702,774.19	2.56	24.50
07. Multiple banks with commercial portfolio	16	305	86,585.51	26,408,579.32	2.53	27.03
08. Retail of food products (supermarkets)	661	751	34,379.45	25,818,963.30	2.47	29.51
09. Civil engineering works not previously specified	104	180	132,858.05	23,914,449.72	2.29	31.80
10. Wholesale of motor vehicles	439	546	38,919.63	21,250,117.15	2.04	33.83
11. Retail trade of raw construction materials	1,323	1,378	14,254.88	19,643,221.69	1.88	35.72
12. Road freight transport	725	846	21,678.92	18,340,364.29	1.76	37.47
13. Retail of food products (minimarkets)	691	715	19,123.60	13,673,371.25	1.31	38.79
14. Wholesale of food products not previously specified	27	28	470,386.40	13,170,819.24	1.26	40.05
15. Earthworks	183	221	54,116.33	11,959,708.08	1.15	41.19
16. Civil engineering works	241	338	34,639.97	11,708,310.35	1.12	42.32
17. Installation of industrial facilities and metal structures	26	83	132,923.54	11,032,654.15	1.06	43.37
18. Holdings of non-financial institutions	131	227	41,153.40	9,341,821.38	0.90	44.27
19. Wholesale of beverages	98	180	51,755.60	9,316,007.90	0.89	45.16
20. Wholesale of food products	140	167	53,210.17	8,886,097.71	0.85	46.01
21. Combined office and administrative support services	130	210	41,160.09	8,643,619.54	0.83	46.84
22. Manufacture of malt beers and draft beers	10	81	102,891.58	8,334,218.12	0.80	47.64
23. Retail of accessories for cars	553	615	13,291.47	8,174,256.78	0.78	49.21
24. Collection of non-hazardous waste	54	87	87,506.82	7,613,093.71	0.73	49.94
25. Manufacture of cellulose and other papermaking pulp	10	219	33,244.54	7,280,554.13	0.70	50.64
26. Manufacture of raw sugar	53	189	37,868.93	7,157,227.29	0.69	51.33
27. Wholesale of fuel	71	102	68,773.96	7,014,943.43	0.67	52.00
28. Retail of Apparel	399	420	16,670.26	7,001,507.42	0.67	52.67
29. Wholesaling of pharmaceutical products	127	179	35,919.30	6,429,554.97	0.62	53.29
30. Production of long rolled steel	7	43	39,192.88	1,685,293.98	0.16	81.28
Total	29,510	38,034	27,431.83	1,043,342,368.91		

Notes: This table illustrates the industry distribution of firms that contributed to electoral campaigns in 2012. It is based on the 5-digit National Classification of Economic Activities (CNAE) by Brazilian Statistical Institute (IBGE) and shows the top 30 from 630 industries. Monetary values are in 2016 prices.

Table A.5 – 2012 Indirect Corporate Contributions (top 30 only, 2016 prices)

Name of Firm	5-Digit Industry	Total Donation	Share	Cum.
01. Construtora Andrade Gutierrez S/A	Construction of highways and railways	108,261,449.26	9.34	9.34
02. Construtora Queiroz Galvão S/A	Civil engineering works not previously specified	69,081,052.11	5.96	15.30
03. Construções e Comércio Carnargo Corrêa S/A	Construction of special works of art	43,336,395.96	3.74	19.03
04. Construtora OAS S/A	Civil engineering works not previously specified	43,309,882.41	3.74	22.77
05. Vale Fertilizantes S/A	Manufacture of intermediates for fertilizers	40,393,392.02	3.48	26.25
06. JBS S/A	Slaughter of cattle except pigs	26,725,657.47	2.30	28.56
07. Construtora Norberto Odebrecht S/A	Construction of special works of art	25,718,142.60	2.22	30.77
08. Praiamar Indústria, Comércio & Distribuição Ltda	Manufacture of soft drinks and other non-alcoholic drinks	25,466,263.89	2.20	32.97
09. Banco BMG S/A	Multiple banks with commercial portfolio	18,010,653.89	1.55	34.52
10. Cartoica Christani Nielsen Engenharia S/A	Civil engineering works not previously specified	16,193,150.10	1.40	35.92
11. Contax S/A	Call center activities	14,801,188.77	1.28	37.20
12. Banco Alvorada S/A	Multiple banks with commercial portfolio	13,455,626.18	1.16	38.36
13. Galvão Engenharia S/A	Construction of highways and railways	12,979,708.06	1.12	39.48
14. Tempo Serviços Ltda	Service activities not previously specified	11,639,448.04	1.00	40.48
15. Banco Bankpar S/A	Multiple banks without commercial portfolio	11,586,420.95	1.00	41.48
16. UTC Engenharia S/A	Installation of industrial facilities and metal structures	11,239,756.29	0.97	42.45
17. Braskem S/A	Manufacture of basic petrochemical products	10,015,493.16	0.86	43.31
18. JBS Confinamento Ltda	Cattle breeding	9,942,580.90	0.86	44.17
19. Leyroz de Caxias Indústria, Comércio e Logística Ltda	Wholesale of beverages	9,611,161.54	0.83	45.00
20. JSL S/A	Road freight transport	9,080,890.56	0.78	45.78
21. Banco Santander (Brasil) S/A	Multiple banks with commercial portfolio	8,616,903.45	0.74	46.53
22. Serveng Civilsan S/A	Construction of highways and railways	8,457,822.15	0.73	47.26
23. Construtora Norberto Odebrecht Brasil S/A	Construction of special works of art	8,073,375.69	0.70	47.95
24. Construtora Barbosa Mello S/A	Construction of highways and railways	7,688,929.23	0.66	48.62
25. OAS S/A	Civil engineering works not previously specified	7,490,077.61	0.65	49.26
26. Cascavel Couros Ltda	Tanning and other leather preparations	7,423,793.74	0.64	49.90
27. Banco BTG Pactual S/A	Multiple banks with commercial portfolio	6,296,967.91	0.54	50.45
28. Construtora Triunfo S/A	Construction of highways and railways	5,733,554.99	0.49	50.94
29. Hypermarcas S/A	Manufacture of medicines for human use	5,699,087.37	0.49	51.43
30. Copersucar S/A	Wholesale of food products not previously specified	5,360,317.13	0.46	51.89
Total		1,159,470,659.85		

Notes: This table illustrates the industry distribution of firms that contributed to electoral campaigns in 2012. It includes 1,357 contributors and the grouping of companies is based on the 5-digit National Classification of Economic Activities (CNAE) by Brazilian Statistical Institute (IBGE). Monetary values are in 2016 prices.

Table A.6 – Average Electoral Outcomes Across Exposure Levels

Exposure level:	Low	Medium	High	Total
Panel A: 2012 Elections				
<i>Contributions Outcomes</i>				
- Total donations	163,102.86	257,769.21	967,943.56	462,700.95
- Indirect donations	2,409.68	16,741.43	347,750.09	122,196.87
- Individual donations	80,935.27	117,171.17	162,045.42	120,028.29
- Self donations	67,005.67	74,383.77	79,934.72	73,771.26
- Public funds	5,592.04	6,160.59	31,092.64	14,274.08
<i>Entry Outcomes</i>				
- Number of candidates	2.53	2.79	3.17	2.83
- Number of effective cand.	2.02	2.16	2.21	2.13
- Female candidates (%)	13.68	12.97	12.58	13.08
- Cand. with college degree (%)	42.95	46.89	52.91	47.58
- Avg. cand. assets	916,435.89	1,011,907.18	1,021,129.67	983,157.58
- Max. cand. assets	1,604,381.44	1,975,826.38	2,214,833.66	1,931,680.49
<i>Selection Outcomes</i>				
- Female mayors (%)	12.60	11.22	10.79	11.53
- Mayors with college degree (%)	44.37	47.28	54.52	48.72
- Mayor re-elected (%)	27.30	22.52	22.88	24.23
- Party re-elected (%)	33.01	28.13	29.41	30.18
- Mayor assets	1,027,315.86	1,341,169.65	1,391,096.84	1,252,623.16
Panel A: 2016 Elections				
<i>Contributions Outcomes</i>				
- Total donations	120,746.75	175,883.60	487,971.33	261,426.21
- Indirect donations	846.91	1,300.41	6,027.46	2,723.39
- Individual donations	54,315.19	78,338.16	217,070.83	116,526.98
- Self donations	56,169.00	81,126.47	151,636.48	96,283.30
- Public funds	9,345.25	15,040.63	112,001.66	45,431.82
<i>Entry Outcomes</i>				
- Number of candidates	2.61	2.82	3.48	2.97
- Number of effective cand.	2.08	2.15	2.30	2.18
- Female candidates (%)	13.89	12.62	12.91	13.14
- Cand. with college degree (%)	46.68	49.89	56.44	51.00
- Avg. cand. assets	776,701.24	820,031.70	1,298,220.95	964,863.12
- Max. cand. assets	1,377,582.78	1,512,933.36	3,603,736.50	2,164,226.18
<i>Selection Outcomes</i>				
- Female mayors (%)	12.40	11.10	11.22	11.57
- Mayors with college degree (%)	46.82	51.90	59.37	52.69
- Mayor re-elected (%)	22.29	22.58	23.26	22.71
- Party re-elected (%)	24.80	24.70	24.62	24.71
- Mayor assets	904,575.68	932,003.43	1,890,419.14	1,238,652.94

Notes: This table provides averages of all outcome variables analyzed in this study, decomposed by levels of exposure to corporate contributions. All monetary variables are in 2016 price levels.

Table A.7 – Effects of Corporate Contributions Ban on Campaign Contributions - No Covariates

	(1)	(2)	(3)	(4)	(5)
High $\times$ Ban	-0.253*** (0.022)	-4.812*** (0.165)	0.454*** (0.040)	1.104*** (0.079)	2.056*** (0.191)
Medium $\times$ Ban	-0.144*** (0.022)	-3.491*** (0.160)	0.000 (0.038)	0.280*** (0.071)	0.984*** (0.190)
City Controls	No	No	No	No	No
State FE	No	No	No	No	No
R ²	0.15	0.37	0.07	0.03	0.14
Cities	5,513	5,513	5,512	5,513	5,513
Observations	11,023	11,026	10,964	11,026	11,026

Notes: This table provides estimates from model 1.4.2 of the effect of banning corporate contributions on campaign donations outcomes. Each column represents a different dependent variable, as follows: (1) Total contributions (2) Indirect private contributions (3) Individual contributions (4) Self contributions (5) Public funds. All dependent variables are in log values. Standard errors are in parentheses and are clustered at the municipality level. * Significant at 10%; ** significant at 5%; *** significant at 1%.

Table A.8 – Effects of Corporate Contributions Ban on Entry of Candidates - No Covariates

	(1)	(2)	(3)	(4)	(5)	(6)
High $\times$ Ban	0.050*** (0.013)	0.004 (0.011)	0.129 (0.840)	-0.205 (1.213)	0.095** (0.039)	0.116*** (0.044)
Medium $\times$ Ban	-0.029** (0.013)	-0.040*** (0.010)	-0.554 (0.864)	-0.741 (1.241)	0.032 (0.038)	0.016 (0.042)
City Controls	No	No	No	No	No	No
State FE	No	No	No	No	No	No
R ²	0.06	0.02	0.00	0.02	0.01	0.01
Cities	5,513	5,513	5,513	5,513	5,513	5,513
Observations	11,026	11,026	11,026	11,026	10,972	10,972

Notes: This table provides estimates from model 1.4.2 of the effect of banning corporate contributions on the entry of candidates in the electoral process. Each column represents a different dependent variable, as follows: (1) Number of candidates (2) Number of effective candidates (3) Share of female candidates (4) Share of candidates with a college degree (5) Average candidates' self-reported wealth (6) Maximum candidates' self-reported wealth. All dependent variables are in log values, with the exception of "Share of female candidates" and "Share of candidates with a college degree", which are in percentage. Standard errors are in parentheses and are clustered at the municipality level. * Significant at 10%; ** significant at 5%; *** significant at 1%.

Table A.9 – Effects of Corporate Contributions Ban on Selection for Office - No Covariates

	(1)	(2)	(3)	(4)	(5)
High $\times$ Ban	0.006 (0.013)	0.024 (0.020)	0.054** (0.023)	0.034 (0.021)	0.137** (0.058)
Medium $\times$ Ban	0.001 (0.013)	0.022 (0.020)	0.051** (0.023)	0.048** (0.021)	0.065 (0.058)
City Controls	No	No	No	No	No
State FE	No	No	No	No	No
R ²	0.00	0.01	0.00	0.00	0.00
Cities	5,513	5,513	5,513	5,513	5,467
Observations	10,992	11,026	11,026	11,026	10,429

Notes: This table provides estimates from model 1.4.2 of the effect of banning corporate contributions on the selection of candidates for office. Each column represents a different dependent variable, as follows: (1) Indicator of female mayor (2) Indicator of elected candidate with a college degree (3) Elected candidate was re-elected (4) Party was re-elected (5) Elected candidate's self-reported wealth. variable "Elected candidate's self-reported wealth" is in log values. Standard errors are in parentheses and are clustered at the municipality level. * Significant at 10%; ** significant at 5%; *** significant at 1%.

Table A.10 – Effects of Corporate Contributions Ban on Campaign Contributions: Robustness to Spending Cap

	(1)	(2)	(3)	(4)	(5)
High $\times$ Ban	-0.287*** (0.024)	-4.785*** (0.171)	0.442*** (0.041)	1.008*** (0.083)	1.909*** (0.199)
Medium $\times$ Ban	-0.159*** (0.023)	-3.554*** (0.164)	-0.002 (0.039)	0.247*** (0.073)	0.990*** (0.194)
City Controls	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes
R ²	0.36	0.41	0.23	0.08	0.19
Cities	5,141	5,141	5,140	5,141	5,141
Observations	10,279	10,282	10,220	10,282	10,282

Notes: This table provides estimates from model 1.4.2 of the effect of banning corporate contributions on campaign donations outcomes. Each column represents a different dependent variable, as follows: (1) Total contributions (2) Indirect private contributions (3) Individual contributions (4) Self contributions (5) Public funds. All dependent variables are in log values. Standard errors are in parentheses and are clustered at the municipality level. City-year controls include Population, GDP per capita and an indicator variable for open seats. * Significant at 10%; ** significant at 5%; *** significant at 1%.

Table A.11 – Effects of Corporate Contributions Ban on Entry of Candidates:
Robustness to Spending Cap

	(1)	(2)	(3)	(4)	(5)	(6)
High $\times$ Ban	0.050*** (0.014)	–0.002 (0.011)	–0.039 (0.872)	–0.640 (1.258)	0.085** (0.041)	0.099** (0.046)
Medium $\times$ Ban	–0.022* (0.013)	–0.038*** (0.010)	–0.474 (0.883)	–0.813 (1.279)	0.036 (0.039)	0.023 (0.043)
City Controls	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes
R ²	0.18	0.07	0.04	0.05	0.10	0.11
Cities	5,141	5,141	5,141	5,141	5,141	5,141
Observations	10,282	10,282	10,282	10,282	10,229	10,229

Notes: This table provides estimates from model 1.4.2 of the effect of banning corporate contributions on the entry of candidates in the electoral process. Each column represents a different dependent variable, as follows: (1) Number of candidates (2) Number of effective candidates (3) Share of female candidates (4) Share of candidates with a college degree (5) Average Candidates' self-reported wealth (6) Maximum Candidates' self-reported wealth. All dependent variables are in log values, with the exception of "Share of female candidates" and "Share of candidates with a college degree", which are in percentage. Standard errors are in parentheses and are clustered at the municipality level. City-year controls include Population, GDP per capita and an indicator variable for open seats. * Significant at 10%; ** significant at 5%; *** significant at 1%.

Table A.12 – Effects of Corporate Contributions Ban on Selection for Office:
Robustness to Spending Cap

	(1)	(2)	(3)	(4)	(5)
High $\times$ Ban	0.009 (0.014)	0.026 (0.020)	0.007 (0.016)	0.016 (0.019)	0.120** (0.060)
Medium $\times$ Ban	0.005 (0.014)	0.025 (0.020)	0.007 (0.016)	0.025 (0.019)	0.071 (0.059)
City Controls	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes
R ²	0.02	0.03	0.38	0.11	0.06
Cities	5,141	5,141	5,141	5,141	5,095
Observations	10,252	10,282	10,282	10,282	9,716

Notes: This table provides estimates from model 1.4.2 of the effect of banning corporate contributions on the selection of candidates for office. Each column represents a different dependent variable, as follows: (1) Indicator of female mayor (2) Indicator of Elected candidate with a college degree (3) Elected candidate was re-elected (4) Party was re-elected (5) Elected candidate's self-reported wealth. variable "Elected candidate's self-reported wealth" is in log values. Standard errors are in parentheses and are clustered at the municipality level. City-year controls include Population, GDP per capita and an indicator variable for open seats. * Significant at 10%; ** significant at 5%; *** significant at 1%.

2 Does Political Party Matter? Assessing Political Favoring in *Mais Médicos*

2.1 Introduction

There is a body of evidence on the benefits of decentralizing health services. Programs that lead primary health care to local communities have contributed to the inclusion of a large number of poor households to the public health system. This type of intervention is often low cost and relieves traditional mechanisms of provision of health services, such as public hospitals. [Chen et al. \(2004\)](#) and [Anand e Bärnighausen \(2004\)](#), for example, find a positive correlation between medical density and health outcomes with a cross-country analysis. In Brazil, [Rocha e Soares \(2010\)](#) present evidence on the effectiveness of the *Programa Saúde da Família* (Family Health Program), which aims to provide primary care teams to local health systems. According to the authors, the program affects the communities in which it was implemented via the reduction of child mortality, increased labor supply and school enrollment.

On 8th of July, 2013 the *Projeto Mais Médicos para o Brasil* (“More doctors for Brazil” – henceforth, PMM) was launched, program from the Ministry of Health that aims to increase medical density (physicians per capita) in Brazilian municipalities. The program was based on the identification of a huge disparity in the distribution of physicians throughout Brazil ([BRASIL, 2013b](#)). To address the problem, the project made a public call for primary care physicians and transferred selected candidates to local public health systems in Brazilian municipalities, constitutionally responsible for basic health care provision.

With its announcement, however, the medical associations and part of the Brazilian public opinion were against the program claiming both its ineffectiveness as its political use by the federal government. Opposition parties were against importing Cuban doctors (63% of PMM physicians)^{2.1.1}.

^{2.1.1} Source: “[Oposição vai questionar programa Mais Médicos na OIT](#)”, *Estadão*. February 28th, 2014 (in Portuguese).

In this paper, I delimit PMM as an intergovernmental in-kind transfer and assess whether there is political favoring in the program. The transfer of the doctor to the municipality is, at the bottom, a limiting case of a conditional grant. Rather than transferring money and conditioning it to a specific expenditure, PMM transfers the public service to be offered. Political favoring in the context of intergovernmental transfers is a widely discussed subject, with several works that both model and estimate it. An empirical strategy that has been used in the literature to give a measure to the political favor is to estimate the effect of political alignment between local and federal governments, typically measured by same-party governments.

I use a Regression Discontinuity Design (RDD) in close elections approach, an increasingly adopted strategy because of its milder assumptions and due to the fact that it explores a more credibly exogenous source of variation. The results indicate that the federal government does not favor aligned municipalities in PMM. By analyzing both the participation of municipalities and the number of allocated physicians, the estimates suggest a null effect in these two dimensions of the program. I also show that this null effect remains across municipalities with different levels of medical density and different population sizes. One explanation for these results is that with the “branded” nature of PMM and the wide media coverage of the program, the electoral credit of the transfer should go to the Federal government and, hence, the party heading local governments would not be a critical factor for the distribution of doctors across municipalities.

This paper contributes to the literature of politically motivated intergovernmental transfers, which is discussed in the next section of the paper. This study analyzes a limiting case for most of the models of this literature (BROLLO; NANNICINI, 2012; SOLÉ-OLLÉ; SORRIBAS-NAVARRO, 2008; ARULAMPALAM et al., 2009) by evaluating an in-kind transfer. As the transparency of the source of the transfer is a critical factor for the results of these models, PMM provides a case where the federal government reaps most of the electoral credit for the transfer.

The rest of the paper is organized as follows. In Section 2.2, I provide an overview of the literature on politically motivated intergovernmental transfers.

In Section 2.3, I provide a summary of the institutional context of both the Brazilian Political System and PMM. In Section 2.4, I present the data used, how it was built and some summary statistics. The empirical strategy is explained in Section 2.5. Finally, in Section 2.6, I show the main results and heterogeneity analysis, and in Section 2.7 I conclude the paper.

2.2 Related Literature

Intergovernmental transfers are part of the daily life of any federation and its allocation is a permanent issue in fiscal federalism literature. In this section, I provide a review of the approaches given to the subject of allocating intergovernmental transfers. Then, I discuss how allies at the local level may change the way central governments transfer resources to local jurisdictions.

The first systematic approaches given to the allocation of intergovernmental transfers use the theoretical and normative tools of welfare analysis and postulate that intergovernmental transfers should be determined by the criteria of efficiency and equity. Transfers from central government to local governments guarantee the provision of different public goods to heterogeneous populations (efficiency) and a minimum level of basic services in different jurisdictions (equity) (OATES, 1972; OATES, 1999; MUSGRAVE, 1959). Besides, centralized taxation along with the regional redistribution of resources reduces typical inefficiencies caused by local tax collection: free-rider behavior and fiscal war (INMAN; RUBINFELD, 1996).

Despite its power of public policy prescription, empirical evidence shows that such normative approaches have little explanatory power. Inman (1989), for example, shows that the allocation of federal transfers between the states in the United States does not seem consistent with such prescriptions. More recent studies move the problem from the normative field to the positive one by incorporating typical political economy frameworks. Specifically, they remove the implicit assumption in the traditional models about the existence of a benevolent central planner. Policymakers are now agents maximizing an objective function. Political parties can act opportunistically, seeking to maximize their chances of

re-election or the number of votes received.

To characterize the existing political incentives in the allocation of transfers, several studies used electoral competition models. Works such as [Case \(2001\)](#), [Strömberg \(2002\)](#) and [Johansson \(2003\)](#) test the hypothesis that central governments allocate more transfers to jurisdictions where there is a larger share of voters not associated with any party (swing-voters), a result derived from [Lindbeck e Weibull \(1987\)](#) and [Dixit e Londregan \(1998\)](#). [Dahlberg e Johansson \(2002\)](#) test this hypothesis against an alternative one: the candidates, risk averse, end up prioritizing their core supporters, a result from [Cox e McCubbins \(1986\)](#). According to the authors, the evidence supports the theory that candidates transfer resources tactically by prioritizing swing-voters. Such studies, however, do not address a fundamental question of a federations' routine: municipalities have their own administration and may be governed by non-aligned parties.

There are at least two reasons to believe that the allocation of intergovernmental transfers will be higher for municipalities governed by aligned parties. On the one hand, the party in power in the central government has incentives to punish municipalities governed by opposition parties (decreasing transfers) and reward aligned municipalities (increasing transfers). On the other hand, voters may not know from whom the resource is coming: whether the central or local government. Under this hypothesis, the grantor may get little or no political credit for the transfer and end up transferring more resources to aligned municipalities. However, if the central government is able to get the electoral credit for the transfer, it may be profitable to distribute resources to the municipalities governed by opposition parties.

In an attempt to estimate the effect of partisan alignment on the level of transfers, the strategy adopted by many of the early studies was what is commonly known as the hypothesis of selection on observables. [Grossman \(1994\)](#) and [Levitt e Snyder James M. \(1995\)](#) present evidence from the United States that controlling for socioeconomic characteristics and state policies, the partisan alignment in the state government impacts the amount of incoming transfers. For Australia, [Worthington e Dollery \(1998\)](#) examine the distribution of transfers comparing propositions from traditional models ([OATES, 1972](#); [OATES,](#)

1999) and politically oriented models (GROSSMAN, 1994). The authors also find evidence of tactical use of resources.

More recent studies use panel data methods, controlling estimates by fixed effects of location and unobservable variables that are time-invariant. Berry, Burden e Howell (2010), for example, use fixed effects estimators for US and show evidence that districts where lawmakers are the chairman of the party receive more resources. For data of Spain, Solé-Ollé e Sorribas-Navarro (2008) use estimators of differences in differences in time and levels of government and provide evidence that municipalities aligned with the two tiers of government (state and central) receive more transfers than non-aligned ones. It is possible, however, that there are still time-varying unobservable factors that could bias the estimates obtained with such models. To solve this problem, most recent studies use discontinuous regression models to estimate the impact of partisan alignment on the level of intergovernmental transfers.

The use of Regression Discontinuity methods has become an increasingly recurrent tool as an identification strategy and has proved to be effective on solving endogeneity problems. In the political economy field, for instance, several studies have used this methodology to identify the effect of the incumbent political party on policy variables (LEE; LEMIEUX T. MLEE; BUTLER, 2004; LEE, 2008; PETTERSSON-LIDBOM, 2008; FERREIRA; GYOURKO, 2009; TROUSTINE, 2011; GERBER; HOPKINS, 2011; ALBOUY, 2013).

For Brazil, there are two papers that dialogue directly with the above literature. Ferreira e Bugarin (2007) analyze the effect of partisan alignment on intergovernmental transfers associated with political budget cycles. According to the authors, there is a political bias in voluntary transfers, which are in part explained by political identification between the mayor of the municipality and the state and federal governments. Sakurai e Theodoro (2014) apply the model developed by Solé-Ollé e Sorribas-Navarro (2008) to Brazil, taking advantage of the fact that both Brazil and Spain have a federation with three levels of government. The authors find evidence that partisan alignment positively influences the decision of allocation of capital transfers to municipalities.

Two papers use RD to estimate the effect of partisan alignment between central and local governments on intergovernmental transfers. [Migueis \(2013\)](#) uses data from Portuguese municipalities from 1992 to 2005 to estimate the effect of party alignment on the level of discretionary federal transfers to municipalities. The author presents the result that aligned municipalities receive on average 19% more discretionary transfers than unaligned municipalities. [Brollo e Nannicini \(2012\)](#) do the same type of exercise for Brazil. The authors use data of voluntary transfers from the central government to municipalities and find evidence that the federal government penalizes municipalities governed by opposition coalition parties in pre-election years.

An additional literature this paper interacts with analyzes the trade-offs between in-kind and in-cash transfers. [Currie e Gahvari \(2008\)](#) make a good review of the main explanations for transferring goods and services directly. From this study, it seems that the paternalism hypothesis, first suggested by [Musgrave \(1959\)](#) explains the existence of the intergovernmental in-kind transfer: the federal government, by transferring a primary care doctor assumes to know better than their local counterpart the municipality's needs.

2.3 Institutional Background

2.3.1 Political System in Brazil

Brazil is a federal republic with a presidential system, organized in three levels of government (federal, state, and municipal), with each of them including an executive and a legislative branch and an independent budget. The federation has one of the most decentralized systems for the provision of public goods and services ([FERRAZ; FINAN, 2011](#)). Local governments are responsible for the provision of key services, such as early childhood and primary education, basic health, sanitation and public transportation. Most of the tax revenues are raised at the federal and state levels, and to cope with this vertical imbalance, Brazil has high levels of intergovernmental transfers. For example, in 2014 approximately

R\$ 140 billion^{2.3.1} were transferred from federal to municipal governments. At the city level, federal transfers amount to 85% of the municipalities' resources, on average. In contrast, local taxes^{2.3.2} represent only 6% of the available resources for the provision of public goods and services (BARBOSA; FERREIRA, 2019).

Brazilian territory is divided in 5,570 municipalities and every four years, local elections are held simultaneously in October, with contenders that are elected taking office on January 1st of the coming year. The last local election occurred in October 2016, when Brazilians chose their mayor and municipal councilors for office. For cities with less than 200,000 registered voters, mayors are elected based on a single-ballot plurality rule. For municipalities with 200,000 or more registered voters, a dual-ballot system is adopted: if no candidate receives more than 50% of the votes, a second round runoff is held. Since 1998 elected mayors face a two-term limit. If they want to run for an additional term, they must leave office for at least one term.

The Brazilian political system is structured in a multiparty system, and has currently 35 registered parties^{2.3.3}. The constitution states that political parties must have a minimum of members, corresponding to 0.5% of the votes cast in the previous national elections for Congress, along with affiliates distributed across at least 3 of the 27 Brazilian states. Any registered voter can join a political party as a member and must do so to run for any public office. Multiple affiliations are not allowed^{2.3.4}. Due to the large number of political parties in Brazil, it is common for parties to form coalitions when running for office, as they increase the available airtime for TV and radio. The largest political parties in Brazil are *Partido do Movimento Democrático Brasileiro* (PMDB), *Partido dos Trabalhadores* (PT) and *Partido da Social-Democracia Brasileira* (PSDB). From 1994 to 2016, PSDB and PT were the only political parties in power heading the Federal Government. PSDB ruled from 1995 to 2002, and PT from 2003 to 2016. In spite of the fact that PT and PSDB polarized national elections, that does not reflect an actual

^{2.3.1} Data from Brazilian Federal Treasury. Source: [Federal Treasury's Website](#) (in Portuguese).

^{2.3.2} Brazilian municipalities are responsible for urban property and service taxes.

^{2.3.3} Source: <http://www.tse.jus.br/partidos/partidos-politicos/registrados-no-tse> (in Portuguese).

^{2.3.4} See Albarracín (2016) for a detailed picture of the Brazilian political party system.

ideological polarization. PT is considered a left-wing party and PSDB a party with a center-left platform (POWER; ZUCCO, 2009)^{2.3.5}.

2.3.2 *Mais Médicos Program*

PMM was launched by the Federal Government on 8th of July 2013, with the main goal of increasing the number of basic health care doctors in areas of high social vulnerability in Brazil, and follow the path already started with Family Health Program of establishing a health care system focused on primary care, giving priority to prevention and faster detection of diseases^{2.3.6}.

The implementation of the program was motivated by a portrait of Brazilian health system that shows a low medical density in the country and an unequal distribution of doctors in Brazilian territory. A note from the Ministry of Health (BRASIL, 2013b) shows a medical density 1.8 doctors per thousand inhabitants, which is lower than in neighboring countries^{2.3.7}. One of the main goals of PMM is to increase the medical density and reduce regional inequalities in terms of medical distribution. The PMM has two major fronts, one with a long-term goal and the other a short-term goal:

- (a) Improvement in the structure of federal universities and the expansion of the number of undergraduate vacancies in medicine and residency via joint work of the Ministries of Health and Education. The effects of this measure are longer term.
- (b) Public Call of Brazilian and foreign medical professionals to compose the basic health workforce in the Unified System of Health (*Sistema Único de Saúde*) priority regions. The federal government is committed to transfer doctors to municipalities.

^{2.3.5} Table A.1 from Appendix provides the ideological classification of political parties in Brazil according to Power e Zucco (2009).

^{2.3.6} For an analysis of Family Health Program and its effects on health indicators, see Rocha e Soares (2010).

^{2.3.7} Argentina and Uruguay each have a ratio of 3.2 and 3.7 doctors per thousand inhabitants, for example.

The short-term aspect of the program – that is, the allocation of doctors in municipalities – functions as a in-kind transfer from the federal government to the municipalities. Following the taxonomy of [Boadway e Shah \(2007\)](#), we can see the program as a conditional matching grant. Conditionality comes from the fact that the program defines the type of goods or public services that can be offered with the transferred resources (medical service to basic health care). The counterpart that the municipality must offer is the minimum primary care health infrastructure. We can interpret the participation of the doctor as a subsidy to the municipal health services. This type of subsidy has two effects on local public finances: an income effect and a substitution effect. The transfer gives the recipient municipality more resources, which can be used for better delivery of basic health services (income effect). At the same time, the subsidy reduces the relative price of health services for a given budget (substitution effect).

Municipalities that adhere to PMM are grouped in one of six available profiles, as defined in Table A.2 from Appendix ([BRASIL, 2013a](#)). The Ministry of Health informs that all municipalities are able to sign up to the program, but the allocation of doctors to local health systems follows a prioritization rule, in which cities with profiles 1 to 5 are prioritized over cities with profile 6^{2.3.8}. By entering in the program, municipalities request a number of physicians to compose their basic health care network. Once the registration is done, the Ministry of Health analyzes the request and defines the number of physicians to be transferred.

Physicians from all over the world are eligible to participate in PMM. They may be physicians graduated in Brazilian institutions, or physicians with re-validated degree in the country or foreign institutions through international medical exchange. The selection and occupation of the vacancies are carried out respecting the following order of preference of candidates:

1. Graduated in Brazilian institutions or re-validated degree in Brazil;

^{2.3.8} For the registration of municipalities in the program, five membership notices were published: SGTES Notice / MS No. 38 of July 8, 2013; Notice SGTES / MS No. 50 of August 1, 2013; Notice SGTES / MS No. 22, of March 31, 2014; Notice SGTES / MS No. 01 of January 15, 2015 and Notice SGTES / MS No. 09 of July 3, 2015.

2. Brazilians graduated in foreign institutions with qualification to work abroad;
3. Foreigners with authorization to work abroad.

The registration of candidates is held by public call^{2.3.9}, and selected candidates receive a three-year appointment, extendable for three additional years. They receive a R\$ 10,000 monthly stipend and a settling-in allowance that varies from R\$ 10,000 to R\$ 30,000, depending on the region where the candidate is settled. In total, each doctor represents an annual transfer from the federal government to municipalities that amounts 130 to 150 thousand Brazilian reais^{2.3.10}.

2.4 Data

2.4.1 Electoral Data

Information on elections is obtained from the Brazilian Superior Electoral Court (TSE). TSE makes available data at the candidate level comprising their respective parties and electoral coalitions, the number of votes that each candidate received, and pre-election characteristics of all candidates, like age, gender, education, self-reported wealth and occupation. The data assembled comprises of all 2012 municipal elections and with it I construct a dataset at the coalition level. Table 2.4.1 presents basic descriptive statistics at the city level. On average, elections attract 3 candidates. In 24% of the municipalities, mayors get re-elected and in 30% the party that was already in power elected a candidate. 40% of the

^{2.3.9} For the registration of candidates in the program, seven membership notices were published: SGTES Notice / MS No. 39 of July 8, 2013; Notice SGTES / MS No. 49 of August 16, 2013; Notice SGTES / MS No. 63, of November 27, 2013; Notice SGTES / MS No. 04 of 16 January 2014; Notice SGTES / MS No. 21 of April 1, 2014; Notice SGTES / MS No. 02 of January 15, 2015 and Notice SGTES / MS No. 10 of 10 July 2015. According to the National Council of Municipal Health Secretariats (CONASENS), the activities of Brazilian doctors in the cities began on September 2nd. Foreign doctors began working on September 18th.

^{2.3.10} In US dollars, it represents an amount that ranges from \$49 to \$53 thousands, using an exchange rate of 2.83 (average exchange rate from 2013 to 2016).

municipalities have a incumbent candidate running for office and 58% have a incumbent party.

Table 2.4.1 – Descriptives of Electoral Data

	Mean	Std. Dev.	Min.	Median	Max.	Obs.
Number of Candidates	2.84	1.17	1.00	3.00	12.00	5,557
Average Number of Parties in Each Coalition	5.08	2.01	1.00	4.75	14.00	5,557
Vote Share of the First Coalition (%)	56.08	12.98	23.82	53.73	100.00	5,557
Vote Share of the Second Coalition (%)	39.60	8.44	0.23	41.68	49.99	5,322
Vote Share of the Third Coalition (%)	11.72	8.98	0.02	9.80	32.87	2,395
Mayor Re-elected (%)	24.20	42.84	0.00	0.00	100.00	5,557
Party Re-elected (%)	30.15	45.89	0.00	0.00	100.00	5,553
City has an Incumbent Candidate (%)	40.24	49.04	0.00	0.00	100.00	5,557
City has an Incumbent Party (%)	58.50	49.28	0.00	100.00	100.00	5,557

Notes: This table provides summary statistics of the electoral data for the year of 2012. All variables are computed at the municipality level.

2.4.2 *Mais Médicos* Data

Data on *Mais Médicos* program were obtained from two sources. Enrollment information of municipalities and doctors, number of doctors transferred to municipalities, and the nationality of the professionals were obtained by request in the *Lei de Acesso à Informação*, LAI (Access to Information Act)^{2.4.1}. Information on the eligibility of municipalities to the program were obtained from both LAI and the National Council of Health Secretaries (CONASS). Table 2.4.2 provides basic descriptive statistics of PMM data at the city level. 73% of the Brazilian municipalities participated in PMM, and the cities received 6 physicians, on average.

^{2.4.1} LAI is a law created in 2011 that allows any individual, without the need of further reason, the receipt of public information from government's units and departments. The Act applies to the three levels of government (Federal Government, States, Federal District and Municipalities), including the Account Courts and Public Prosecution. Private non-profit organizations are also required to publicize information on the receipt and allocation of public resources received by the government.

Table 2.4.2 – Descriptives of *Programa Mais Médicos* Data

	Mean	Std. Dev.	Min.	Median	Max.	Obs.
Number of Doctors Allocated	6.35	16.15	0.00	3.00	493.00	4,058
Share of Cities in <i>Mais Médicos</i>	73.04	44.38	0.00	100.00	100.00	5,557

Notes: This table provides summary statistics of PMM data. All variables are computed at the municipality level.

2.4.3 Additional Data

In addition to information about PMM and the municipal elections of 2012, I also gather data from both the health network and socioeconomic and demographic data of Brazilian municipalities. These were taken from the 2010 Census, published by the Brazilian Institute of Geography and Statistics (IBGE). Although IBGE update such information through the National Research by Household Sample (PNAD's), Census information are used for two reasons. First, the data predate both the municipal elections and PMM, which ensures that they are not outcome variables. Second, Census data are more accurate than those of the National Household Survey, as Census provides information of the population. Information on municipalities' health system (number of physicians, number of teams from the Family Health Program, among others) were extracted from the Integrated System of the Ministry of Health Information (DATASUS).

2.5 Empirical Strategy

This paper aims to assess the existence of political favoring of local allies in a specific type of intergovernmental transfer. Using data from PMM, the immediate question that I try to answer is this: the party ahead of local government matters to the results of (i) number of doctors transferred and (ii) municipal participation in the program?

Identify such effects is a challenging task. The naive comparison between municipalities with different governing parties hides some endogeneity problems. For example, public health indicators of a municipality may be correlated

with the chances of a party winning local elections. Additionally, the ideological heterogeneity of voters can be correlated with the support for such programs. Such correlations can generate biased estimates of the party's role in the indicators of interest.

2.5.1 Identification: Regression Discontinuity

To address such problems of endogeneity, I use a Regression Discontinuity Design (RD) in elections defined by a small margin of victory, an identification strategy that follows [Lee \(2008\)](#). As discussed by the author, elections won by a small margin of victory act as a lottery of municipalities for disputing parties, exploiting the fact that the party affiliation of a mayor abruptly changes depending on candidates' vote share. In other words, it becomes more likely that the results of narrow elections are determined by idiosyncratic factors and not municipal (structural) characteristics that could also affect the indicators of participation and number of PMM professionals. These narrowly determined elections are based on the margin of victory (W) of PT's candidate, which is defined as follows:

$$W_i^{PT} = \begin{cases} (V_i^{PT} - V_i^2)/V_i^T > 0, & \text{if PT's candidate was elected} \\ (V_i^{PT} - V_i^1)/V_i^T < 0, & \text{if PT's candidate was a runner-up} \end{cases}$$

where V_i^{PT} is the number of votes received by the PT's candidate in the municipality i , V_i^1 and V_i^2 are the votes received by the most voted candidate and second most voted candidate in the municipality i , respectively. V_i^T is the total valid votes cast in the municipality i . Note that W_i^{PT} is only set to municipalities where PT candidates were in 1st or 2nd places in the elections. In fact, only municipalities in which the PT candidate almost won the elections act as a good counterfactual for municipalities in which the PT candidate almost lost.

To formally characterize the empirical design, I present a framework with the link created by [Hahn, Todd e Klaauw \(2001\)](#) between the Potential Outcomes Model, developed in [Rubin \(1974\)](#), and the RD. I also discuss the underlying

assumptions necessary to the proposed identification. The review made here follows [Lee e Lemieux \(2010\)](#).

Let $Y_i(0)$ and $Y_i(1)$ be a pair of potential outcomes, where $Y_i(1)$ is the result of the municipality i when ruled by the same party of the federal government and $Y_i(0)$ when ruled by another party. I am interested in estimating the average impact of partisan alignment, that is, $E[Y_i(1) - Y_i(0)]$. However, we never observe $Y_i(1)$ and $Y_i(0)$ for a given municipality. Taking $D_i = \{0, 1\}$ as a dummy variable that defines whether the municipality i is aligned ($D_i = 1 \equiv W_i > 0$) or not ($D_i = 0 \equiv W_i < 0$), we can write the observable results as $Y_i = (1 - D_i) \cdot Y_i(0) + D_i \cdot Y_i(1)$.

The naive comparison between cities where the PT won with the ones in which the PT lost, that is, $E[Y_i(1)|D_i = 1] - E[Y_i(0)|D_i = 0]$ suffers from endogeneity problems, as already described. What the RD methodology proposes is to analyze this difference of means in the discontinuity neighborhood, that is, in the vicinity of $W_i = 0$. In that sense, the RD estimator can be defined as:

$$\tau = \lim_{\epsilon \downarrow 0} E[Y_i|W_i \leq \epsilon] - \lim_{\epsilon \uparrow 0} E[Y_i|W_i \geq \epsilon] \quad (2.5.1)$$

where τ captures the local effect of the PT winning the municipal elections on program indicators (effect of partisan alignment).

2.5.2 Estimation

There are two general approaches to estimate the average treatment effect discussed (τ). The first estimates a local linear regression restricting the sample to municipalities where $w_i \in [-h, +h]$ (local RD). The equation to be estimated is:

$$Y_i = \alpha_1 + \tau D_i + \delta X_i + \gamma Z_i + \varepsilon_i \quad (2.5.2)$$

where

$$D_i = \mathbb{1}\{W_i \geq 0\}$$

Y_i is the outcome of interest in the municipality i . D_i is a binary variable that equals 1 if PT's candidate won the election (0 otherwise), W_i is the margin of victory in the municipality i . For some specifications, covariates are added. X_i is a vector of local characteristics and Z_i represents a set of characteristics of the winning coalition in city i . Control variables are not necessary for identification of the coefficient of interest (τ), but they improve the accuracy of the estimates.

To set the value of h , I use the optimal bandwidth algorithm from Calonico-Cattaneo-Titiunik (CCT), developed in [Calonico, Cattaneo e Titiunik \(2014\)](#). I also report estimates for alternative values of h , to ensure transparency of the results.

The second approach tries to model the functional form of $E[Y_i|w_i]$ using polynomials $f(W_i)$. I use polynomials up to the second degree, following [Gelman e Imbens \(2019\)](#). The parametric regression with flexible polynomials (global RD) to be estimated is:

$$Y_i = \alpha + \tau D_i + f_1(W_i) + D_i \times f_2(W_i) + \delta X_i + \gamma Z_i + \varepsilon_i \quad (2.5.3)$$

where

$$\begin{cases} f_1(W_i) = \theta_1 W_i + \theta_2 W_i^2 \\ f_2(W_i) = \theta_3 W_i + \theta_4 W_i^2 \end{cases}$$

In addition to easing the $E[Y_i|W_i]$, I allow (by equation 2.5.3) that $E[Y_i(0)|W_i]$ and $E[Y_i(1)|W_i]$ assume distinct functional forms.

RD literature is recently converging to combine the two specifications shown (local and global RD) ([HAHN; TODD; KLAUW, 2001](#); [LEE; LEMIEUX, 2010](#)). Thus, I present results with estimates that analyze relevant subsamples (local RD) and allow nonlinearities in $E[Y_i|W_i]$ (global RD).

2.5.3 Model Assumptions and Validation Tests

RD methodology is advantageous for its milder assumptions when compared to other models. There are two key assumptions to be verified. First, it is necessary that all relevant factors beyond treatment vary smoothly close to the threshold.

Formally, this assumption proposes that both $E[\varepsilon_i(0)|w_i]$ and $E[\varepsilon_i(1)|w_i]$ are continuous on the threshold. This hypothesis is to ensure that, in fact, the cities where PT candidates lost by a small margin act as a good counterfactual of the municipalities in which they won by a small margin.

To check the plausibility of the hypothesis, I present in Table 2.5.1 RD estimates for three sets of covariates. The first set comprises of city-level demographics, the second set includes municipalities' profiles in the program^{2.5.1}, and finally the third group includes the characteristics of the candidates. Each row of the table represents a different regression, varying the outcomes of interest. Column (1) shows the coefficient from the RD estimate, Column (2) shows the respective p-value, Column (3) provides the optimal bandwidth (CCT), and Column (4) provides the number of observations in each regression.

The results from Table 2.5.1 suggest that coalitions and municipalities where PT won the elections are comparable with the ones where PT lost. In other words, the results from the table show evidence that $E[\varepsilon_i|w_i]$ is smooth around the threshold.

^{2.5.1} See Table A.2 from Appendix for details about the different municipal profiles in PMM.

Table 2.5.1 – The Impact of Political Alignment on Covariates

	Coef. (1)	P-value (2)	Bandwidth (3)	Obs. (4)
Municipal Demographics				
- Number of outpatient facilities	-52.412	(0.161)	16.0	781
- Total population in 2012 (thousands)	-128.824	(0.198)	16.8	817
- Public sector physicians per capita ($\times 1000$)	-0.668	(0.330)	13.8	713
- GDP per capita (2012)	525.380	(0.816)	14.2	726
- Number of PSF teams	-13.188	(0.294)	19.3	426
- Physicians per capita ($\times 1000$)	-1.122	(0.163)	12.5	669
- Transfers from <i>Fundo Nacional de Saúde</i>	-18.672	(0.183)	18.3	855
- Transfers from <i>Piso da Atenção Básica</i>	-2.103	(0.283)	17.5	833
- Child mortality per thousand births	0.054	(0.958)	14.1	723
- Gini Coefficient	-0.007	(0.474)	14.1	723
- Poor individuals (%)	0.311	(0.910)	12.2	657
- Individuals in households with piped water (%)	-0.701	(0.732)	14.0	722
- Urban Households (%)	-3.576	(0.312)	11.7	635
Municipalities' Profiles in the Program				
- Profile 1	-0.023	(0.179)	16.8	815
- Profile 2	-0.001	(0.984)	17.6	837
- Profile 3	-0.005	(0.729)	14.0	723
- Profile 4	-0.004	(0.960)	13.1	686
- Profile 6	0.046	(0.510)	16.3	803
Candidates' Characteristics				
- Candidate's Age'	0.062	(0.961)	15.0	763
- Candidate with College Degree	0.041	(0.565)	15.2	767
- Female Candidate	0.055	(0.178)	17.0	820

Notes: This table provides results from the analysis of the effect of an aligned candidate winning a municipal election on covariates, as a test for the smoothness of $E[\varepsilon_i(0)|w_i]$ and $E[\varepsilon_i(1)|w_i]$. Each row represents a different regression, varying the outcomes. All estimates use 1st order polynomials, triangular kernel functions, and optimal bandwidth, based on [Calonico, Cattaneo e Titiunik \(2014\)](#) (CCT). Standard-errors are clustered at the municipal level. * Significant at 10%; ** significant at 5%; *** significant at 1%.

The second assumption is that parties and candidates have inaccurate control over the number of votes they receive in elections. This assumption can not be tested directly (the margin of victory and the electoral result for a given municipality are observed once). Alternatively, we can test if the aggregate distribution of our assignment variable (in this case, the margin of victory) is

discontinuous. After all, a combination of continuous density functions is itself a continuous density function (LEE; LEMIEUX, 2010).

To check if there is manipulation of the assignment rule, Figure 2.5.1 presents the distribution of PT's margin of victory. Negative values represent municipalities in which PT's candidate lost the election (2nd place), and positive values represent cities where PT's candidate won the election and became mayor. This histogram follows McCrary (2008)^{2.5.2}. In addition to the test from McCrary (2008), I present in Table 2.5.2 a manipulation test proposed in Cattaneo, Jansson e Ma (2018), that does not require prebinning of the data and leads to size and power improvements. Both approaches suggest that there is no evidence of manipulation. In order to find a manipulation consistent with these figures, we would need that the number of rigged elections in favor of PT candidates equals the number of rigged elections in favor of opposing parties, an unlikely scenario.

Figure 2.5.1 – Distribution of Margins of Victory

Notes: This figure provides a visual test for the manipulation of assigning rule, based on McCrary (2008).

^{2.5.2} The test is a simple exercise in two stages. First, it divides the assignment variable in equally spaced groups and calculates the number of observations for each group. Then it takes the number of observations as a dependent variable in a local linear regression and plots the estimated density.

Table 2.5.2 – Manipulation test from Cattaneo, Jansson e Ma (2018)

T-statistic	P-value	Obs.
-0.1803	(0.857)	894

Notes: This table presents the results from a manipulation test proposed in Cattaneo, Jansson e Ma (2018).

2.6 Results

In this section, I present the results of the impact of political alignment on different outcomes of PMM. First, I analyze how political alignment affects the entry of local governments in the program. Second, I analyze the effects of political alignment on the distribution of doctors from PMM across participating municipalities. Then, I provide a heterogeneity analysis by assessing how the impact of political alignment varies along the four years of mayoral term, comparing cities with different levels of medical density, and cities with first and second term mayors.

2.6.1 Main Results

The main results regarding the entry of municipalities in the program are presented in Table 2.6.1. The table shows estimates of the effect of an aligned candidate winning a municipal election on the probability that the city participates in PMM. Column (1) shows OLS estimates. Column (2) provides RD estimates based on equation 2.5.3, using 2nd order polynomials in both sides of the margin of victory and full sample. Columns (3)-(6) provide RD estimates using 1st order polynomials, based on equation 2.5.3, considering different bandwidths: optimal bandwidth, with calculation based on Calonico, Cattaneo e Titiunik (2014) (column 3), 10% (column 4), 5% (column 5), e 2,5% (column 6). All RD estimates use a triangular kernel function. Standard-errors are clustered at the municipal level.

The results suggest that aligned municipalities do not participate more than non-aligned ones. We can see from Column (1) that there is a correlation between being aligned to the federal government and participating in PMM, but

as shown in Columns (2)-(6), we can not attribute this relation causally to the political alignment of local governments. Instead, municipalities with poorer health indicators and, in that sense, the more needed of PMM are more likely to be governed by PT.

Table 2.6.1 – The Impact of Political Alignment on Municipalities' Participation

	Dependent Variable: City participates in PMM					
	OLS (1)	2 nd order Polynomial (2)	CCT (3)	10% (4)	5% (5)	2,5% (6)
President's Party	0.087*** (0.023)	0.058 (0.043)	-0.004 (0.061)	-0.005 (0.069)	0.034 (0.095)	0.177 (0.129)
Observations	1,212	1,212	685	568	301	161
Bandwidth			12.9	10.0	5.0	2.5

Notes: This table provides results from the analysis of the effect of an aligned candidate winning a municipal election on the probability that the city participates in *Mais Médicos* program. Column (1) shows OLS estimates. Column (2) provides RD estimates based on equation 2.5.3, using 2nd order polynomials in both sides of the Margin of Victory and full sample. Columns (3)-(6) provide RD estimates using 1st order polynomials, based on equation 2.5.3, considering different bandwidths: optimal bandwidth, with calculation based on [Calonico, Cattaneo e Titiunik \(2014\)](#) (column 3), 10% (column 4), 5% (column 5), e 2,5% (column 6). All RD estimates use triangular kernel function. Standard-errors are clustered at the municipal level. * Significant at 10%; ** significant at 5%; *** significant at 1%.

In Table 2.6.2, I analyze the effects of an aligned candidate winning a municipal election on the number of PMM physicians transferred. Column (1) shows OLS estimates. Column (2) provides RD estimates based on equation 2.5.3, using 2nd order polynomials in both sides of the margin of victory and full sample. Columns (3)-(6) provide RD estimates using 1st order polynomials, based on equation 2.5.3, considering different bandwidths: optimal bandwidth, with calculation based on [Calonico, Cattaneo e Titiunik \(2014\)](#) (column 3), 10% (column 4), 5% (column 5), e 2,5% (column 6). All RD estimates use a triangular kernel function. Standard-errors are clustered at the municipal level.

The results from Table 2.6.2 seem to indicate that the federal government does not prioritize aligned local governments in the distribution of physicians in PMM. All coefficients are insignificant and all RD regressions show negative point estimates. This may indicate that the federal government receive a large

part of the electoral credit related to the implementation of PMM. In fact, PMM received a lot of media coverage and as a large part of the doctors in the program were foreigners, voters usually recognized when a physician was hired via PMM.

Table 2.6.2 – The Impact of Political Alignment on the Number of Transferred Physicians

	Dependent Variable: Number of Physicians from PMM					
	OLS (1)	2 nd order Polynomial (2)	CCT (3)	10% (4)	5% (5)	2,5% (6)
President's Party	1.195 (1.421)	-5.268 (4.566)	-9.278 (7.025)	-13.367 (9.032)	-17.132 (11.907)	-10.415 (18.600)
Observations	964	964	628	460	250	132
Bandwidth			15.7	10.0	5.0	2.5

Notes: This table provides results from the analysis of the effect of an aligned candidate winning a municipal election on the number of *Mais Médicos* physicians transferred during the whole mayoral term. Column (1) shows OLS estimates. Column (2) provides RD estimates based on equation 2.5.3, using 2nd order polynomials in both sides of the Margin of Victory and full sample. Columns (3)-(6) provide RD estimates using 1st order polynomials, based on equation 2.5.3, considering different bandwidths: optimal bandwidth, with calculation based on [Calonico, Cattaneo e Titiunik \(2014\)](#) (column 3), 10% (column 4), 5% (column 5), e 2,5% (column 6). All RD estimates use triangular kernel function. Standard-errors are clustered at the municipal level. * Significant at 10%; ** significant at 5%; *** significant at 1%.

In Table 2.6.3, I leverage the yearly nature of the PMM data and analyze if political alignment plays a role in the distribution of PMM physicians in the years before local elections. As [Brollo e Nannicini \(2012\)](#) find that capital transfers from the Brazilian federal government to local governments are subject to political favoring in the last two years before local elections, it may be the case with PMM as well. Again, Column (1) shows OLS estimates. Column (2) provides RD estimates based on equation 2.5.3, using 2nd order polynomials in both sides of the margin of victory and full sample. Columns (3)-(6) provide RD estimates using 1st order polynomials, based on equation 2.5.3, considering different bandwidths: optimal bandwidth, with calculation based on [Calonico, Cattaneo e Titiunik \(2014\)](#) (column 3), 10% (column 4), 5% (column 5), e 2,5% (column 6). All RD estimates use a triangular kernel function. Standard-errors are clustered at the municipal level.

The results suggest that differently from [Brollo e Nannicini \(2012\)](#) it is not the case of having political favoring associated with the electoral cycle. All estimates show similar insignificant coefficients, regardless of the variation of bandwidths.

Table 2.6.3 – The Impact of Political Alignment on the Number of Transferred Physicians (Last Two-Year)

	Dependent Variable: Number of Physicians from PMM in the Last Two-Year					
	OLS (1)	2 nd order Polynomial (2)	CCT (3)	10% (4)	5% (5)	2,5% (6)
President's Party	0.150 (0.645)	-2.523 (2.150)	-3.890 (3.211)	-5.766 (4.485)	-7.672 (6.376)	-5.998 (10.016)
Observations	964	964	666	460	250	132
Bandwidth			17.3	10.0	5.0	2.5

Notes: This table provides results from the analysis of the effect of an aligned candidate winning a municipal election on the number of *Mais Médicos* physicians transferred in the last two years of the mayoral term. Column (1) shows OLS estimates. Column (2) provides RD estimates based on equation 2.5.3, using 2nd order polynomials in both sides of the Margin of Victory and full sample. Columns (3)-(6) provide RD estimates using 1st order polynomials, based on equation 2.5.3, considering different bandwidths: optimal bandwidth, with calculation based on [Calónico, Cattaneo e Titiunik \(2014\)](#) (column 3), 10% (column 4), 5% (column 5), e 2,5% (column 6). All RD estimates use triangular kernel function. Standard-errors are clustered at the municipal level. * Significant at 10%; ** significant at 5%; *** significant at 1%.

Figure 2.6.1 – The Impact of Political Alignment on PMM Outcomes

Notes: This figure provides graphical results of the RD estimates, with outcomes from PMM: (2.6.1a) shows the effect of an aligned candidate winning a municipal election on the probability that the city participates in PMM, (2.6.1b) shows the effect of an aligned candidate winning a municipal election on the number of PMM physicians transferred during the whole mayoral term, and (2.6.1c) shows the effect of an aligned candidate winning a municipal election on the number of PMM physicians transferred in the last two-year of the mayoral term. Horizontal axis represents PT's margin of victory. In each regression, a second order polynomial is estimated at each side of the threshold. Each dot represents bin's local average. The number of bins is defined optimally, based on [Calonico, Cattaneo e Titiunik \(2015\)](#).

2.6.2 Heterogeneity: High and Low levels of Medical Density

In this part, I test whether political alignment affected in differing ways municipalities with different levels of medical density prior to PMM. Table 2.6.4 presents RD estimates with 1st order polynomials, based on equation 2.5.3, consi-

dering the optimal bandwidth, with the calculation based on [Calonico, Cattaneo e Titiunik \(2014\)](#). Columns (1)-(3) provide estimates for municipalities with high medical density, and Columns (4)-(6) provide estimates for municipalities with low medical density. These levels are defined as follows:

$$HD_i = \begin{cases} 1, & \text{if } MD_i \geq \text{median}(MD) \\ 0, & \text{if } MD_i < \text{median}(MD) \end{cases}$$

in which HD_i is a indicator of high medical density, MD_i is the medical density in the municipality i and $\text{median}(MD)$ is the median of MD .

From the analysis of Table 2.6.4 we can see that the estimates remain all insignificant, regardless of the levels of medical density. However, the point estimates suggest that the negativity of the coefficients related to the number of PMM physicians in section 2.6.1 come from municipalities with high medical density.

Table 2.6.4 – Heterogeneity: Effects of Political Alignment in Municipalities with High and Low Levels of Medical Density

	High Medical Density			Low Medical Density		
	(1)	(2)	(3)	(4)	(5)	(6)
President's Party	0.023 (0.079)	-14.787 (11.932)	-7.119 (5.632)	-0.055 (0.085)	-0.002 (1.351)	0.585 (0.579)
Observations	404	324	333	331	275	316
Bandwidth	16.7	18.0	18.7	12.7	13.0	15.0

Notes: This table analyzes the effect of an aligned candidate winning a municipal election on PMM outcomes. All RD estimates use first order polynomials, based on equation 2.5.3, considering the optimal bandwidth, with calculation based on [Calonico, Cattaneo e Titiunik \(2014\)](#). All estimates use triangular kernel function. Columns (1)-(3) present estimates for municipalities with high medical density, and Columns (4)-(6) present estimates for municipalities with low medical density. Columns (1) and (4) analyze the effects of an aligned candidate winning elections on the probability that the city participates in PMM. Columns (2) and (5) analyze the effects on the number of *Mais Médicos* physicians transferred during the whole mayoral term. Columns (3) and (6) analyze the effects on the number of *Mais Médicos* physicians transferred in the last two years of the mayoral term. Standard errors are in parenthesis and clustered at the municipal level. * Significant at 10%; ** significant at 5%; *** significant at 1%.

2.6.3 Heterogeneity: PMM in Small Cities

In this section, I analyze the effect of political alignment across “small” and “big” cities. Table 2.6.5 provides the results from this analysis and is structured as the table from section 2.6.2. Again, we can not find any statistically significant difference between these set of municipalities when it comes to political alignment in PMM. Still, it is worth mentioning that point estimates become positive when analyzing small municipalities (cities with $\leq 15,000$ inhabitants).

Table 2.6.5 – Heterogeneity: Effects of Political Alignment in Small Municipalities

	Population: $\leq 15,000$			Population: $> 15,000$		
	(1)	(2)	(3)	(4)	(5)	(6)
President’s Party	0.001 (0.094)	0.042 (0.368)	0.289 (0.233)	0.030 (0.049)	−18.048 (13.669)	−7.865 (6.248)
Observations	371	337	324	398	320	336
Bandwidth	12.9	18.3	17.5	19.6	14.8	16.3

Notes: This table analyzes the effect of an aligned candidate winning a municipal election on PMM outcomes. All RD estimates use first order polynomials, based on equation 2.5.3, considering the optimal bandwidth, with calculation based on [Calonico, Cattaneo e Titiunik \(2014\)](#). All estimates use triangular kernel function. Columns (1)-(3) present estimates for municipalities with a population of at most 15,000 inhabitants, and Columns (4)-(6) present estimates for municipalities with a population of more than 15,000 inhabitants. Columns (1) and (4) analyze the effects of an aligned candidate winning elections on the probability that the city participates in PMM. Columns (2) and (5) analyze the effects on the number of *Mais Médicos* physicians transferred during the whole mayoral term. Columns (3) and (6) analyze the effects on the number of *Mais Médicos* physicians transferred in the last two years of the mayoral term. Standard errors are in parenthesis and clustered at the municipal level. * Significant at 10%; ** significant at 5%; *** significant at 1%.

2.7 Conclusion

The literature of politically motivated transfers have brought several evidence of political favoring in the setting of intergovernmental transfers. This effect has been found either via higher levels of transfers to aligned municipalities ([GROSSMAN, 1994](#); [SOLÉ-OLLÉ](#); [SORRIBAS-NAVARRO, 2008](#); [MIGUEIS,](#)

2013) or lower levels to municipalities governed by opposition (BROLLO; NANNICINI, 2012).

To contribute to this literature, this paper analyzed whether political alignment is a factor for both the allocation of doctors and municipalities' participation in PMM. Using a methodology that explores more credibly exogenous variations with milder assumptions, I could not find evidence of political favoring. I have also shown that this null effect remains across municipalities with different levels of medical density and different population sizes. One explanation for these results is that with the "branded" nature of PMM and the wide media coverage of the program, the electoral credit of the transfer should go to the federal government and, hence, the party heading local governments would not be a critical factor for the distribution of doctors across municipalities. Of course, this paper does not exhaust the subject. Notwithstanding, it helps bringing evidence to the literature of politically motivated intergovernmental transfers to analyze a specific type of in-kind transfer.

A Additional Figures and Tables

Table A.1 – Approximate ideological distribution of Brazilian parties

Left			Center	Right		
PC do B	PT		PSDB	PL		
PSTU	PCB*	PDT	PMDB	PTB	PFL*★	PRN*
PSOL	PSB			PDC*		

Notes: Table extracted from (POWER; ZUCCO, 2009). * Non-existent parties. ★ PFL (Liberal Front Party) was renamed DEM (Democrats) in 2007 and PRN (Party of National Reconstruction) was renamed PTC (Christian Labor Party) in 2000. The names of the above parties from left to the right are **Left:** PC do B: *Partido Comunista do Brasil* (Communist Party of Brazil); PT: *Partido dos Trabalhadores* (Workers's Party) PSTU: *Partido Socialista dos Trabalhadores Unificado* (United Socialist Workers' Party); PCB: *Partido Comunista Brasileiro* (Brazilian Communist Party); PDT: *Partido Democrático Trabalhista* (Democratic Labor Party); PSOL: *Partido Socialismo e Liberdade* (Socialism and Freedom Party); PSB: *Partido Socialista Brasileiro* (Brazilian Socialist Party). **Center:** PSDB: *Partido da Social Democracia Brasileira* (Brazilian Social Democracy Party); PMDB: *Partido do Movimento Democrático Brasileiro* (Brazilian Democratic Movement Party). **Right:** PL: *Partido Liberal* (Liberal Party); PTB: *Partido Trabalhista Brasileiro* (Brazilian Labor Party); PFL: *Partido da Frente Liberal* (Liberal Front Party); PRN: *Partido da Reconstrução Nacional* (Party of National Reconstruction); PDC: *Partido Democrata Cristão* (Christian Democratic Party).

Table A.2 – Municipal profiles within the program

Profiles	Description
PROFILE 1	Areas relating to 40% of census tracts with the highest percentages of population in extreme poverty in Capitals, following Brazilian Institute of Geography and Statistics (IBGE);
PROFILE 2	Areas relating to 40% of census tracts with the highest percentages of population in extreme poverty in municipalities placed on metropolitan regions, following Brazilian Institute of Geography and Statistics (IBGE);
PROFILE 3	Areas relating to 40% of census tracts with the highest percentages of population in extreme poverty in municipalities that are between the one hundred (100) municipalities with more than 80,000 (eighty thousand) inhabitants, with the lowest levels of public revenue per capita and high social vulnerability of its inhabitants;
PROFILE 4	Municipality with 20% or more of the population living in extreme poverty, based on data from the Ministry of Social Development and Fight against Hunger (MDS), available at the website www.mds.gov.br/sagi ;
PROFILE 5	Municipality which is situated in area of operation of Special Indigenous Sanitary District (DSEI / SESA / MS);
PROFILE 6	Areas relating to 40% of census tracts with the highest percentage of population in extreme poverty of other municipalities, following Brazilian Institute of Geography and Statistics (IBGE).

3 Sua Casa, Nosso Partido? Investigando favorecimento a apoiadores políticos no Programa Minha Casa Minha Vida*

3.1 Introdução

Ao longo da última década, programas habitacionais passaram a fazer parte do conjunto de políticas públicas fomentadoras do desenvolvimento econômico. Países do chamado BRICS – Brasil, Rússia, Índia, China e África do Sul – e diversos outros, como Angola, Argentina, Colômbia, Etiópia e México lançaram políticas que subsidiam o acesso à moradia (BUCKLEY; KALLERGIS; WAINER, 2016)^{3.1.1}. Apesar da diversidade de modelos adotados, todos esses programas partem de um diagnóstico comum: os altos níveis de déficit habitacional. Estima-se que uma em cada três pessoas que vivem em cidades de países em desenvolvimento morem em favelas (ONU, 2016).

No Brasil, o Programa Minha Casa Minha Vida (PMCMV) foi lançado em 2009 e operou desde então em duas frentes principais: crédito para empresas de construção civil que apresentem projetos de moradia popular e subsídio direto do custo da moradia para beneficiários elegíveis. Entre os anos de 2009 e 2016, 4,4 milhões de moradias foram construídas, com investimento de cerca de R\$ 290 bilhões.

Há uma ampla literatura sobre os efeitos diretos e indiretos de programas de habitação. Dentre seus efeitos diretos, programas habitacionais tendem a melhorar a qualidade habitacional e a acessibilidade de seus beneficiários, (CURRIE; YELOWITZ, 2000; WOOD; TURNHAM; MILLS, 2008) além de reduzir o custo de sua habitação (JACOB; LUDWIG, 2012). Seus efeitos indiretos se relacionam à empregabilidade dos beneficiários. Em particular, Jacob e Ludwig (2012) estimaram, no contexto do programa *Section 8*, que o recebimento do *voucher*

* Com Rafael Pucci.

^{3.1.1} Ao todo, os autores identificam 16 países em desenvolvimento que lançaram programas habitacionais de larga escala.

do programa reduziu em 4% a probabilidade de se estar empregado. Chetty, Hendren e Katz (2016) analisaram efeitos do programa *Moving to Opportunity*, que sorteou a mudança de famílias de bairros com alta pobreza para bairros de baixa pobreza. Os autores estimaram que crianças beneficiadas têm um ganho de 30% em sua renda, além de uma maior probabilidade de fazer faculdade quando comparadas com crianças que permaneceram em bairros pobres.

No contexto brasileiro, alguns trabalhos estudam os efeitos do PMCMV, dentre os quais se destaca Biderman, Ramos e Hiromoto (2019). Os autores fazem um extenso relatório sobre o programa, analisando tanto aspectos qualitativos quanto quantitativos de seu desenho e de sua execução. Ressaltam o cuidado dos formuladores de política quanto à incontestabilidade dos títulos de propriedade e à boa qualidade dos padrões construtivos. Contrastam isto, todavia, com a falta de mecanismos para garantir que os novos conjuntos habitacionais fossem construídos mais próximos dos centros urbanos e, também, que fossem servidos adequadamente por infraestrutura urbana. Dentre os resultados quantitativos, demonstram que o programa não melhorou significativamente o acesso à água e, inclusive, piorou o acesso a esgotamento, ao contrário do que seria esperado. Ademais, o PMCMV contribuiu para o “espraçamento”^{3.1.2} urbano ao incentivar a construção de unidades em terrenos distantes dos centros das cidades.

Pouco se sabe, no entanto, sobre os aspectos políticos da execução de programas habitacionais. Em particular, não há ainda estudo sobre a possibilidade de se usar a distribuição de casas do PMCMV como instrumento de favorecimento político. Embora haja instruções para a realização de sorteios das casas construídas pelo programa, não há efetivamente fiscalização sistemática para garantir que estes sejam feitos, ou sejam feitos publicamente. Por este motivo, ao longo da duração do programa, surgiram denúncias do Ministério Público Federal e da mídia sobre a falta de transparência na seleção de beneficiários^{3.1.3} ou favorecimento de membros de grupos partidários^{3.1.4}. Este artigo procura

^{3.1.2} Processo em que cidades se expandem com baixa densidade nas periferias, frequentemente deixando vazios urbanos entre bairros.

^{3.1.3} Fonte: “Programa Minha Casa, Minha Vida - Suspensão da seleção de beneficiários, em razão da existência de irregularidades na execução do programa” - Ministério Público Federal.

^{3.1.4} Fonte: “Militância vira critério para receber moradia do Minha Casa Minha Vida”, Estadão,

cobrir essa lacuna, propondo uma medida quantitativa de conexão política dos beneficiários e testando se há favorecimento na distribuição de casas executada pelas prefeituras.

À semelhança de [Barbosa e Ferreira \(2019\)](#) e [Brollo, Forquesato e Gozzi \(2017\)](#), que estudam favorecimento de membros de partidos em cargos públicos, usamos um estimador de Regressão em Descontinuidade para testar se apoiadores de partidos que venceram eleições municipais estão sobre-representados dentre os beneficiários do PMCMV. De modo a fazer uma análise abrangente, testamos, também, uma variedade de heterogeneidades, separando os apoiadores entre membros de partidos e doadores de campanha ([TESO; COLONNELLI; PREM, 2018](#)); e separando os beneficiários entre as linhas de produto do PMCMV. Comparamos também os efeitos de vitória da coligação sobre apoiadores associados ao partido do líder de chapa e sobre apoiadores associados a todos os partidos da coligação.

Em todos os testes, não encontramos evidências que corroborem a hipótese de favorecimento político no programa. Embora os resultados nulos não permitam que descartemos completamente a existência desse favorecimento, nossas análises sugerem que não há uso de apoio político explícito como métrica para beneficiar alguns candidatos ao PMCMV em detrimento de outros.

Interpretamos a ausência de evidências, apesar das denúncias do MPF e da mídia, a partir de duas conjecturas. Em primeiro lugar, uma vez que beneficiários recebem suas casas, não há risco de perda se, eventualmente, deixarem de apoiar o prefeito que os beneficiou. Isto difere nosso contexto daquele de [Barbosa e Ferreira \(2019\)](#), [Teso, Colonnelli e Prem \(2018\)](#) e [Brollo, Forquesato e Gozzi \(2017\)](#), pois, neste caso, funcionários públicos não-concursados estão à mercê da punição de seus padrinhos políticos. Em segundo lugar, há outros canais pelos quais o favorecimento poderia ser operado, além de apoio político explícito. Por exemplo, prefeitos poderiam favorecer amigos e familiares, diretos ou indiretos, no momento da seleção.

O resto do artigo se organiza da seguinte forma. Na Seção 3.2, explica-

mos o contexto institucional do Programa Minha Casa Minha Vida, bem como da política local no Brasil. Na Seção 3.3, apresentamos os conjuntos de dados de beneficiários do PMCMV, membros de partidos, doadores de campanha e eleições municipais; e descrevemos como juntamos as informações presentes em cada um em uma base única. Na Seção 3.4, apresentamos nossa estratégia empírica de Regressão em Descontinuidade. Na Seção 3.5, apresentamos os principais resultados e os comentamos. Finalmente, a Seção 3.6 apresenta nossas conclusões.

3.2 Contexto Institucional

3.2.1 Programa Minha Casa Minha Vida

O Programa Minha Casa Minha Vida (PMCMV) foi inaugurado em 2009 com o objetivo de tanto enfrentar o déficit habitacional brasileiro quanto reaquecer a economia após o choque negativo da crise financeira de 2008. Em oito anos de existência, entre 2009 e 2016, o programa construiu cerca de 4.4 milhões de unidades habitacionais a um custo de mais de R\$290 bilhões. Tal esforço na produção habitacional se deu após um longo período de reduzida intervenção federal nesse mercado, desde o fim do programa de subsídios vigente entre 1964 e 1986, o qual obteve resultados semelhantes em termos de construção de unidades^{3.2.1}.

Desde seu início, ao longo desses oito anos, o PMCMV foi exclusivamente direcionado à compra e venda de imóveis, deixando de lado, portanto, o mercado de aluguéis. Nesse espírito, em sua concepção, o programa foi dividido em três grupos, denominados “faixas”, de modo a alcançar diferentes níveis de renda da população. A Faixa 1 é aquela direcionada a quem tem pouquíssimos recursos para comprar um imóvel e que, portanto, recebe o maior volume de subsídios do governo federal. Aproximadamente, 1.7 milhão de unidades foram destinadas a famílias enquadradas nessa faixa, para as quais o subsídio pode chegar a 90%

^{3.2.1} O Banco Nacional de Habitação (BNH), programa criado em 1964, subsidiava o financiamento da casa própria para famílias de classes baixa e média. O programa financiou a construção de 4,3 milhões de unidades habitacionais entre 1964 e 1986 (BONDUKI, 2019).

do valor do imóvel. O restante das unidades foi destinado às Faixas 2 e 3, com subsídios substancialmente menores, porém ainda com acesso a crédito mais barato para o financiamento.

Outra diferença substancial entre as faixas está na maneira como políticos, construtoras e beneficiários do programa se relacionam. Na Faixa 1, as empresas construtoras têm, tipicamente, o papel de buscar o operador financeiro do programa – a Caixa Econômica Federal (CEF) – e apresentar projetos de habitação popular que se enquadrem nos limites desse grupo. Os candidatos ao benefício, por sua vez, esperam ser alocados aos empreendimentos de acordo com critérios de escolha das prefeituras. Além disto, os municípios também escolhem se querem participar do programa, bem como se concederão desoneração fiscal ou doarão terrenos às construtoras. Este mecanismo confere ao poder local um grau de liberdade relativamente amplo para influenciar os resultados do programa (BIDERMAN; RAMOS; HIROMOTO, 2019).

Nas Faixas 2 e 3, alternativamente, os beneficiários têm papel mais ativo que os outros atores: podem escolher, praticamente, qualquer imóvel que se enquadre nos limites de valores estabelecidos e solicitar subsídio junto à CEF. Neste caso, o poder discricionário das prefeituras e do governo federal na alocação de benefícios a indivíduos e empresas é consideravelmente menor. Por conta do reduzido papel do poder político local nestas outras faixas, focaremos na Faixa 1 para verificar a hipótese de favorecimento de beneficiários politicamente conectados.

Estamos, portanto, interessados na relação existente entre governos municipais e candidatos ao benefício do programa. Em princípio, prefeitos deveriam cadastrar e selecionar beneficiários de forma transparente e imparcial, havendo, inclusive, orientação para que se realizem sorteios no caso em que a demanda por habitação do PMCMV supere a oferta^{3.2.2}. No entanto, nem sempre o procedimento de seleção é realizado na forma como foi idealizado^{3.2.3}, abrindo, em

^{3.2.2} Como exemplo, citam-se algumas das portarias editadas pelo Ministério das Cidades: Portaria 140 de 05/04/2010; Portaria 610 de 26/12/2011; Portaria 595 de 18/12/2013.

^{3.2.3} Dentre exemplos, Ministério Público Federal pede suspensão de seleção e indicação de candidatos no Acre por falta de transparência nessas decisões (Recomendação Número 021/2016 – PR/AC/5º Ofício - Inquérito Civil nº 1.10.000.000340/2014-42, disponível

teoria, a possibilidade para que prefeitos e seus aliados políticos possam, por exemplo, distribuir casas a grupos ou indivíduos com quem tenham proximidade, como membros de partido, apoiadores, parentes ou amigos^{3.2.4}. Ademais, há algumas exceções à realização de sorteios que poderiam ser usadas de forma imprópria, como a priorização de moradores de áreas de risco na fila do cadastro do PMCMV.

Caso ocorra esse direcionamento de casas a beneficiários que tenham alguma conexão com políticos locais, distorce-se o objetivo original do programa, qual seja, corrigir falhas no mercado de crédito e habitação que impedem os mais pobres de obter acesso a moradias. Os recursos, alternativamente, passam a ser destinados a indivíduos e grupos que investiram mais em relações diretas com o poder local.

3.2.2 Política Local no Brasil

O Brasil é uma federação que possui um dos sistemas mais descentralizados de provisão de bens públicos do mundo (FERRAZ; FINAN, 2011). Com três níveis de governo e arrecadação de tributos feita majoritariamente pelo Governo Federal e Governos Estaduais, o Brasil equaciona esse distanciamento entre fonte e destino de recursos com altos níveis de transferência intergovernamental. Em 2014, por exemplo, aproximadamente R\$ 140 bilhões^{3.2.5} foram transferidos do governo federal para governos municipais, correspondendo, em média, a 85% dos recursos municipais. Em contrapartida, a arrecadação local representa apenas 6% dos recursos disponíveis para a provisão de bens e serviços públicos^{3.2.6} (BARBOSA; FERREIRA, 2019).

em <http://www.mpf.mp.br/ac/atos-e-publicacoes/recomendacoes/programa-minha-casa-minha-vida-caixa-e-bb/view>)

^{3.2.4} Como exemplo, há suspeitas de militantes favorecidos de acordo com sua dedicação ao partido, como noticiado em “Militância vira critério para receber moradia do Minha Casa Minha Vida”, Estadão, 28 de Setembro de 2013.

^{3.2.5} Dados do Tesouro Nacional. Disponível em: <https://www.tesourotransparente.gov.br/visualizacao/painel-das-transferencias-intergovernamentais>.

^{3.2.6} Os municípios brasileiros são responsáveis pela arrecadação de tributos sobre propriedade urbana (Imposto Predial e Territorial Urbano – IPTU) e sobre valor adicionado de serviços (Imposto Sobre Serviços – ISS), além de taxas.

O território brasileiro é dividido em 5.570 municípios, que são submetidos a eleições simultâneas para prefeitos e vereadores a cada 4 anos. Eleições para o governo federal e governos estaduais ocorrem também a cada 4 anos, com 2 anos de diferença das eleições municipais. Para cidades com menos de 200.000 eleitores, prefeitos são eleitos com base num sistema majoritário uninominal. Para cidades com 200.000 ou mais eleitores registrados, há um segundo turno caso nenhum candidato obtenha mais que 50% dos votos. Desde 1998, prefeitos eleitos estão sujeitos ao limite de dois mandatos consecutivos. Para que tenha um terceiro mandato, o candidato reeleito deve se ausentar durante uma legislatura. Além disso, para se candidatar a qualquer cargo eletivo, é preciso estar filiado a um partido político.

O sistema político brasileiro é organizado através de um sistema multipartidário e possui 35 partidos registrados^{3.2.7}. Segundo a Constituição brasileira, partidos precisam ser nacionais e ter um quantitativo mínimo de membros, que corresponde a 0,5% do total de votos para a última eleição nacional. Além disso, seus filiados precisam estar distribuídos em pelo menos um terço das 27 Unidades da Federação. Qualquer eleitor registrado pode se filiar a um partido político e precisa fazê-lo se pretende ser candidato a cargo eletivo. Os partidos têm liberdade na definição de critérios para a formação e definição de candidatos, além de eventuais compromissos de seus membros. Nesse sentido, membros filiados aos partidos que disputam acesso ao governo local fazem parte do núcleo de apoiadores que podem ser favorecidos pelo prefeito.

Segundo dados do Tribunal Superior Eleitoral, havia, em 2012 no Brasil, mais de 15 milhões de filiados a partidos políticos, o que corresponde a aproximadamente 11% do universo de eleitores registrados. Em termos de número de filiados, os partidos de maior relevância são o Movimento Democrático Brasileiro (MDB)^{3.2.8}, o Partido dos Trabalhadores (PT), o Partido Progressista (PP) e o Partido da Social Democracia Brasileira (PSDB). Juntos eles detêm 44% de todos os filiados no Brasil^{3.2.9} e elegeram, em 2012, prefeitos em 50% dos municípios

^{3.2.7} Disponível em: <http://www.tse.jus.br/partidos/partidos-politicos/registrados-no-tse>.

^{3.2.8} Anteriormente, Partido do Movimento Democrático Brasileiro (PMDB).

^{3.2.9} O MDB tinha, em dezembro de 2012, 2.356.104 filiados (15.6%), o PT tinha 1.551.626 (10.3%), o PP tinha 1.415.451 (9.4%) e o PSDB tinha 1.355.877 (9%).

brasileiros.

Além de filiados aos partidos políticos, um segundo conjunto de apoiadores que podem ser favorecidos com acesso ao PMCMV são os doadores individuais de campanha nas eleições locais. Pessoas físicas podem doar até 10% de sua renda anual bruta a candidatos que disputam cargos eletivos, e, em 2012, contribuições de pessoas físicas representaram 26% do total de recursos recebidos pelos candidatos a prefeito.

3.3 Bases de Dados e Estatísticas Descritivas

Esta seção descreve os dados utilizados na pesquisa e suas respectivas fontes. São utilizadas três bases de dados principais, além de bases auxiliares.

3.3.1 Beneficiários do Programa Minha Casa Minha Vida

A lista de beneficiários do programa Minha Casa Minha Vida foi obtida junto à Caixa Econômica Federal, que mantém um cadastro de todos os indivíduos enquadrados na Faixa 1, com informações como nome, CPF, data de assinatura do contrato, renda mensal declarada, endereço do imóvel, código identificador do empreendimento e tipo de financiamento. Esta última classificação é especialmente importante, pois apenas o financiamento feito via Fundo de Arrendamento Residencial (FAR) possui a estrutura de incentivos que descrevemos anteriormente, em que prefeituras alocam candidatos a casas previamente construídas. A modalidade "Rural", por sua vez, destina-se a indivíduos que pedem financiamento diretamente para construir ou reformar suas casas; ao passo que recursos do Fundo de Desenvolvimento Social (FDS) são destinados a entidades organizadas que elaboram um projeto próprio e o submetem à aprovação da Caixa Econômica Federal. A Figura 3.3.1 mostra a alocação de beneficiários no período compreendido entre 2009 e 2016, bem como a participação de cada modalidade de financiamento.

Figura 3.3.1 – Número de beneficiários da Faixa 1 do Programa Minha Casa Minha Vida entre 2009 e 2016 (em milhares)

Notas: Essa figura apresenta a distribuição de beneficiários ao longo dos anos de 2009 a 2016. O ano em que o beneficiário é computado é definido a partir da data de assinatura da obtenção de propriedade.

O primeiro aspecto a se notar é que, como o programa começou em 2009 e houve uma demora natural entre a contratação dos empreendimentos e sua conclusão^{3.3.1}, houve um número bastante pequeno de beneficiários nos dois primeiros anos, se comparado com o restante da série de tempo. Assim, antecipa-se que a maior parte da variação nos dados virá do ciclo eleitoral municipal compreendido entre 2012 e 2016, uma vez que aí se concentram mais de 85% dos contratos assinados por novos beneficiários.

Além disso, notam-se as quedas sucessivas em 2015 e 2016, provavel-

^{3.3.1} A Caixa Econômica Federal estipula um prazo de conclusão da obra que varia entre 12 e 24 meses a partir da assinatura do contrato com a construtora.

mente vinculadas à desaceleração e recessão econômicas iniciadas em 2014 e ao impeachment da presidente Dilma Rouseff (PT), para quem o PMCMV foi uma das principais bandeiras eleitorais.

3.3.2 Dados Eleitorais

Os microdados das eleições municipais de 2008 e 2012 foram obtidos a partir do Repositório de Dados Eleitorais do Tribunal Superior Eleitoral (TSE). O TSE disponibiliza informações sobre eleições no nível do candidato, contendo seus respectivos partidos, coligações, número de votos obtidos e características demográficas, como idade, sexo, nível educacional, patrimônio declarado e ocupação. Na Tabela 3.3.1 são apresentadas algumas estatísticas descritivas dos dados eleitorais no nível município-eleição. Após retirar da base de dados candidatos que tiveram sua chapa impugnada e eleições que foram anuladas, temos um painel balanceado de 5.545 municípios e seus respectivos resultados eleitorais em 2008 e 2012.

Tabela 3.3.1 – Estatísticas Descritivas dos Dados Eleitorais

	Média	Desvio Padrão	Min.	Mediana	Max.	Obs.
Número de Candidatos	2.83	1.16	1.00	3.00	12.00	11,090
Número Médio de Partidos em Cada Coligação	4.54	2.01	1.00	4.33	15.00	11,090
Proporção de Votos da Primeira Coligação (%)	56.26	13.60	23.30	53.80	100.00	11,090
Proporção de Votos da Segunda Coligação (%)	39.04	8.83	0.02	41.15	50.00	10,613
Proporção de Votos da Terceira Coligação (%)	12.17	9.44	0.02	10.13	33.32	4,911
Prefeito Reeleito (%)	31.53	46.47	0.00	0.00	100.00	11,090
Partido Reeleito (%)	33.58	47.23	0.00	0.00	100.00	11,089
Há Prefeito Incumbente Participando (%)	47.16	49.92	0.00	0.00	100.00	11,090
Há Partido Incumbente Participando (%)	59.23	49.14	0.00	100.00	100.00	11,090

Notas: Essa tabela apresenta estatísticas descritivas das eleições de 2008 e 2012. Todas as variáveis são apresentadas no nível município-ano.

3.3.3 Dados de Apoiadores

Além dos dados de resultados eleitorais, o TSE disponibiliza em seu repositório informações sobre dois conjuntos de apoiadores dos candidatos a prefeito, que são utilizados nesse trabalho: membros filiados a partidos políticos e doadores individuais de campanha nas eleições municipais.

O TSE mantém informações no nível individual de todos os filiados a partido político no Brasil. Através da plataforma FiliaWeb, registram-se informações de filiação duas vezes ao ano (abril e outubro), que são enviadas pelos próprios partidos. Para cada partido, é possível identificar o título de eleitor de seus membros, nome completo, município de registro e data de filiação e eventual data de cancelamento do registro. A partir desses dados, é possível identificar todos os indivíduos filiados a partidos políticos por município e ano.

Os dados de financiamento de campanha também são disponibilizados pelo TSE, com informações no nível do doador. Todos os candidatos são obrigados a prestar contas de suas campanhas e enviar aos Tribunais Regionais Eleitorais (TREs) informações detalhadas de todas as contribuições recebidas pelo candidato, pelo comitê local de campanha e pelos diretórios partidários. Os dados contêm, para cada doação, o nome completo do doador, seu CPF, e o candidato, comitê ou diretório para qual foi feita a doação. A partir desses dados, 490.991 indivíduos fizeram contribuições às campanhas eleitorais de 2008 e 2012. A Tabela 3.3.2 apresenta algumas estatísticas descritivas dos dois grupos de apoiadores no nível município-ano.

Tabela 3.3.2 – Estatísticas Descritivas dos Apoiadores

	Média	Desvio Padrão	Min.	Mediana	Max.	Obs.
Painel A: Membros de Partido						
- Número de Partidos	19.59	6.77	4.00	19.00	36.00	50,130
- Número de Membros Filiados	2,661.88	9,944.83	59.00	1,238.00	476,935.00	50,130
Painel B: Doadores às Campanhas						
- Número de Partidos	3.32	2.09	1.00	3.00	27.00	11,066
- Número de Doadores	50.20	80.10	1.00	30.00	2,360.00	11,066
- Valor Doador	3,016.06	12,217.47	0.00	1,325.68	1,982,845.10	564,822

Notas: Essa tabela apresenta estatísticas descritivas no nível do município para membros filiados a partidos políticos (Painel A) e doadores de campanha nas eleições de 2008 e 2012 (Painel B) analisados neste artigo. Todas as estatísticas estão no nível município-ano, com exceção da variável “Valor Doador”, no Painel B, que está no nível doador-ano. O Painel A compreende informações de filiados para o período entre 2008 e 2016.

3.3.4 Base Final e Descritivas

Tendo em mãos as informações sobre beneficiários, apoiadores e eleições municipais, procedemos à junção dessas bases.

O primeiro desafio é encontrar, na base de filiação partidária do Tribunal Superior Eleitoral, os beneficiários presentes na base do MCMV. Como aquela não possui CPF dos filiados, temos de localizar corretamente os beneficiários que pertencem a partidos políticos sem um identificador único. Para isso, usamos o nome completo dos indivíduos e fazemos a união das bases *por município*, de modo a reduzir o número de potenciais homônimos para cada nome^{3.3.2}. Ao juntar essas bases no período compreendido entre 2008 e 2016, encontramos 100,470 pares beneficiário-filiação distribuídos entre partidos de acordo com a Figura 3.3.2. Dentre esses pares identificados, há 94,216 beneficiários únicos^{3.3.3}. Parte dos indivíduos, portanto, trocou de partido durante o período observado. Não exploramos, no entanto, essas mudanças neste artigo, pois usamos apenas o partido ao qual o beneficiário pertencia no momento em que recebeu a casa.

^{3.3.2} Dentro da base de beneficiários, aproximadamente 0.7% dos indivíduos possuem os mesmos nome e município de residência simultaneamente. Removemos essas observações duplicadas aleatoriamente. Na base de filiados, a frequência de homônimos em um mesmo município é de 1.9%. Ao executar a junção das bases, atribuímos beneficiários aleatoriamente a um desses homônimos e excluimos as duplicatas restantes.

^{3.3.3} Dentre os quais 75,043 foram beneficiados via financiamento do FAR

Figura 3.3.2 – Número de beneficiários da Faixa 1 do Programa Minha Casa Minha Vida entre 2009 e 2016, por partido e modalidade de financiamento

Notas: Essa figura apresenta a distribuição de beneficiários do PMCMV que são filiados a partidos políticos entre os anos de 2009 a 2016.

Além dos dados de filiação partidária, rastreamos apoiadores usando informações sobre doação de campanha nas eleições municipais de 2008 e 2012. Esta tarefa é significativamente mais simples do que a anterior, haja vista que tanto doadores quanto beneficiários possuem um identificador único, o Cadastro de Pessoa Física (CPF). Desta forma, ao conectarmos ambas as bases, obtemos a distribuição de beneficiários do MCMV de acordo com os partidos aos quais doaram dinheiro em 2008 e 2012, ilustrada pela Figura 3.3.3.

Figura 3.3.3 – Número de beneficiários da Faixa 1 do Programa Minha Casa Minha Vida entre 2009 e 2016, por partido ao qual doaram e modalidade de financiamento

Notas: Essa figura apresenta a distribuição de beneficiários do PMCMV que doaram a campanhas de candidatos a prefeito nas eleições de 2008 e 2012.

Ao todo, 1,382 beneficiários do MCMV doaram a campanhas eleitorais municipais nos anos de 2008 e 2012, dentre os quais 998 receberam o benefício via FAR. Além disso, do total de beneficiários-doadores, apenas 384 estavam filiados a algum partido político no momento em que receberam suas casas. Finalmente, de forma geral, os dez primeiros partidos em cada distribuição são os mesmos, à exceção do PPS e do PRB, que não estão entre os dez mais representados na distribuição de membros e doadores respectivamente.

3.4 Estratégia Empírica

Nesta seção, discutimos a estratégia empírica utilizada em nossa análise e apresentamos nosso estimador do efeito de se estar conectado politicamente com a coligação vencedora sobre o acesso a moradias populares do PMCMV. Como discutimos na seção 3.2.1, prefeitos são responsáveis por, dentre outras coisas, definir o critério de seleção de beneficiários do PMCMV em seus respectivos municípios. Tal responsabilidade abre um possível canal para favorecimento de apoiadores. Em particular, o critério de seleção pode ser definido de tal forma que filiados aos partidos da coligação do prefeito e financiadores individuais de campanha sejam favorecidos na obtenção de unidades habitacionais.

Para uma determinada eleição num município, o experimento ideal para nosso problema seria que tivéssemos uma espécie de sorteio de conexões políticas entre os indivíduos. Nesse caso, bastaria acompanhar o acesso a moradias do PMCMV de indivíduos conectados à coligação vencedora antes e depois das eleições municipais para termos uma estimativa crível. Como a escolha de que coligação apoiar numa eleição não é aleatória, definimos um grupo contrafactual de apoiadores para cada eleição municipal, acompanhando o acesso a moradias do PMCMV de apoiadores da coligação perdedora. Dessa forma, é possível aproximarmos o experimento ideal comparando o acesso a moradias do PMCMV de apoiadores da coligação vencedora (grupo de tratamento) com o acesso de apoiadores da coligação perdedora (grupo de controle).

A definição de qual partido vencerá a eleição tampouco é aleatória. É de se imaginar que o partido vencedor tenha apoiadores mais ativos e que sejam mais engajados, inclusive no acesso a programas de moradia popular. Para lidar com esse problema, focamos em eleições em que a margem de vitória seja suficientemente pequena, de forma que a definição do conjunto de apoiadores conectados com o prefeito seja aleatória.

Para formalizar tal relação, suponha que um partido político p lance candidato a prefeito no município m em 2012 e receba um percentual de votos igual a v_{pm} na eleição. Seja d_{pm} uma variável que indique quando o candidato do partido p recebeu a maior parte dos votos no município m , isto é $d_{pm} =$

$\mathbb{1}\{v_{pm} > v_{p'm}\} \forall p' \neq p$ e, portanto, ganhou a eleição. Sendo ainda y_{pm} uma variável de interesse associada aos beneficiários do PMCMV que são apoiadores da coligação do partido p ^{3.4.1}, podemos escrever y_{pm} como:

$$y_{pm} = d_{pm}\tau + \epsilon_{pm} \quad (3.4.1)$$

em que τ representa o efeito de o partido p ganhar as eleições no município m e ϵ_{pm} representa os demais determinantes da variável de interesse y_{pm} . Estimar o coeficiente τ através de uma simples regressão linear, entretanto, nos traria estimativas enviesadas, uma vez que $E[\epsilon_{pm}d_{pm}] \neq 0$ ^{3.4.2}. Uma estratégia para lidar com esse tipo de viés é a de estimar tal equação para eleições definidas por uma margem pequena de votos, de forma que a definição do partido vencedor seja quase aleatória e se aproxime de um experimento natural (LEE, 2008). A Regressão em Descontinuidade (RD) nos permite obter estimativas críveis do efeito que o partido vencedor tem sobre o benefício obtido por seus apoiadores. Ao comparar indicadores de interesse associados a indivíduos que apoiam o partido que quase perdeu a eleição (grupo de tratamento) com indicadores do partido que quase venceu (grupo de controle), obtemos o efeito causal da eleição do prefeito sobre o favorecimento de apoiadores.

Assumindo que $E[\epsilon_{pm}|v_{pm}]$ é contínuo, conseguimos obter valores aproximados dessa esperança condicional para cada v_{pm} utilizando polinômios flexíveis de ordem g , $F_g(v_{pm})$. Sob tal hipótese, reescrevemos a equação 3.4.1 como:

$$y_{pm} = d_{pm}\tau + F_g(v_{pm}) + \epsilon'_{pm} \quad (3.4.2)$$

em que ϵ'_{pm} é assintoticamente não correlacionado com v_{pm} . O próximo passo para aproveitarmos as diferentes fontes de variação de nossos dados é adicionar à equação 3.4.2 uma dimensão t , que admite a existência de mais de

^{3.4.1} Por exemplo, o total de beneficiários filiados aos partidos da coligação ou o número de unidades que foram distribuídas a esses filiados.

^{3.4.2} Por exemplo, indivíduos filiados a partidos políticos podem ser mais engajados e interessados nos diferentes programas governamentais disponíveis. Ainda, a eleição do prefeito por um partido está correlacionada com a quantidade de filiados ao mesmo partido na cidade.

um ciclo eleitoral:

$$y_{pmt} = d_{pmt}\tau + F_g(v_{pmt}) + \epsilon'_{pmt} \quad (3.4.3)$$

Estimamos τ consistentemente sob a especificação 3.4.3 utilizando algoritmo de Calonico-Cattaneo-Titiunik (CCT) para definição de banda ótima (*optimal bandwidth*), com base em [Calonico, Cattaneo e Titiunik \(2014\)](#).

3.5 Resultados

3.5.1 Validade das Hipóteses do Modelo

O modelo de RD que utilizamos para estimar o efeito causal de uma coligação ganhar a eleição municipal sobre o número de beneficiários apoiadores depende de duas condições para que seja válido. Primeiro, é preciso garantir que não há manipulação das eleições. Em outras palavras, é preciso que, em eleições acirradas, ambas as coligações tenham iguais chances de ganhar. Uma forma de investigar a existência de manipulação é checar a densidade de observações em ambos os lados da descontinuidade ([MCCRARY, 2008](#)). Em nosso caso, essa condição é satisfeita trivialmente, uma vez que há, para cada município, uma coligação vencedora e uma perdedora. De fato, a densidade é simétrica, como pode ser visualizado na Figura 3.5.1.

Figura 3.5.1 – Distribuição das Margens de Vitória

Notas: Essa figura apresenta um teste visual de manipulação de regra, baseado em [McCrory \(2008\)](#).

A segunda condição necessária para a validade do modelo é que características das coligações não mudem abruptamente na descontinuidade. Para investigar a validade dessa hipótese, estimamos o coeficiente τ da Equação 3.4.3 para diferentes covariadas. Os resultados são apresentados na Tabela 3.5.1 e sugerem que as coligações são de fato comparáveis.

Tabela 3.5.1 – Covariadas no nível coligação-município-ciclo eleitoral de 1º e 2º colocados em eleições de 2008 e 2012

	<i>Bandwidth</i>	Coef.	Erro Padrão	P-valor	Obs.
Renda dos beneficiários (2009 R\$)	15	4.28	19.53	0.83	1,466
Afiliados no município	14	-187.00	177.45	0.29	6,545
Proporção de afiliados na população	17	0.06	0.12	0.63	7,217
Doadores no município	16	0.04	3.24	0.99	7,103
Proporção de doadores na população	15	0.00	0.03	0.94	6,608
Doações totais (2009 R\$)	17	-209.74	6,156.58	0.97	7,365

Notas: Esta tabela analisa diferenças (Coef.) nas covariadas entre coligações que ganharam/perderam as eleições por margens inferiores à definida pela banda ótima (*Bandwidth*, em %). A banda ótima foi calculada a partir de [Calonico, Cattaneo e Titiunik \(2014\)](#) com polinômio de ordem 1 (linear). Covariadas estão no nível coligação-município-eleição.

3.5.2 Resultados Principais

Nesta seção, apresentamos os principais resultados de nosso artigo. A Tabela 3.5.2 contém nossas principais estimativas do efeito de ganhar a eleição sobre o acesso de apoiadores às moradias populares do PMCMV. A nossa base de dados contém, para cada município e mandato, duas observações, sendo uma para apoiadores dos partidos políticos da coligação vencedora e uma para apoiadores da coligação perdedora. A variável dependente é o número de apoiadores (membros filiados e doadores de campanha) de cada coligação que são beneficiários do PMCMV em algum ano entre 2009 e 2016. O cálculo do número de apoiadores é feito levando em conta somente os beneficiários que obtiveram acesso à moradia ao longo do mandato da coligação eleita^{3.5.1}. A Coluna (1) apresenta estimativas de MQO, baseadas na equação 3.4.1. A Coluna (2) mostra estimativas de RDD baseadas na equação 3.4.3, utilizando um polinômio de 2º grau em ambos os lados da margem de vitória e amostra completa. As Colunas (3)-(6) mostram estimativas de RDD com polinômios de 1º grau, baseadas na equação 3.4.3, considerando diferentes *bandwidths*: banda ótima calculada a partir de [Calonico, Cattaneo e Titiunik \(2014\)](#) (coluna 3), 10% (coluna 4), 5% (coluna 5), e 2,5% (coluna 6).

^{3.5.1} A amostra em questão compreende o período de dois ciclos eleitorais e, portanto, dois mandatos: 2009-2012 e 2013-2016.

Os resultados da Tabela 3.5.2 sugerem que coligações vencedoras das eleições municipais não privilegiam seus apoiadores via acesso a moradias do PMCMV. Pela análise da Coluna (1), vemos que ganhar a eleição é correlacionado com o maior acesso a moradias por parte de apoiadores. Ao analisarmos as colunas seguintes, notamos que as estimativas causais de RDD do modelo 3.4.3 não nos permitem afirmar que há favorecimento político na distribuição de moradias. Em particular, em nossa especificação preferida (coluna 3), a estimativa pontual é levemente negativa, apesar de estatisticamente insignificante.

Tabela 3.5.2 – Efeito de Ganhar a Eleição Municipal sobre o Número de Apoiadores Beneficiários do PMCMV

	Número de apoiadores da coligação que são beneficiários					
	MQO (1)	Polinômio de 2º Grau (2)	CCT (3)	10% (4)	5% (5)	2,5% (6)
Coligação eleita	2.191*** (0.589)	-1.207 (1.139)	-0.761 (1.663)	-1.526 (2.254)	-2.199 (3.483)	-1.908 (4.407)
Observações	7,394	7,394	4,914	3,582	1,894	924
<i>Bandwidth</i>			15.8	10.0	5.0	2.5

Notas: Essa tabela analisa o efeito da coligação vencer uma eleição municipal sobre o número de apoiadores da coligação que são beneficiários do Programa Minha Casa Minha Vida. A Coluna (1) mostra estimativas de MQO, baseadas na equação 3.4.1. A Coluna (2) mostra estimativas de RDD baseadas na equação 3.4.3, utilizando um polinômio de 2º grau em ambos os lados da margem de vitória e amostra completa. As Colunas (3)-(6) mostram estimativas de RDD com polinômios de 1º grau, baseadas na equação 3.4.3, considerando diferentes *bandwidths*: banda ótima, calculada a partir de [Calonico, Cattaneo e Titiunik \(2014\)](#) (coluna 3), 10% (coluna 4), 5% (coluna 5), e 2,5% (coluna 6). Todas as estimativas de RDD utilizam *kernel* triangular. Erros-padrão estão entre parênteses e são agrupados no nível do município (*clustered standard errors*). * Significante a 10%; ** significativo a 5%; *** significativo a 1%.

A seguir, a Tabela 3.5.3 apresenta estimativas do efeito de ganhar eleição municipal sobre o número de apoiadores que obtiveram acesso à moradia via Fundo de Arrendamento Residencial (FAR). A organização das especificações utilizadas nas diferentes colunas é similar à da Tabela 3.5.2. A análise da alocação de moradias via FAR é de nosso particular interesse, como salientado na seção 3.3.1, pois nesse produto as prefeituras são responsáveis por alocar candidatos ao benefício a casas previamente construídas. De todo modo, não é possível observar favorecimento político. Apesar de a estimativa de MQO apresentar

novamente correlação positiva e significativa, nossas estimativas causais de RDD são todas estatisticamente indistinguíveis de zero.

Tabela 3.5.3 – Efeito de Ganhar a Eleição Municipal sobre o Número de Apoiadores Beneficiários do PMCMV via FAR

	Número de apoiadores da coligação que são beneficiários via FAR					
	MQO (1)	Polinômio de 2º Grau (2)	CCT (3)	10% (4)	5% (5)	2,5% (6)
Coligação eleita	1.861*** (0.584)	-1.121 (1.112)	-0.737 (1.582)	-1.522 (2.170)	-2.027 (3.344)	-1.889 (4.227)
Observações	7,394	7,394	4,964	3,582	1,894	924
<i>Bandwidth</i>			16.1	10.0	5.0	2.5

Notas: Essa tabela analisa o efeito da coligação vencer uma eleição municipal sobre o número de apoiadores da coligação que são beneficiários do Programa Minha Casa Minha Vida via Fundo de Arrendamento Residencial (FAR). A Coluna (1) mostra estimativas de MQO, baseadas na equação 3.4.1. A Coluna (2) mostra estimativas de RDD baseadas na equação 3.4.3, utilizando um polinômio de 2º grau em ambos os lados da margem de vitória e amostra completa. As Colunas (3)-(6) mostram estimativas de RDD com polinômios de 1º grau, baseadas na equação 3.4.3, considerando diferentes *bandwidths*: banda ótima, calculada a partir de [Calonico, Cattaneo e Titiunik \(2014\)](#) (coluna 3), 10% (coluna 4), 5% (coluna 5), e 2,5% (coluna 6). Todas as estimativas de RDD utilizam *kernel* triangular. Erros-padrão estão entre parênteses e são agrupados no nível do município (*clustered standard errors*). * Significante a 10%; ** significativa a 5%; *** significativa a 1%.

Na Tabela 3.5.4, analisamos o efeito de ganhar a eleição municipal sobre o número de beneficiários que são apoiadores do partido do candidato a prefeito. É de se esperar que essa medida de conexão política seja mais forte que a analisada na Tabela 3.5.2, uma vez que, neste caso, os apoiadores estão ligados diretamente ao partido vencedor local. Novamente, a Tabela 3.5.4 mantém a estrutura de apresentação das anteriores e sugere não haver favorecimento político na alocação de moradias do PMCMV.

Tabela 3.5.4 – Efeito de Ganhar a Eleição Municipal sobre o Número de Apoiadores do Partido do Prefeito

	Número de apoiadores do partido do prefeito que são beneficiários					
	MQO (1)	Polinômio de 2º Grau (2)	CCT (3)	10% (4)	5% (5)	2,5% (6)
Coligação eleita	0.492** (0.245)	-0.086 (0.408)	-0.770 (0.751)	-1.086 (0.863)	-1.426 (1.229)	-1.114 (1.457)
Observações	7,394	7,394	4,146	3,582	1,894	924
<i>Bandwidth</i>			12.3	10.0	5.0	2.5

Notas: Essa tabela analisa o efeito da coligação vencer uma eleição municipal sobre o número de apoiadores do partido do candidato a prefeito que são beneficiários do Programa Minha Casa Minha Vida. A Coluna (1) mostra estimativas de MQO, baseadas na equação 3.4.1. A Coluna (2) mostra estimativas de RDD baseadas na equação 3.4.3, utilizando um polinômio de 2º grau em ambos os lados da margem de vitória e amostra completa. As Colunas (3)-(6) mostram estimativas de RDD com polinômios de 1º grau, baseadas na equação 3.4.3, considerando diferentes *bandwidths*: banda ótima, calculada a partir de Calonico, Cattaneo e Titiunik (2014) (coluna 3), 10% (coluna 4), 5% (coluna 5), e 2,5% (coluna 6). Todas as estimativas de RDD utilizam *kernel* triangular. Erros-padrão estão entre parênteses e são agrupados no nível do município (*clustered standard errors*). * Significante a 10%; ** significativo a 5%; *** significativo a 1%.

O conjunto de resultados acima aponta que, de fato, coligações vencedoras das eleições municipais não privilegiam seus apoiadores via acesso a moradias do PMCMV. Independentemente da especificação utilizada e da definição do conjunto de apoiadores das coligações, os coeficientes são estatisticamente indistinguíveis de zero. As Figuras 3.5.2a, 3.5.2b e 3.5.2c apresentam a versão gráfica dos resultados apresentados.

Figura 3.5.2 – Efeito de Ganhar a Eleição Municipal sobre o Número de Apoiadores Beneficiários do PMCMV

Notas: Essa figura apresenta resultados da regressão descontínua, com as respectivas variáveis dependentes associadas ao primeiro e segundo colocados nas eleições municipais de 2008 e 2012: (3.5.2a) o número total de apoiadores das coligações que são beneficiários do PMCMV, (3.5.2b) número de apoiadores das coligações são beneficiários do Fundo de Arrendamento Residencial (FAR) do PMCMV, e (3.5.2c) o número total de apoiadores dos partidos dos candidatos que são beneficiários do PMCMV. O eixo horizontal representa a margem de vitória em que a eleição foi definida. Em cada regressão, um polinômio de segundo grau é estimado em cada lado da descontinuidade. Cada ponto representa a média local do *bin*. O número de *bins* é definido de forma ótima com base em [Calonico, Cattaneo e Titiunik \(2015\)](#).

Nós interpretamos essa ausência de evidências de favorecimento político a apoiadores na alocação de moradias do PMCMV a partir de dois diagnósticos. Por um lado, diferentemente de um emprego na burocracia municipal ([BARBOSA; FERREIRA, 2019](#); [TESO; COLONNELLI; PREM, 2018](#); [BROLLO](#);

FORQUESATO; GOZZI, 2017), a moradia é um bem que, uma vez obtido pelo beneficiário, não pode ser tomado de volta trivialmente. De tal modo, políticos não conseguem exercer poder de barganha sobre apoiadores uma vez transferida a moradia à sua posse. De outro lado, a definição de “apoiador” utilizada aqui não é exaustiva e leva em conta membros filiados a partidos da coligação eleita e doadores de campanha. Alternativamente, prefeitos poderiam favorecer, por exemplo, lideranças comunitárias locais, amigos e familiares no momento da seleção.

3.5.3 Heterogeneidade: Membros Filiados x Doadores de Campanha

Nesta seção, analisamos se é possível notar diferenças em termos de favorecimento político quando separamos os apoiadores entre membros filiados a partidos da coligação e doadores de campanha. A Tabela 3.5.5 apresenta estimativas de RDD com polinômios de 1º grau, baseadas na equação 3.4.3, utilizando banda ótima, calculada a partir de Calonico, Cattaneo e Titiunik (2014). As Colunas (1)-(3) apresentam estimativas para membros filiados, e as Colunas (4)-(6) apresentam estimativas para doadores de campanha. A Coluna (1) analisa os efeitos de ganhar a eleição municipal sobre o número de filiados a partidos da coligação. A Coluna (2) analisa os efeitos sobre o número de filiados que receberam acesso à moradia via FAR. A Coluna (3) analisa os efeitos sobre o número de filiados ao partido do candidato a prefeito. A Coluna (4) mostra estimativas para efeito sobre o número de doadores. A Coluna (5) mostra estimativa para o efeito sobre o número de doadores que receberam acesso à moradia via FAR e, a Coluna (6) apresenta estimativa do efeito sobre o número de doadores ao partido do candidato a prefeito.

Os resultados sugerem, à primeira vista, que, apesar de não haver efeito sobre membros filiados, há, sim, efeito sobre o número de doadores que tiveram acesso à moradia. Contudo, como pode ser visualizado nas Tabelas A.4, A.5, e A.6 no Apêndice, a significância das estimativas são sensíveis à escolha da *bandwidth*. Particularmente, os coeficientes são significantes para amostras que permitem a margem de vitória definida entre $[-10\%, 10\%]$. Ao diminuirmos a

banda a intervalos menores, vemos que o efeito cai pela metade e deixa de ser significativo.

Tabela 3.5.5 – Heterogeneidade: Efeitos de Ganhar a Eleição Municipal sobre o Número de Filiados e Doadores

	Membros de Partido			Doadores de Campanha		
	(1)	(2)	(3)	(4)	(5)	(6)
Coligação eleita	-0.831 (1.664)	-0.807 (1.587)	-0.858 (0.757)	0.083** (0.035)	0.065** (0.030)	0.072** (0.031)
Observações	4,900	4,946	4,116	3,824	3,514	3,380
<i>Bandwidth</i>	15.7	16.0	12.1	10.9	9.7	9.3

Notas: Essa tabela analisa o efeito da coligação vencer uma eleição municipal sobre o número de filiados e doadores que são beneficiários do programa minha casa minha vida. Todas as estimativas de RDD utilizam polinômios de 1º grau, baseadas na equação 3.4.3, com banda ótima, calculada a partir de [Calonico, Cattaneo e Titiunik \(2014\)](#). As Colunas (1)-(3) apresentam estimativas para membros filiados, e as Colunas (4)-(6) apresentam estimativas para doadores de campanha. A Coluna (1) analisa os efeitos de ganhar a eleição municipal sobre o número de filiados a partidos da coligação. A Coluna (2) analisa os efeitos sobre o número de filiados que receberam acesso à moradia via FAR. A Coluna (3) analisa os efeitos sobre o número de filiados ao partido do candidato a prefeito. A Coluna (4) mostra estimativas para efeito sobre o número de doadores. A Coluna (5) mostra estimativa para o efeito sobre o número de doadores que receberam acesso à moradia via FAR e, a Coluna (6) apresenta estimativa do efeito sobre o número de doadores ao partido do candidato a prefeito. Todas as estimativas de RDD utilizam *kernel* triangular. Erros-padrão estão entre parênteses e são agrupados no nível do município (*clustered standard errors*). * Significante a 10%; ** significativa a 5%; *** significativa a 1%.

3.5.4 Heterogeneidade no Déficit Habitacional

Outra possível dimensão de heterogeneidade está nos diferentes níveis de escassez de moradias entre municípios. Como a seleção a critério do poder local ocorre predominantemente quando existem mais candidatos ao benefício do PMCMV do que moradias construídas, esperar-se-ia que o favorecimento político de apoiadores seria mais relevante em municípios com maior déficit habitacional.

Nesta análise, usamos o déficit habitacional brasileiro oficial, calculado pela Fundação João Pinheiro com dados do Censo de 2010, e dividimos municípios entre aqueles com déficit habitacional acima da mediana em 2010 – “Alto Déficit Habitacional” – e aqueles com déficit abaixo da mediana em 2010 –

“Baixo Déficit Habitacional”. Repetindo a estrutura da seção anterior, a Tabela 3.5.6 mostra que, em ambos os grupos, o efeito de vitória da coligação sobre o número de apoiadores beneficiados com casas populares do PMCMV não é estatisticamente diferente de zero.

Tabela 3.5.6 – Heterogeneidade: Efeito de Ganhar a Eleição em Municípios com Alto e Baixo Déficit Habitacional

	Alto Déficit Habitacional			Baixo Déficit Habitacional		
	(1)	(2)	(3)	(4)	(5)	(6)
Coligação eleita	-0.532 (1.755)	-0.486 (1.720)	-0.414 (0.488)	-1.512 (2.621)	-1.490 (2.469)	-0.938 (1.084)
Observações	1,502	1,450	1,508	2,842	2,918	2,736
<i>Bandwidth</i>	10.9	10.5	11.0	14.7	15.2	13.6

Notas: Essa tabela analisa o efeito da coligação vencer uma eleição municipal sobre o número de apoiadores que são beneficiários do programa minha casa minha vida em municípios com alto e baixo déficit habitacional. O recorte é definido a partir da mediana do déficit habitacional. Todas as estimativas de RDD utilizam polinômios de 1º grau, baseadas na equação 3.4.3, com banda ótima, calculada a partir de [Calonico, Cattaneo e Titiunik \(2014\)](#). As Colunas (1)-(3) apresentam estimativas para municípios com alto déficit habitacional, e as Colunas (4)-(6) apresentam estimativas para municípios com baixo déficit habitacional. A Colunas (1) e (4) analisam os efeitos de ganhar a eleição municipal sobre o número de apoiadores a partidos da coligação. As Colunas (2) e (5) analisam os efeitos sobre o número de apoiadores que receberam acesso à moradia via FAR. As Colunas (3) e (6) analisam os efeitos sobre o número de apoiadores ao partido do candidato a prefeito. Todas as estimativas de RDD utilizam *kernel* triangular. Erros-padrão estão entre parênteses e são agrupados no nível do município (*clustered standard errors*). * Significante a 10%; ** significativa a 5%; *** significativa a 1%.

3.6 Conclusão

Neste artigo, procuramos investigar a hipótese de favorecimento político de candidatos ao benefício do Programa Minha Casa Minha Vida diretamente conectados ao poder local. Em particular, definimos tal conexão de acordo com o apoio político direto a candidatos - seja via filiação partidária, seja via doação individual a campanhas eleitorais - e testamos se apoiadores de partidos vencedores estão sobrerrepresentados dentre os beneficiários do programa.

Usando Regressões em Descontinuidade na margem de vitória dos partidos e coligações de eleições municipais, não encontramos evidência de que

haja favorecimento político a apoiadores diretos. A ausência de efeitos estatisticamente significantes se repete, também, quando analisamos filiados e doadores isoladamente, ou quando separamos municípios de acordo com seu déficit habitacional em 2010.

Dentre as possíveis razões para encontrar tais resultados nulos, estão a possibilidade de prefeitos favorecerem aliados indiretos, como amigos e familiares, que não tenham vínculo facilmente detectável com partidos; ou a dificuldade de tomar de volta casas de beneficiários uma vez concedidas, o que reduz substancialmente o poder de barganha do prefeito. Ademais, é possível que a realização de seleção de candidatos mais transparente seja mais frequente exatamente em municípios com alta competição eleitoral e, portanto, com eleições mais acirradas. Isto pode se dar justamente porque partidos perdedores em eleições muito competitivas ainda podem manter relativa força nas assembleias municipais, monitorando os vencedores mais de perto e garantindo que não usem o PMCMV em seu favor. Neste caso, o uso de regressões em descontinuidade na margem de vitória não poderia eliciar o efeito de favorecimento político.

Finalmente, a ausência de efeitos pode ser, simplesmente, fruto de uma política pública bem desenhada para evitar favorecimento político, ou minimizá-lo a casos isolados. Esta é, certamente, uma hipótese mais reconfortante, embora nossos resultados não sejam evidência suficiente em seu favor.

Em todo caso, este artigo contribui para a literatura de programas habitacionais na medida em que propõe um método para testar a existência de favorecimento político nesse contexto. Esperamos, com isto, incentivar pesquisas futuras neste sentido, que são de especial relevância em face dos vultosos investimentos que tais programas costumam demandar e de seus retornos difíceis de se mensurar.

A Tabelas Adicionais

Tabela A.1 – Efeito de Ganhar a Eleição Municipal sobre o Número de Filiados Beneficiários do PMCMV

	Número de filiados à coligação que são beneficiários					
	MQO (1)	Polinômio de 2º Grau (2)	CCT (3)	10% (4)	5% (5)	2,5% (6)
Coligação eleita	2.136*** (0.588)	-1.219 (1.136)	-0.831 (1.664)	-1.605 (2.253)	-2.235 (3.482)	-1.931 (4.405)
Observações	7,394	7,394	4,900	3,582	1,894	924
<i>Bandwidth</i>			15.7	10.0	5.0	2.5

Notas: Essa tabela analisa o efeito da coligação vencer uma eleição municipal sobre o número de filiados da coligação que são beneficiários do Programa Minha Casa Minha Vida. A Coluna (1) mostra estimativas de MQO, baseadas na equação 3.4.1. A Coluna (2) mostra estimativas de RDD baseadas na equação 3.4.3, utilizando um polinômio de 2º grau em ambos os lados da margem de vitória e amostra completa. As Colunas (3)-(6) mostram estimativas de RDD com polinômios de 1º grau, baseadas na equação 3.4.3, considerando diferentes *bandwidths*: banda ótima, calculada a partir de [Calonico, Cattaneo e Titiunik \(2014\)](#) (coluna 3), 5% (coluna 4), e 2,5% (coluna 5). Todas as estimativas de RDD utilizam *kernel* triangular. Erros-padrão estão entre parênteses e são agrupados no nível do município (*clustered standard errors*). * Significante a 10%; ** significante a 5%; *** significante a 1%.

Tabela A.2 – Efeito de Ganhar a Eleição Municipal sobre o Número de Filiados Beneficiários do PMCMV via FAR

	Número de filiados da coligação que são beneficiários via FAR					
	MQO (1)	Polinômio de 2º Grau (2)	CCT (3)	10% (4)	5% (5)	2,5% (6)
Coligação eleita	1.811*** (0.583)	-1.134 (1.109)	-0.807 (1.587)	-1.585 (2.169)	-2.049 (3.343)	-1.884 (4.225)
Observações	7,394	7,394	4,946	3,582	1,894	924
<i>Bandwidth</i>			16.0	10.0	5.0	2.5

Notas: Essa tabela analisa o efeito da coligação vencer uma eleição municipal sobre o número de filiados da coligação que são beneficiários do Programa Minha Casa Minha Vida via Fundo de Arrendamento Residencial. A Coluna (1) mostra estimativas de MQO, baseadas na equação 3.4.1. A Coluna (2) mostra estimativas de RDD baseadas na equação 3.4.3, utilizando um polinômio de 2º grau em ambos os lados da margem de vitória e amostra completa. As Colunas (3)-(6) mostram estimativas de RDD com polinômios de 1º grau, baseadas na equação 3.4.3, considerando diferentes *bandwidths*: banda ótima, calculada a partir de [Calonico, Cattaneo e Titiunik \(2014\)](#) (coluna 3), 5% (coluna 4), e 2,5% (coluna 5). Todas as estimativas de RDD utilizam *kernel* triangular. Erros-padrão estão entre parênteses e são agrupados no nível do município (*clustered standard errors*). * Significante a 10%; ** significante a 5%; *** significante a 1%.

Tabela A.3 – Efeito de Ganhar a Eleição Municipal sobre o Número de Filiados ao Partido do Prefeito Eleito

	Número de filiados ao partido do prefeito que são beneficiários					
	MQO (1)	Polinômio de 2º Grau (2)	CCT (3)	10% (4)	5% (5)	2,5% (6)
Coligação eleita	0.436* (0.245)	-0.100 (0.405)	-0.858 (0.757)	-1.157 (0.862)	-1.460 (1.228)	-1.168 (1.455)
Observações	7,394	7,394	4,116	3,582	1,894	924
<i>Bandwidth</i>			12.1	10.0	5.0	2.5

Notas: Essa tabela analisa o efeito da coligação vencer uma eleição municipal sobre o número de filiados ao partido do candidato a prefeito que são beneficiários do Programa Minha Casa Minha Vida. A Coluna (1) mostra estimativas de MQO, baseadas na equação 3.4.1. A Coluna (2) mostra estimativas de RDD baseadas na equação 3.4.3, utilizando um polinômio de 2º grau em ambos os lados da margem de vitória e amostra completa. As Colunas (3)-(6) mostram estimativas de RDD com polinômios de 1º grau, baseadas na equação 3.4.3, considerando diferentes *bandwidths*: banda ótima, calculada a partir de [Calonico, Cattaneo e Titiunik \(2014\)](#) (coluna 3), 5% (coluna 4), e 2,5% (coluna 5). Todas as estimativas de RDD utilizam *kernel* triangular. Erros-padrão estão entre parênteses e são agrupados no nível do município (*clustered standard errors*). * Significante a 10%; ** significante a 5%; *** significante a 1%.

Tabela A.4 – Efeito de Ganhar a Eleição Municipal sobre o Número de Doadores Beneficiários do PMCMV

	Número de doadores da coligação que são beneficiários					
	MQO (1)	Polinômio de 2º Grau (2)	CCT (3)	10% (4)	5% (5)	2,5% (6)
Coligação eleita	0.061*** (0.019)	0.020 (0.032)	0.083** (0.035)	0.083** (0.036)	0.047 (0.045)	0.030 (0.051)
Observações	7,394	7,394	3,824	3,582	1,894	924
<i>Bandwidth</i>			10.9	10.0	5.0	2.5

Notas: Essa tabela analisa o efeito da coligação vencer uma eleição municipal sobre o número de doadores da coligação que são beneficiários do Programa Minha Casa Minha Vida. A Coluna (1) mostra estimativas de MQO, baseadas na equação 3.4.1. A Coluna (2) mostra estimativas de RDD baseadas na equação 3.4.3, utilizando um polinômio de 2º grau em ambos os lados da margem de vitória e amostra completa. As Colunas (3)-(6) mostram estimativas de RDD com polinômios de 1º grau, baseadas na equação 3.4.3, considerando diferentes *bandwidths*: banda ótima, calculada a partir de [Calonico, Cattaneo e Titiunik \(2014\)](#) (coluna 3), 10% (coluna 4), 5% (coluna 5), e 2,5% (coluna 6). Todas as estimativas de RDD utilizam *kernel* triangular. Erros-padrão estão entre parênteses e são agrupados no nível do município (*clustered standard errors*). * Significante a 10%; ** significativo a 5%; *** significativo a 1%.

Tabela A.5 – Efeito de Ganhar a Eleição Municipal sobre o Número de Doadores Beneficiários do PMCMV via FAR

	Número de doadores da coligação que são beneficiários via FAR					
	MQO (1)	Polinômio de 2º Grau (2)	CCT (3)	10% (4)	5% (5)	2,5% (6)
Coligação eleita	0.056*** (0.018)	0.019 (0.028)	0.065** (0.030)	0.065** (0.030)	0.028 (0.037)	-0.005 (0.040)
Observações	7,394	7,394	3,514	3,582	1,894	924
<i>Bandwidth</i>			9.7	10.0	5.0	2.5

Notas: Essa tabela analisa o efeito da coligação vencer uma eleição municipal sobre o número de doadores da coligação que são beneficiários do Programa Minha Casa Minha Vida via Fundo de Arrendamento Residencial. A Coluna (1) mostra estimativas de MQO, baseadas na equação 3.4.1. A Coluna (2) mostra estimativas de RDD baseadas na equação 3.4.3, utilizando um polinômio de 2º grau em ambos os lados da margem de vitória e amostra completa. As Colunas (3)-(6) mostram estimativas de RDD com polinômios de 1º grau, baseadas na equação 3.4.3, considerando diferentes *bandwidths*: banda ótima, calculada a partir de [Calonico, Cattaneo e Titiunik \(2014\)](#) (coluna 3), 10% (coluna 4), 5% (coluna 5), e 2,5% (coluna 6). Todas as estimativas de RDD utilizam *kernel* triangular. Erros-padrão estão entre parênteses e são agrupados no nível do município (*clustered standard errors*). * Significante a 10%; ** significativo a 5%; *** significativo a 1%.

Tabela A.6 – Efeito de Ganhar a Eleição Municipal sobre o Número de Doadores ao Partido do Prefeito Eleito

	Número de doadores ao partido do prefeito que são beneficiários					
	MQO (1)	Polinômio de 2º Grau (2)	CCT (3)	10% (4)	5% (5)	2,5% (6)
Coligação eleita	0.062*** (0.017)	0.022 (0.029)	0.072** (0.031)	0.073** (0.030)	0.039 (0.034)	0.054 (0.036)
Observações	7,394	7,394	3,380	3,582	1,894	924
<i>Bandwidth</i>			9.3	10.0	5.0	2.5

Notas: Essa tabela analisa o efeito da coligação vencer uma eleição municipal sobre o número de doadores ao partido do candidato a prefeito que são beneficiários do Programa Minha Casa Minha Vida. A Coluna (1) mostra estimativas de MQO, baseadas na equação 3.4.1. A Coluna (2) mostra estimativas de RDD baseadas na equação 3.4.3, utilizando um polinômio de 2º grau em ambos os lados da margem de vitória e amostra completa. As Colunas (3)-(6) mostram estimativas de RDD com polinômios de 1º grau, baseadas na equação 3.4.3, considerando diferentes *bandwidths*: banda ótima, calculada a partir de Calonico, Cattaneo e Titiunik (2014) (coluna 3), 10% (coluna 4), 5% (coluna 5), e 2,5% (coluna 6). Todas as estimativas de RDD utilizam *kernel* triangular. Erros-padrão estão entre parênteses e são agrupados no nível do município (*clustered standard errors*). * Significante a 10%; ** significativo a 5%; *** significativo a 1%.

Conclusion

This dissertation aimed at providing evidence about the role of political connections and the creation of special interest groups on the design and implementation of public policy. Using local politics in Brazil as empirical setting, it has shown that evaluating such political connections is an elusive quest. Each context and policy has its own group of potential beneficiaries, based on the design and how the program/policy is implemented. In that sense, the results presented in each of the essays have limitations that open a path for the next steps of a research agenda.

In the first chapter, this dissertation presented how a reform that tried to reduce the role of money in elections ended favoring rich candidates that can use their own money to finance their campaigns. As a next step, I am investigating whether owners of contributing firms played a role in this process with preliminary evidence showing that they were responsible for at least part of the story. More precisely, with the banning to corporate contributions and less strict limits to self contributions, it seems that owners of contributing firms in previous elections became more likely to run for office, as well as to win mayoral elections. These preliminary results show that partners from contributing companies are 29% more likely to participate in the electoral process as candidates in highly exposed cities and are also 39% more likely to win elections. The number of partners from contributing firms running for office also increased by 2.3%.

In the second and third chapters it was shown that there are feasible ways of designing policies to reduce the incentives to favor allies. The second chapter provides evidence that *branded* programs can reduce the uncertainty around who gets the electoral credit for the policy. In particular, in-kind transfers such as in *Mais Médicos* make it easier for voters to recognize where the funding comes from and reward the politicians responsible for the program. On the same route of inhibiting political favoring, the third chapter has shown the case for a program that makes it more difficult for politicians to exert their bargaining power. Once beneficiaries are granted with homeownership, it is virtually impossible to take back their homes. A next step to this research agenda is to develop a model

that tries to reconcile these different sources of political connection, as well as understand the specific features of such programs that may curb rent seeking.

An additional spillover of this dissertation is a co-authored research agenda about the motivations and consequences of promoting homeownership. Subsidizing homeownership is an important federal spending area in Brazil, but the economic rationale for encouraging people to buy rather than rent homes is unclear. Using data from the Brazilian MCMV program, I expect to broaden the scope of the third chapter and answer some of questions posed in the literature (e.g., see [Dietz e Haurin \(2003\)](#) and [Goodman e Mayer \(2018\)](#)).

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