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To the Victor Belongs the Spoils? Party Membership and Public Sector Employment in Brazil*

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Abstract

We analyze how political discretion affects the selection of government workers, using individual-level data on political party membership and matched employer-employee data on the universe of formal workers in Brazil. Exploiting close mayoral races, we find that winning an election leads to an increase of over 40% in the number of members of the winning party working in the municipal bureaucracy. Employment of members of the ruling party increases relatively more in senior positions, but also expands in lower-ranked jobs, suggesting that discretionary appointments are used both to influence policymaking and to reward supporters. We find that party members hired after their party is elected tend be of similar or even higher quality than members of the runner-up party, contrary to common perceptions that political appointees are less qualified. Moreover, the increased public employment of members of the ruling party is long-lasting, extending beyond the end of the mayoral term.

JEL Classification: D72, D73, H70, J45

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1 Introduction

In this paper we analyze whether political office holders allocate public sector jobs to members of their own political party and how this affects the selection of government workers, using detailed individual-level data on almost 15 million political party members and matched employer-employee data on the universe of formal workers in Brazil. We exploit close mayoral elections to identify the causal effect of being the party in power on the employment of party members in the public sector and also analyze (i) whether this effect differs across occupations in the bureaucracy and (ii) how this affects the characteristics of the workers hired. Moreover, we also study whether the public employment of members of the ruling party is tied to the party's continued electoral success.

Public sector employment is a valuable resource for the party in power (Pollock 1937; Reid and Kurth 1989; Folke, Hirano and Snyder 2011). Government jobs can be used as a patronage tool, that is, to reward supporters for their votes and/or campaign efforts (Calvo and Murillo 2004; Kitschelt and Wilkinson 2007; Stokes 2009).[1] From this perspective, public sector employment can be a mechanism for establishing loyal clienteles and constitutes one of many vote buying or clientelistic strategies available to politicians (Mainwaring 1999; Stokes et al. 2013; Gans-Morse, Mazzuca and Nichter 2014).[2] The ability to appoint party loyalists to public sector positions can also help build and maintain the infrastructure required for political parties to function, as government jobs can be used to compensate party members for their work (Sorauf 1964; Conway and Feigert 1968; Panebianco 1988). Public employment can also be used to maintain party cohesion, by rewarding loyal party officials with jobs or titles and distributing positions in the bureaucracy among the different factions that make up a party (Wilson 1961; Sorauf 1960; Muller 1989). Political parties might also use government jobs as source of fund-raising, by requiring appointees to contribute part of their salaries to the party (Key 1964; Ware 1996).[3] Finally, parties can grant jobs in the bureaucracy to their

[1] Patronage can be defined as "the proffering of public resources (most typically, public employment) by office holders in return for electoral support" (Stokes 2009).

[2] A key difference between patronage and other clientelistic or vote buying strategies is that it implies the distribution of state resources and therefore can only be conducted by the party in power (Medina and Stokes 2007). Theoretical arguments suggest that public sector employment is an attractive tool for patronage, compared to other forms of redistributing public resources towards supporters, because jobs are easily targeted (Persson and Tabellini 1999; Lizzeri and Persico 2001), can conceal the extent of redistribution (Coate and Morris 1995) and can help overcome political commitment problems (Robinson and Verdier 2013).

[3] For instance, according to Freedman (1994) in the Chicago machine in the middle of the 20th century, "Job holders also had to buy tickets to various party fundraising events and were required to contribute a percentage of their salaries to the ward organization. Generally, they were assessed between 2% and 3% of their total pay." In the case of Brazil that we analyze in this paper, most political parties require members

members as a way of influencing policy-making and establishing a party presence within the state (Peters and Pierre 2004; Jalali and Lisi 2009; Kopecký, Mair and Spirova 2012).

The extent to which the party in power can use public employment for its own benefit depends, crucially, on the degree to which political office holders have discretion over personnel decisions in the bureaucracy. Although most countries have introduced professional civil services, in practice all bureaucracies combine civil servants and discretionary appointees.[4] The seminal works by Wilson (1887) and Weber (1922) argue that, to ensure a competent and efficient public administration, political discretion should be curtailed. Instead, public workers should be largely insulated from political pressures through the establishment of a professional civil service, with workers hired, promoted, and fired on the basis of merit. Consistent with these arguments, empirical evidence shows that merit-based career civil services are associated with higher economic growth, lower corruption, and better bureaucratic performance (Rauch 1995; Evans and Rauch 1999; Rauch and Evans 2000; Dahlström, Lapuente and Teorell 2012; Ornaghi 2016) and that discretionally appointed officials tend to perform worse (Gilmour and Lewis 2006; Lewis 2007; Xu 2017).

On the other hand, despite the advantages of merit-based civil services, political control over personnel decisions could have several benefits. Discretion over appointments could improve selection, if politicians have private information about appointees, and might also limit agency problems, as loyal subordinates may be more motivated. Partisan appointments can also help elected officials control the policy-making process, making the bureaucracy more responsive to the priorities of political leadership and facilitating the implementation of political decisions (Moe 1985; Pierre and Peters 2005; Lewis 2010). Moreover, as emphasised by Grindle (2012), political discretion over hiring decisions does not necessarily imply that appointees are chosen without regard to competence. Electoral accountability should motivate politicians to choose bureaucrats who can perform their jobs effectively.

Identifying the extent to which elected officials allocate jobs in the pubic sector to their supporters and how this affects the selection of government workers presents significant challenges. First, the extent of partisan appointments in the bureaucracy is not easily observable.[5]

who are appointed to senior positions in the public sector to contribute part of their salaries to the party.

[4]Discretionary appointments tend to focus on the highest positions in the administration, but in many countries also extend to mid- and lower-level positions in the bureaucracy. According to expert survey data from Dahlberg et al. (2013), in more than 60% of non-OECD countries, political criteria take precedence over merit criteria in public sector appointments.

[5]Most empirical studies rely on expert surveys of the degree to which political or meritocratic reasons drive government hiring (Dahlberg et al. 2013; Kitschelt 2014; Kopecký et al. 2016) or use proxy measures, such as total public sector employment or personnel expenditures (Calvo and Murillo 2004; O'Dwyer 2006; Grzymala-Busse 2007; Remmer 2007).

Accurately identifying whether politicians favor their supporters when hiring, would require individual level data on both public sector employment and political preferences, which are seldom available. Second, even if these data were available, identifying the causal effect of being the party in power on the employment of political supporters is difficult, as political preferences are likely to be correlated with both public sector employment and electoral outcomes. For instance, political parties whose members have a higher ability to work in the public sector might have more government employees and also might be more likely to get elected.

In this paper, we address these empirical challenges by analyzing whether Brazilian mayors allocate jobs in the municipal bureaucracy to members of their own political party, using detailed individual-level data on political party membership and employment. We analyse political party members because party membership has been typically considered the main criterion for selecting political appointees, as it signals loyalty and assures politicians that appointees will be aligned with their policy priorities (Pierre and Peters 2005; Manow and Wettengel 2006). We focus on formal party membership, which differs from party voting or party loyalty, as it is a formal status that the individual must actively acquire by signing up with the political party and fulfilling any obligations set by the party bylaws (Scarrow 2017).[6] As discussed above, political parties may target jobs to their members not only to reward them for their support, but also as an instrument to strengthen the party organization and to control state institutions. We use data on all municipal public sector employees, which allows us to analyze the aggregate effects of discretionary hirings of party members on the municipal bureaucracy and also to explore any differences across occupational categories. To estimate the causal effect of being the party in office on the public employment of members of the winning party, we use a Regression Discontinuity Design (RDD) in close races within municipality. In particular, for a given municipality and mayoral term, we compare the aggregate employment in the municipal public sector of members of the party that barely won an election with that of members of the party that barely lost the election (i.e., the runner-up party). The intuition for this identification strategy is that, within a given municipality, parties that lost an election by a narrow margin can be a good counterfactual for parties that won that same election by a narrow margin.

Our results using an RRD in close races within municipality show that winning a mayoral

[6]In Brazil, party membership is a formal status within the party's organization. To become a member, individuals must go to the local party office to voluntarily sign up with the party. Every party has its own membership rules. In some cases there are selective process and supporters are required to pay annual dues. The law requires legally recognised parties to have a minimum number of members and parties must keep a register of their members.

election has a positive and significant effect on the employment of members of the winning party in the municipal bureaucracy. In particular, we find that the number of members of the winning party employed by the municipal public sector in a given municipality and mayoral term is around 35% to 41% higher than the same figure for members of the runner-up party. This represents an increase in the fraction of total municipal public sector employees accounted for by members of the winning party of between 2 and 2.5 percentage points (relative to members of the runner-up party).[7] We also find that our results are mostly driven by hiring of members of the ruling party and not by a reduction in the employment of supporters of the runner-up candidate, indicating that mayors use their discretionary powers to grant jobs to members of their party.

We also analyze whether the effect of winning office differs across occupational categories in the municipal bureaucracy. We find that winning a mayoral election has a positive and significant effect on the employment of members of the winning party across all occupations. This effect is larger (in relative terms) for senior officials and managers, suggesting that the need to make the bureaucracy sensitive to the preferences of elected leaders is an important driver of discretionary hiring. However, we also find large increases the number of members of the winning party in non-senior positions in the bureaucracy, suggesting that patronage or other partisan reasons also play an important role in hiring decisions.

To analyze whether the use of political discretion affects the quality of workers hired by the municipal bureaucracy, we study several characteristics of those workers hired from the private sector: education, private sector wage, and private sector wage residual, estimated from a Mincerian equation defined over a large set of individual characteristics, following the approach of Besley et al. (2017). We take all these characteristics in the year before the workers join the municipal bureaucracy. We find that, contrary to the common perception that discretionary appointments lead to the selection of unqualified appointees, the quality of members of the winning party hired after the party takes office is similar to that of members of the runner-up party for most occupations, except for senior officials and managers. For these senior positions, we actually find that members of the winning party tend to have higher private sector wages and wage residuals, suggesting that politicians might be able to use their

[7] Our results could reflect party switching, if individuals who already had public sector jobs become members of the ruling party (or quit the runner-up party) after the elections. To address this concern, we estimated all our regressions considering individuals' political party membership in the electoral year and maintaining it constant over the whole mayoral term to avoid capturing any changes in party membership that occurred after the elections, and obtained results similar to those reported throughout the paper. These results are reported in Appendix Table A.9

discretionary powers to appoint higher quality party members to these positions.[8] This is consistent with the findings of Iyer and Mani (2012) that politicians value both loyalty and expertise when appointing bureaucrats.

Finally, we exploit the time series dimension of our data, extending our RDD in close races within municipality to a difference-in-difference framework, using annual data. We find that winning a mayoral election leads to a significant increase in the employment of members of the winning party in the municipal public sector, and that a large part of this increase occurs in the first year of the term. We also find that the public employment of party members is tied to their parties' subsequent electoral success: the number of members of the winning party employed in the municipal bureaucracy remains stable if the party is re-elected at the end of the mayoral term, but decreases significantly if the party does not stay in power. However, even when parties leave office, we find evidence of long-lasting increases in the employment of members of the winning party for jobs in non-senior positions. This pattern is consistent with the idea that senior officials and managers help align bureaucrat's actions with the interests of elected politicians and, as a result, employment in these positions is directly tied to specific politicians. However, it runs contrary to the idea that parties might use permanent appointments in senior positions to try to continue influencing policy after leaving office. Our findings suggests that mayors are able to grant permanent jobs to members of their parties in lower-ranked positions, which is more likely to reflect the objective of rewarding or motivating supporters.

This paper contributes to a large body of research in both political science and economics, described above, that analyzes how political office holders use government jobs in a discretionary manner to achieve political objectives, such rewarding electoral support, strengthening the party organization, and influencing policy-making.[9] We contribute to this literature by estimating the causal effect of winning office on the employment of members of the ruling party, providing rigorous evidence on the extent to which elected officials use discretionary appointments to favor their own party members. Moreover, we present evidence on the possible motivations for this, exploiting differences across occupations within the bureaucracy, and also analyze its impact on the quality of workers hired by the public sector. This paper

[8] A potential concern about these results is that high quality members of the opposition party might be less willing to join the bureaucracy, and as a result only lower quality members of the runner-up party may be included in our analysis. This would lead us to overestimate the effect of winning office on the quality of members of the winning party. To address this concern, we compared the characteristics of members of the runner-up party hired from the private sector in the three years before the start of the mayoral term and in the following four years (e.g., the whole duration of the mayoral term). We found no significant change, suggesting that a reduction in the quality of members of the runner-up party does not account for our results.

[9] See Stokes (2009), Kitschelt and Wilkinson (2007), and Kopecký et al. (2016) for reviews of this literature.

is also related to a more recent literature in economics which studies the personnel economics of the state, analyzing how selection, incentives, and management practices affect the performance of bureaucrats (see, for instance, Dal Bó, Finan and Rossi 2013; Ashraf, Bandiera and Jack 2014; Khan, Khwaja and Olken 2016; Rasul and Rogger 2017). Finally, this paper is related to the literature on the value of political connections for firms (Fisman 2001; Faccio 2006; Cingano and Pinotti 2013; Acemoglu et al. 2016) and individuals (Vidal, Draca and Fons-Rosen 2012; Markussen and Tarp 2014; Gagliarducci and Manacorda 2017; Fafchamps and Labonne 2017). In a contemporaneous paper, Colonnelli, Prem and Teso (2017) analyze the value of political connections for individuals in Brazil, focusing on campaign donors and non-elected candidates for city councillors, and find that being connected to the party in power increases the probability of being employed in the public sector, consistent with our findings. Different from them, we do not focus on the value of connections from the perspective of the politically-connected individuals, but rather analyze the aggregate effects of discretionary hirings of party members, allowing us to provide a more complete picture of how this affects the municipal public sector as a whole. Moreover, while they conclude that patronage is a major driver of hiring, our results suggest that mayors use discretionary appointments for a variety of reasons, and not only as a patronage tool, and that they appoint high quality party members to senior positions. These differences might be explained by the fact we focus on the universe of party members and, as discussed above, there are several reasons why the party in power may grant public employment to its members.

2 Institutional Setting

We study mayoral elections in Brazil to analyze the effect of electoral success on the employment of political party members in the public sector. This section provides background information on Brazilian municipalities and on how public sector workers are hired. It also describes political parties in Brazil and the role of party members.

2.1 Brazilian Municipalities

Brazilian politics takes place in the framework of a federal presidential representative democracy. The layers of political and administrative organization in Brazil are the federal government, 26 states and one federal district (*Brasilia*), and 5,567 municipalities.

Municipalities are minor federative units with an autonomous local government, comprised of a mayor (*Prefeito*) and a city council (*Camara dos Vereadores*), both of which are

directly elected by voters every four years. Mayors of municipalities with less than 200,000 voters are elected with plurality rule, while mayors of municipalities above this threshold are elected with (run-off) majority rule.[10] Municipal elections are held every four years and take place at the same time for all municipalities across the country.[11] Elections are usually held in October, with the oath of office taking place in January of the following year. Before 1998 Brazilian mayors could not run for reelection, but since then mayors are allowed to run for a second term.

Municipalities are responsible for the provision of key public goods and services, including public transportation, early childhood and primary education, sanitation, and health services. Municipalities are required by law to spend a minimum fraction of their total income on health and education. Although municipalities can collect local taxes, most municipalities rely on state and federal transfers as their main revenue sources, with these transfers accounting for over 90 percent of the municipal budget on average (Gardner 2013).

Given the high decentralization in the provision of public goods, municipal public sector workers account for a large fraction of total public sector employees. Municipal employment has increased over the last decades, from about 39% of total public sector employment in 1995 to about 56% in 2013 (the last year in our sample), reflecting the increasing decentralization in the provision of public services and the creation of new municipalities over this period (de Mattos 2011).

2.2 Political Parties and Party Members in Brazil

Federal laws and the Superior Electoral Court (*Tribunal Superior Eleitoral, TSE*) regulate political parties in Brazil. The Constitution establishes that all political parties must be national, banning local parties. Parties must have a minimum number of members, equivalent to 0.5% of the votes cast in the previous national elections for Congress, to be legally recognized. Parties are required by law to have their own statutes, describing their organizational structure, the process for selecting candidates, and the rights and duties of party members. Independent candidates are not allowed; candidates must be members of a party to run for any public office.[12]

[10] In the 2004 and 2008 mayoral elections that we analyze, only 68 and 77 municipalities, respectively, were above this threshold and thus could potentially go to a second round.

[11] Elections for President, governors, and state and federal legislators all take place at the same time every four years, while municipal elections are staggered by two years, so they do not coincide with any other elections.

[12] See Albarracín (2015) for a more detailed description of the laws and regulations governing the Brazilian party system.

Every individual who is eligible to vote can become a political party member. [13] Party membership is a formal status within the party's organization and requires an individual's active decision. To become a member, individuals must go to the local party office to voluntarily sign up with the party. Online member registration is not allowed. Every party has its own membership rules. In some cases there are calendars for registration and selective processes. The statute of the party defines the rights and duties of its members. In general, party members are required to attend party meetings and activities related to the political campaigns of party candidates, provide support in electoral campaigns, participate in fund raising activities, and vote for political candidates of the party. Some parties also require members to pay dues.[14]

The law allows parties to present a common candidate list for any office, pooling their votes. Each electoral coalition is built for a specific electoral dispute, not implying in any programmatic agreement between the parties involved or the formation of a government coalition after the election. Parties can only be part of one coalition in a given municipality for local elections, although the same party can form different electoral coalitions in different municipalities. In practice, it is uncommon for parties in mayoral elections to remain outside an electoral coalition, and coalitions are considered the unit of electoral competition at the local level (Andrews 2015).

There are currently 35 officially registered political parties in Brazil, but only four major parties. PMDB (*Partido do Movimento Democrático Brasileiro*) is the largest party measured by the number of members and mayoral offices held.[15] The party has been described as a "catch-all" party (Mainwaring 1999), as its low level of ideological commitment allows it to attract many different types of voters. The party is a strong competitor in local elections in almost all regions of the country, even if very few Brazilians claim to identify with it. Because of its relevance, PMDB is usually part of the legislative coalition supporting the President. PT (*Partido dos Trabalhadores*) was founded in 1980 by labor unionists and intellectuals and distinguished itself from other parties for its left-progressive party program. PT governed at the federal level from 2003 to 2016 and became the largest party in Congress. PSDB (*Partido da Social-Democracia Brasileira*) occupied the presidency in 1994 and 1998 under

[13] Voting and registration are mandatory for all literate citizens aged 18 to 70. Party membership is completely independent from voting registration.

[14] For instance, according to the statute of the PT (*Partido dos Trabalhadores*), party members who do not hold a public sector job should donate every semester an amount equivalent to 3-6% of their monthly wage, depending on income levels. Party members that that are appointed to senior public sector positions are required to donate between 6-20% of monthly wages every six months.

[15] Appendix Table A.1 shows the distribution of party members across parties for each of the electoral years in our sample (2004, 2008, and 2012).

the leadership of Fernando Henrique Cardoso, and has been the main opposition party during the PT administration. DEM (*Democratas*) is considered the main right-wing party, and was PSDB's most important coalition partner during the Cardoso administration.

There is significant debate about the importance of parties in the Brazilian political system. Brazil has been generally considered to have a weakly institutionalized party system, with high electoral volatility, relatively low levels of party identification among the electorate, high fragmentation, and lack of strong ideological platforms (Ames 2009; Ames and Power 2007; Mainwaring 1999; Kinzo 2003; Desposato 2006). However, some authors have highlighted the importance of party leaders in the legislative decision-making process at the federal level (Figueiredo and Limongi 2000). Moreover, following the party line in legislative votes helps legislators obtain valuable resources, like pork-barrel and government jobs. (Pereira and Mueller 2003; Alston 2005; Zucco Jr 2009; Barberia and Praça 2014).

There is a strong link between pork and patronage at the federal and local levels. Members of Congress use mayoral candidates as their local brokers to advertise pork in a given municipality during their electoral campaigns. Most municipalities in Brazil are small (the median municipality had about 8,500 registered voters in 2013), and this allows mayoral candidates to build encompassing patronage machines in their districts. Mayoral candidates have extensive knowledge of their area and constituents, and continued interaction allows them to gather information from voters and gain their trust. In most cases, they recruit party members, including council candidates, municipal bureaucrats, and professional brokers, who devote part of their time to helping politicians in exchange for jobs, gifts, and favors (Krauss and Pekkanen 2011; Montero 2012; Novaes 2017). There are incentives for party elites at the local level to invest in party organization, as politicians make extensive use of the party organization in local elections (Van Dyck 2014; Samuels and Zucco 2015).

2.3 Civil Service in Brazil

Brazil was the first country in Latin America to establish a formal merit-based career public bureaucracy, and its civil service is considered one of the region's most extensive and professional (Longo and Iacoviello 2010; Grindle 2012; Cortázar Velarde et al. 2014). Brazil's five constitutions since 1934 have all included commitments to a merit-based professional bureaucracy.[16]

Civil servants must undertake a formal, competitive, open entrance examination, whose

[16]See Geddes (1996), Gaetani and Heredia (2002), and Grindle (2012) for analyses of the historical evolution of the civil service in Brazil.

requirements are job-specific and can include written and oral tests, as well as the submission of academic and professional credentials. Civil servants are granted tenure after three years on the job. Municipalities have autonomy to create and modify civil service positions in the municipal bureaucracy. Each municipality has its own Position, Career, and Wage Plan (*Plano de Cargos, Carreiras e Salários*), describing the different positions in the municipal bureaucracy and the required qualifications for the job. About 73% of municipal public sector workers were career civil servants in 2013 (IBGE 2014). Anecdotal evidence suggests that the results of civil service examinations are manipulated in some cases at the local level, although it is not clear how common manipulation actually is.[17] Even without explicitly manipulating examinations, mayors could favor members of their parties by, among similarly qualified applicants, hiring those that are politically aligned with them.

Municipalities can also hire workers for some positions that are exempt from civil service entrance examinations. First, mayors can directly appoint workers for senior positions, such as manager, supervisor, and advisor.[18] Mayors have ample discretion in hiring and firing for these positions, which are not part of the career civil service and do not require a competitive hiring process. These positions accounted for more than 8% of total municipal public sector workers in 2013.[19] Anecdotal evidence suggests that mayors might be able to use these discretionary appointments to hire workers for lower-level jobs that should be occupied by career civil servants.[20]

Second, municipalities can hire workers under temporary contracts, for a period of six months to four years. These positions are intended to give municipalities flexibility to meet

[17]There have been several scandals related to fraud in civil service examinations in recent years. In 2012 the federal police investigated more than 1,700 cases of irregular civil service examinations in municipal and state governments throughout Brazil. https://www.vgnoticias.com.br/nacional/fraudes-em-concursos-tem-17-mil-denuncias-investigadas/18502

[18]These hirings can be done under two legal categories: positions of trust (*função de confiança*) and commissioned positions (*cargos en comissão*). The difference between the two is that former are reserved for individuals who are already civil servants, and thus represent a promotion or change in responsibilities (without having to meet any pre-determined criteria or undertake additional formal examinations), and the latter allow hiring individuals from outside the civil service without going through competitive examinations. Municipal secretaries are also exempt from civil service entrance examinations, although they are not included in any of these two legal categories, as they are considered political appointees.

[19]This figure includes only *cargos en comissão*, since *funçãoes de confiança* are occupied by civil servants, who return to their civil service positions when their discretionary appointments are terminated.

[20]For instance, in 2017 the municipal government of Candeias (a municipality in the state of Bahia with almost 90,000 inhabitants) was found guilty of conducting more than 1,500 discretionary hirings that violated the constitutional requirement that these appointments should be restricted to senior positions. http://www.jb.com.br/pais/noticias/2017/07/11/mp-da-bahia-investiga-15-mil-cargos-comissionados-na-prefeitura-de-candeias

temporary hiring needs and do not require passing a civil service examination.[21] The types of positions that can be filled using temporary contracts are specified by law, and focus mostly on education, health, research, and emergency services. Mayors are required to justify the hiring of temporary workers and can be prosecuted in case of misconduct.[22] Temporary workers accounted for 18% of total municipal public sector workers in 2013.

Overall, although Brazil has an extensive professional merit-based civil service, there is ample room for mayors to hire workers outside the formal civil service rules.[23] To what extent mayors use this discretion to fill positions based on partisan or clientelistic motives remains an open question. As discussed above, the fact that politicians have discretion in hiring does not necessarily imply that they will favor their political supporters, as they could use their appointment powers to bring well-qualified staff into government, irrespective of their political affiliation.

3 Data and Descriptive Statistics

3.1 Employer-Employee Matched Data

To analyze employment in the public and private sectors we use data from *Relação Anual de Informações Sociais (RAIS)*, an administrative dataset collected annually by the Brazilian Ministry of Labor and Employment (*Ministério do Trabalho e Emprego, MTE*) that contains linked employer-employee records. This dataset includes both private and public sector employees and constitutes a high quality census of the Brazilian formal labor market (Dix-Carneiro and Kovak 2017). All public sector entities and registered firms are required by law to report every worker formally employed at some point during the previous calendar

[21] Public sector employers are required by law to post a notice of the job search, describing the requirements for the temporary position. Candidates only have to undergo a simplified selection process (*Processo Seletivo Simplificado*), which can be limited to evaluating their CV's.

[22] For instance, in 2017 the mayor of São Pedro da Aldeia (a municipality in the state of Rio de Janeiro with about 90,000 inhabitants) was found guilty of irregularities in the hiring of more than 3,000 temporary workers and was fined almost 80,000 *Reais* (about 25,000 U.S. dollars). http://www.tce.rj.gov.br/web/guest/todas-noticias/-/asset_publisher/SPJsTl5LTiyv/content/s-p-da-aldeia-prefeito-multado-por-irregularidades

[23] This is the case not only at the municipal level, but also at the state and federal levels. As described above, temporary contracts and senior positions that do not require undergoing formal civil service examinations accounted for more than 26% of total municipal public sector workers in 2013. This same figure reached 19% at the state level in the same year. At the federal level, in 2013 there were more than 95,000 positions that could be appointed in a discretionary manner by the President and the heads of federal public organizations. These include not only high-level officials, but also mid-level and even some relatively low-level positions (OECD 2010).

year. Employers face fines for late, incomplete, or inaccurate reports, and the MTE conducts frequent checks to verify the accuracy of information reported. Data reported in RAIS are used by the MTE to identify workers entitled to unemployment benefits (*Seguro Desemprego*) and a minimum-wage supplement (*Abono Salarial*), so workers also have incentives to ensure accurate reporting.

RAIS covers almost all formally employed workers in Brazil. It excludes interns, domestic workers, the self-employed, and elected politicians.[24] RAIS does not include information on workers who are not formally employed. This is not a significant limitation for our main analyses, which focus on public sector employment, as public sector workers are formally registered. However, this could be a limitation for analyzing private sector employment, given the high degree of labor market informality in Brazil.[25]

The data reported in RAIS consist of job records and include worker and establishment identifiers, allowing us to track workers and employers over time. For each job record, the data include information on the hiring and separation dates, hours worked, gross earnings, and occupation. They also include information on worker characteristics, such as age, gender, race, and education.

We classify employment in three categories, based on the legal nature of the employer: municipal public sector, state and federal public sector (including government-owned firms), and private sector. A small fraction of workers have more than one job in the same year and sector (e.g., a worker having two different jobs in the private sector in the same year); we keep these multiple job records in our sample. Our results can thus be interpreted as referring to the number of jobs, and not necessarily to the number of workers employed.[26]

We exclude repeated observations and observations with missing employer, worker, or municipality identifiers, and restrict the sample to workers aged between 15 and 75. Together, these cleaning procedures drop less than one percent of the original observations. Our RAIS data cover the period 2002-2013 and we have data on 90.5 million workers, with 651.4 million job-year observations.

[24] We exclude individuals who run for office in a given election from our analysis, as they might differ from other political party members. We obtain similar results if we include them, as they only represent a relatively small fraction of all party members.

[25] Labor market informality in Brazil declined over our sample period, but still remains high. The share of total workers accounted for by employees without a formal contract (*sem carteira de trabalho assinada*) and the self employed, a commonly used proxy for labor market informality, decreased from 46.9% in 2002 to 39.5% in 2013. See Carvalho Filho and Estevão (2012) and Cardoso (2016) for discussions of the recent evolution of labor market informality in Brazil.

[26] As an alternative, we restricted our sample to one job per worker in each sector and year, keeping the highest paying job in each sector, and found results similar to those reported throughout the paper.

3.2 Party Membership Data

To identify political party members, we use individual-level data on all party members in Brazil from the Superior Electoral Court (TSE), which oversees all local, state, and federal elections. Political parties are required by law to submit up to date lists of all their members to the TSE in April and October of every year. Party membership registries are kept in electronic format and are submitted to TSE through an online system. TSE checks the information reported by the parties and matches it with other databases to ensure its quality (Speck 2014). For each political party, these data include the name of all members, the municipally where they are registered, the date when they joined the party, and the date when their party membership was cancelled (if any). These data thus allow us to identify all political party members in Brazil at a given point in time.

A potential concern about these data is that individuals may not formally de-register from a political party, even if they are no longer involved in party activities. Also, anecdotal evidence suggests that in some cases individuals may sign up as party members in exchange for a small favor from politicians, and even without much informed consent. As a result, formal party membership might not necessarily reflect active participation in party activities. However, survey evidence suggests a relatively high active involvement of party members. For instance, according to the World Values Survey (WVS), in 2006 more than half of those who declared being members of a political party in Brazil claimed to be active members. This figure was among the highest of the 56 countries covered in the survey. In any case, if formal party membership is a noisy measure of actual involvement in party activities, this would bias our results towards finding no effect of being a member of the winning party on public sector employment.[27]

We exclude repeated observations, observations with missing data, and also individuals who are members of more than one party at the same time. We also exclude individuals who are registered with a party for less than a year. After these cleaning procedures, we are left with a sample of about 14.8 million individuals that are party members at some point during the period 2002-2013.

For our analyses, we consider individuals' party membership with a one year lag to reduce the potential impact of contemporaneous changes in party membership. Using contemporaneous membership does not affect our results. We also estimated all our regressions considering

[27] We also conducted our analyses classifying as party members only individuals who joined the political party in the previous five years, because recent members might be more likely to be actively involved party activities, and obtained results similar to those reported throughout the paper.

individuals' party membership in the electoral year and maintaining it constant for the whole mayoral term to avoid capturing changes in party membership that occurred following the elections, and obtained results similar to those reported throughout the paper.

3.3 Electoral Data

Our data cover the period 2002-2013. There are two mayoral elections during this period (2004 and 2008), so we focus our analysis on the mayoral terms 2005-2008 and 2009-2012, for which we have information for all years. We use electoral data from TSE to determine the incumbent party, the winning and runner-up parties, and each party's vote share. Data on the parties that comprise local electoral coalitions and data on mayoral candidate characteristics also come from TSE.[28]

3.4 Construction of Main Variables

We match the data on formal employment from RAIS to the data on party membership from TSE by full name and municipality using a fuzzy matching algorithm.[29] Out of a total of 14.8 million party members in our dataset, we are able to match 38% to RAIS.[30] As a comparison, according to estimates from the Brazilian Institute of Geography and Statistics (*Instituto Brasileiro de Geografia e Estatística, IBGE*) the fraction of the working age population employed in the formal sector averaged about 35% over our sample period, so our matching rate is broadly in line with this figure.

For our main analyses, we aggregate the individual employment data for members of all political parties that are part of either the winning or the runner-up local electoral coalitions up to the municipality, coalition, and mayoral term level. So for each municipality and

[28] Electoral coalitions must formally register with electoral authorities, so we can objectively identify them.

[29] Our conclusions are not sensitive to different levels of precision in the matching algorithm, and are also similar if we use only exact matches.

[30] A potential concern regarding the matching between the party membership data and the RAIS data might be that the quality of the matching may differ across parties and might be correlated with the characteristics of party members. For instance, members of some parties may be more likely to work in the informal sector and thus might be less likely to be matched with the formal employment data in RAIS. We find that the distribution of party members across parties for the matched data is similar to that of the overall population of party members. Also, this is not a significant limitation for our main analyses, which focus on public sector employment, as public sector workers are formally registered. Moreover, our empirical approach, which exploits close races within a given municipality, controls for differences across parties. The results reported in Appendix Table A.6 show that the winning and runner-up coalitions in close electoral races have similar number of party members before the elections, irrespective of whether we consider all party members or only those that we are able to match with RAIS.

mayoral term we have two observations: one for members of political parties that are part of the electoral coalition that won the mayoral election, and one for members of parties in the electoral coalition that finished second in the same election. For simplicity, we refer to these alternatively as party members or coalition members throughout the text. We focus on coalitions because, as mentioned above, most parties compete in local elections as part of electoral coalitions.[31]

We use several variables to analyze the employment of party members of the winning and runner-up coalitions in the municipal bureaucracy. Our main measure of employment is the number of members of political parties belonging to each coalition employed in the municipal public sector at any point in a given year, averaged over the mayoral term. To provide a relative measure of the employment of party members, we also calculate the ratio of the number of members of each coalition employed in the municipal public sector to total municipal public sector workers in each year, and then take the average of this ratio over the mayoral term. To analyze worker flows, we construct measures of hires and separations. In particular, we calculate the total number of party members of each coalition hired by the municipal public sector over the whole mayoral term.[32] We also scale this variable by the total number of workers hired by the municipal public sector over the mayoral term. Finally, to analyze separations, we calculate the annual separation rate (defined as number of party members belonging to a given coalition that leave the municipal bureaucracy in a year divided by the total number of members of that coalition working in the municipal bureaucracy at any point during the same year) and then take the average of this ratio over the mayoral term.[33,34] We construct all these measures separately for the winning and runner-up coalitions

[31] We also estimated all our regressions considering only members of the leading party in the winning or runner-up coalitions, instead of aggregating members of all the parties in each coalition, and obtained results similar to those reported throughout the paper. Some of these results are reported in Appendix Table A.9.

[32] We define a hire in year t as a worker who is working for an employer (e.g., the municipal administration) at some point during year t and was not working for the same employer at any point during year *t-1*. We calculate the total number of hires in the mayoral term by adding up the number of hires in each year of the term.

[33] We define a separation in year t as a worker who is working for an employer (e.g., the municipal government) at some point in year t and is not working for the same employer at any point during year *t+1*. For workers who are working for an employer as of December 31st of year t, but are not working for the same employer at any point during year *t+1* we classify their firing as occurring in year *t+1*. This choice has no effect on our estimates at the municipality-term level, but affects the time-series patterns we observe for separation rates, particularly in the first year of the mayoral term.

[34] For all our regressions, when analyzing variables in levels (employment and hires) we take the logarithm of one plus the variable. We use the log specification due to the skewness of these variables. We take the logarithm of one plus the variable to include municipalities where the number of party members of either the winning or runner-up coalition employed or hired in the municipal public sector is zero. We obtain results similar to those reported throughout the paper if we exclude these observations, as they account for less than

in each municipality and term. In addition to our analysis at the municipality-term-coalition level, we also exploit the time series dimension of our data and analyze the employment of party members at the municipality-year-coalition level.

We construct similar measures of employment classifying jobs into occupational categories, using the Brazilian Occupational Classification (*Classificação Brasileira de Ocupações, CBO*). In particular, we classify jobs in five broad categories based on the first digit of the CBO: Senior officials and managers; Professionals; Mid-level technicians; Clerks; and Blue collar workers.[35] We also present data for a subset of the first category, focusing on the most senior officials in the municipal government, such as municipal secretaries, budget directors, and heads of government departments.[36]

In addition to studying the employment of party members, we also analyze their individual characteristics, such as education and wages. We also estimate the residuals from a Mincerian equation, defined over a large set of individual characteristics, to obtain a measure of personal ability, following the approach of Besley et al. (2017). In particular, for every year, state, and gender we estimate separate regressions of (log) earnings on a set of dummy variables for age, education, race, and industry, including a full set of interactions among these variables.[37] This flexible specification allows for time-varying returns to education, which might also differ across states, gender, race, and industries, and also allows for different age-earnings profile across industries, states, gender, and education. We estimate separate wage regressions for the municipal public sector, state and federal public sector, and the private sector. If ability is priced in the market, then wage residuals in the private sector should reflect personal ability. On the other hand, public sector pay is not set in competitive markets. Wages in the public sector are rarely linked to performance or effort, as the goals of many public agencies are multi-dimensional and hard to measure, making performance contracting very difficult (Holmstrom and Milgrom 1991; Baker 2002; Cameron,

1% of the observations in our sample. We winsorize all the variables calculated as ratios at the one percent level to reduce the potential influence of outliers. This procedure does not affect the results.

[35]Senior officials and managers correspond to CBO main group 1; Professionals correspond to CBO main group 2; and Mid-level technicians to main group 3. Clerks encompass main groups 4 (administrative services workers) and 5 (service workers and shop and market sales workers). Blue collar workers encompass main groups 6 (agricultural and fishery workers), 7 and 8 (industrial goods and services workers), and 9 (maintenance and repairs workers).

[36]This category corresponds to CBO sub-group 11.

[37]Our measure of earnings is gross and includes salary payments, performance-based bonuses, and commissions. The control variables included in the Mincerian regression are: a set of age indicators (defined over five-year intervals), a set of educational attainment indicators (separate dummies for completed high school; some college; and completed college or more), a dummy for white race, and a set of 17 industry indicators based on the major categories of the Brazilian National Economic Activity Classification (*Classificação Nacional de Atividades Econômicas, CNAE*). The regressions also include municipality fixed effects.

de Figueiredo and Lewis 2016). Also, civil service regulations typically limit the use of high-powered incentives (Johnson and Libecap 1994; Maranto 1998; Maranto 2001). Moreover, public sector workers might have some ability to determine their wages through the political process, particularly when they have strong labor unions (Freeman 1986; Zax and Ichniowski 1988; Brueckner and Neumark 2014). All these factors imply that public sector wages might not reflect productivity, and as a result wage residuals in this sector might not be interpreted as a measure of individual ability.

3.5 Sample Selection and Descriptive Statistics

Figure 1 presents descriptive statistics for political party membership in Brazil. In particular, the top graph shows the evolution of the ratio of political party members to the electorate for the period 1997-2013. Political party membership increased over this period from about 6.4% of the electorate in 1997 to 10.5% in 2013.[38] This represents more than 8 million new party members over this period. This increase contrasts with the evidence from developed countries, which shows a marked decline in the number of party members in most European countries in recent decades (Dalton and Weldon 2005; Van Biezen, Mair and Poguntke 2012). Moreover, the level of formal party membership seems quite high by international standards, as political party membership is below 5% of the electorate in most European countries (Scarrow 2015; Kölln 2016). The number of formal party members tends to follow a clear time pattern, increasing in the year before the municipal elections and then remaining relatively stable. This seems to be the result of electoral laws and internal party rules, which require members to be registered with a party for at least a year before the elections to be eligible to run for office and to be able to participate in municipal party conventions.[39] This suggests that internal party politics and candidate selection at the local level are major drivers of party membership (Speck 2013, Speck 2014). As shown in the bottom graph of Figure 1, party membership differs significantly across municipalities, with the ratio of political party members to the electorate exceeding 20% in more than 1,500 municipalities. Moreover, party membership tends to be higher (in relative terms) in smaller municipalities.

[38] Self-reported measures of party membership based on surveys show similar levels of party membership in Brazil. For instance, according to the World Values Survey, in 2006 10.2% of Brazilian respondents claimed to be members of a political party.

[39] Most parties require members to be registered for at least six months to participate in municipal party conventions, which traditionally took place in June of the electoral year. Parties also require a minimum level of participation of local members for these conventions to be valid, which might drive local party leaders to recruit new members. The minimum period of party membership required by law to run for office was reduced to six months in 2015.

Table 1 shows descriptive statistics for our matched individual-level data on employment and party membership, comparing workers who are never affiliated with a political party between 2002 and 2013 (column (1)) with workers who are members of a political party at some point during our sample period (column (2)). Panel A presents descriptive statistics for all the workers in our data, while Panel B compares the characteristics of party members and non-party members working in the municipal public sector, which is the main focus of our analysis. Panel A shows that, out of a total of 90.5 million workers in our RAIS sample, only 5.6 million are members of a political party at some point during our sample period. We find that party members are more likely to work in the public sector than non-party members. About 42% of the members of political parties worked in the public sector at some point during our sample period, with 17% of them working exclusively in the public sector. These figures stood at 17% and 10%, respectively, for non-party members. This pattern is consistent with survey evidence from European countries, which also show that political party members are more likely to be employed in the public sector (Koole and van Holsteyn 1999; Spier et al. 2011). This might be because party members have better access to public sector jobs due to their political connections, but could also reflect that they have a higher ability and/or willingness to work in the public sector than non-party members. In terms of individual characteristics, Panel B shows that party members that work in the municipal bureaucracy tend to be older and are less likely to be women than non-party members who also work in the municipal public sector. This is consistent with surveys of party members from European countries, which also find that party members ted to be older than non-members and are disproportionately male (Van Biezen, Mair and Poguntke 2012; Scarrow 2015). We also find that party members on average have fewer years of education, but have higher salaries, once we account for individual level characteristics.[40]

Brazil has 5,567 municipalities. After eliminating municipalities where only one candidate ran in the mayoral elections and municipalities with missing data, we are left with a sample of 5,532 municipalities for the mayoral terms 2005-2008 and 2009-2012.[41]

Table 2 presents descriptive statistics for the main measures of employment in the municipal public sector used in our empirical analysis. Panel A shows statistics for all municipal

[40] We conducted t-tests to compare the means of the different individual characteristics between political party members and non-members working in the municipal public sector and found that the differences are statistically significant for all variables.

[41] We have data on 5,364 municipalities for the term 2005-2008 and 5,272 municipalities for the term 2009-2012. We have data for both mayoral terms for 5,104 municipalities. We also estimated all our regressions restricting the sample to municipalities that we observe twice during our sample period and obtained results similar to those reported throughout the paper.

public sector workers. Panels B and C display statistics for party members employed in the municipal public sector that belong to the coalition of the winning mayoral candidate or the coalition of the runner-up mayoral candidate, respectively. The figures in Panel A show that the average municipality in our sample has 978 municipal public sector employees and hires 644 workers over the mayoral term. Regarding party members, the statistics in Table 2 show that party members belonging to the winning mayoral coalition account for 9.8% of total municipal public sector employees on average (Panel B), while party members of the runner-up coalition represent 6.1% on average (Panel C). While this difference could indicate that mayors tend to hire members of their own parties, it might also reflect differences in the number of members and/or their characteristics between the winning and runner-up parties.

Figure 2 illustrates the evolution of municipal public sector employment over our sample period. Figure 2.1 shows the number of employees working in the municipal bureaucracy averaged across the municipalities in our sample. The average number of municipal public sector employees increased from 658 in 2002 to almost 1,158 in 2013. This reflects both an increase in the total number of public sector workers and, more importantly, a growing participation of municipal bureaucracies in overall public sector employment, as a result of increasing decentralization. Brazil showed a strong labor market performance over our sample period, with significant job creation, particularly in the formal sector. As a result, unemployment and informality decreased significantly and hit record lows, despite an increasing labour force participation rate (Menezes-Filho and Scorzafave 2007; Silva, Almeida and Strokova 2015). Reflecting the significant expansion in formal private sector employment, the ratio of municipal public sector workers to total formal sector workers decreased over our sample period, from an average across municipalities of 43% in 2002 to 39% in 2013 (Figure 2.2). Despite this decrease, the municipal public sector is still a major employer in many municipalities, accounting for more than a third of formal sector employment in almost 2,600 of the municipalities in our sample in 2013.[42]

4 Empirical Strategy

Identifying the causal effect of being the party in office on the public employment of members of the ruling party is challenging, as party membership is likely to be correlated with

[42]The fraction of formal sector employment accounted for by municipal public sector workers is significantly higher in smaller municipalities. If we consider the median across municipalities of this fraction, we observe a decrease from 36% in 2002 to 32% in 2013. At an aggregate level, municipal public sector employment accounted for about 9% of total formal employment in Brazil in 2013.

both public sector employment and electoral outcomes. Comparing the public sector employment of members of a given party between municipalities where the party is in power and municipalities where it is not, is likely to generate biased estimates, as municipality characteristics such as voter preferences and demographics could be correlated both with the employment of party members in the municipal public sector and with electoral outcomes. Even a comparison between the employment of party members of different parties within a given municipality might generate biased estimates. Parties that are more popular in a given municipality are more likely to win local elections and might also have more members working in the municipal bureaucracy, because their members account for a higher fraction of the local population. Moreover, not only the number of party members but also their characteristics might differ across parties, and this could also be correlated with electoral outcomes. For instance, parties whose members have a higher ability and/or willingness to work in the public sector might have more municipal employees and also be more likely to get elected. Therefore, directly comparing outcomes for different parties in a given municipality could result in a correlation between electoral success and public sector employment that does not reflect a casual effect.

To deal with this challenge and address the presence of both time-invariant and time-varying confounding factors, we estimate the causal effect of party membership on public sector employment using a Regression Discontinuity Design (RDD) in close races within municipality. In particular, for a given municipality and mayoral term, we compare the employment in the municipal public sector of members of the party that barely won an election with that of members of the party that barely lost the election (i.e., the runner-up party). This approach provides quasi-random assignment of the winner party. The intuition for our identification strategy is that, within a given municipality, parties that lost an election by a narrow margin can be a good counterfactual for parties that won that same election by a narrow margin. Note that, differently from other settings, in our case we observe outcomes (e.g., public sector employment) in a given municipality and mayoral term both for members of the winning party and for members of the runner-up party. This allows us to analyze close races within a given municipality, comparing outcomes between parties and abstracting from any differences across municipalities.

Our main outcome of interest is the public sector employment of members of the party of the winning/runner-up mayoral candidate in a given municipality and term. We start our analysis aggregating all outcomes at the municipality, electoral coalition, and mayoral term level.

Define $\tau_{pmj}(1)$ as the potential public sector employment of members of party p in municipality m and mayoral term j if party p is in power, and $\tau_{pmj}(0)$ as the potential public sector employment of members of the same party in the same municipality and term if the party is not in power. We are interested in estimating the difference in potential outcomes, but the problem of causal inference is that, at a given point in time, we cannot observe both potential outcomes. The variable $Winner_{pmj}$ defines the treatment status: $Winner_{pmj} = 1$ if party p is in power in municipality m and mayoral term j, and $Winner_{pmj} = 0$ otherwise, The observed outcome is thus $\tau_{pmj} = Winner_{pmj} \cdot \tau_{pmj}(1) + (1 - Winner_{pmj}) \cdot \tau_{pmj}(0)$. The estimand of interest is the average treatment effect (ATE): $E[\tau_{pmj}(1) - \tau_{pmj}(0)]$.

Our analysis focuses on the mayoral terms 2005-2008 and 2009-2012. We consider the mayoral elections held in October 2004 and 2008 to calculate the margin of victory of party p in the mayoral elections in municipality m before term j (MV_{pmj}).[43] At the threshold $MV_{pmj} = 0$ there is a sharp change in $Winner_{pmj}$: for $MV_{pmj} > 0$ the candidate won the election in 2004 (2008), so she is in power in the term 2005-2008 (2009-2012), that is, $Winner_{pmj} = 1$. For $MV_{pmj} < 0$ the candidate lost the election in 2004 (2008), so she is not in power in the term 2005-2008 (2009-2012), $Winner_{pmj} = 0$. MV_{pmj} can be considered as a random variable that depends on both observable and unobservable factors, as well as on random events on election day. The standard RDD assumption is that potential outcomes must be a continuous function of the running variable (margin of victory in our case) at the threshold (Hahn, Todd and Van der Klaauw 2001). We indirectly test this assumption in Section 5.2 below.

The ATE in close elections is thus:

$$\gamma \equiv E[\tau_{pmj}(1) - \tau_{pmj}(0)|MV_{pmj} = 0] = \lim_{\epsilon \downarrow 0} E[\tau_{pmj}|MV_{pmj} = \epsilon] - \lim_{\epsilon \uparrow 0} E[\tau_{pmj}|MV_{pmj} = \epsilon] \tag{E.1}$$

where γ is a local effect that captures the impact of winning the election (and being the party in power over the corresponding mayoral term) on the outcome of interest (e.g., public sector employment) only for parties around the threshold $MV = 0$ (i.e. for elections that were decided for a margin that is tiny enough).

[43] We consider the margin of victory between the first and the second mayoral candidates in terms of share of votes. Our sample includes all municipalities where at least two mayoral candidates ran. We obtain similar results if we restrict our analysis to races with only two candidates. These results are reported in Appendix Table A.7.

4.1 Estimation

We first analyse whether winning office is correlated with the employment of party members in the municipal public sector by estimating the following OLS equation:

$$\tau_{pmj} = \pi_0 Winner_{pmj} + \alpha_j + \sigma_m + \theta_{pj} + \varepsilon_{pmj} \tag{E.2}$$

where τ_{pmjt} is a measure of the public sector employment of members of party p, in municipality m, in term j. $Winner_{pmj}$ is a dummy that equals one if party p won the elections and is in power in municipality m and mayoral term j, and zero otherwise (i.e., for the runner-up party). α_j are term fixed effects; σ_m are municipality fixed effects; θ_{pj} are political party-term fixed effects; and standard errors are clustered at the municipality level. We report the coefficient $\hat{\pi}_0$, which does not have a casual interpretation, as party membership is likely to be correlated with both public sector employment and electoral outcomes.

To estimate the ATE in equation (E.1) we use two different methods, following the literature. First, we fit a q-order polynomial in MV_{pmj} on either side of the threshold $MV_{pmj} = 0$:

$$\tau_{pmj} = \sum_{k=0}^{q} \rho_k MV_{pmj}^k + Winner_{pmj} \sum_{k=0}^{q} \delta_k MV_{pmj}^k + \alpha_j + \sigma_m + \theta_{pj} + \varepsilon_{pmj} \tag{E.3}$$

where all the variables are defined as above. Standard errors are clustered at the municipality level.[44,45] The estimated coefficient $\hat{\delta}_0$ identifies the ATE at the threshold $MV_{pmj} = 0$. We follow the standard procedure in the literature (Gelman and Imbens 2017) and present results for a second order polynomial.[46] Following Imbens and Lemieux (2008), we also use a local linear regression approach, which restricts the sample to observations in the interval $MV_{pmj} \in [-h, +h]$ and estimates the following regression:

$$\tau_{pmj} = \rho_0 + \rho_1 MV_{pmj} + \delta_1 Winner_{pmj} + \delta_0 Winner_{pmj} \cdot MV_{pmj} + \alpha_j + \sigma_m + \theta_{pj} + \varepsilon_{pmj} \tag{E.4}$$

Again, $\hat{\delta}_0$ identifies the ATE at the threshold $MV_{pmj} = 0$. We estimate the optimal bandwidth

[44] These regressions include separate municipality and term fixed effects. We also estimated all our regressions including municipality-term fixed effects instead and obtained results similar to those reported throughout the paper. When including municipality-term fixed effects, we cannot include the interaction between the winner dummy and the margin of victory due to collinearity (because the margin of victory is the same, with opposite sign, for the winner and the runner-up party in a given municipality and election). We report results with separate term and municipality fixed effects to make our results comparable to the literature.

[45] We also estimated all our regressions using the multi-way clustering method of Cameron, Gelbach and Miller (2011), clustering at municipality and political party dimensions and found similar results.

[46] We also estimated all our regressions considering a third-order polynomial and obtained similar results.

h using the algorithm by Calonico, Cattaneo and Titiunik (2014). We also present results considering three alternative bandwidths: 5%, 2.5%, and 1%.

Finally, we also exploit the time series dimension of our data, extending our RDD in close races within municipality to a difference-in-difference (DiD) framework, using annual data. To do this, for each municipality and mayoral term, we use seven annual observations, including three years before the beginning of the term and the four years of the term, and we have two observations per year, one for members of the winning party and one for members of the runner-up party.

We estimate the following regression:

$$\tau_{pmjt} = \beta_0 Winner_{pmj} + \sum_{t=1}^{4} \gamma_t (Year_t \cdot Winner_{pmj}) + \sum_{t=-2}^{4} \sum_{k=1}^{q} \rho_{kt} (Year_t \cdot MV_{pmj}^k) + \sum_{t=-2}^{4} \sum_{k=1}^{q} \delta_{kt} (Year_t \cdot Winner_{pmj} \cdot MV_{pmj}^k) + \sigma_m + \alpha_{jt} + \theta_{pjt} + \epsilon_{pmjt} \quad \text{(E.5)}$$

where τ_{pmjt} is some outcome of interest (e.g., public sector employment) for members of party p, in municipality m, in period (e.g., year) t of term j. t is defined relative to the electoral year and it goes from -2 (two years before the elections) to +4 (four years after the elections, the end of the mayoral term). $Year_t$ are dummy variables for period t. We include municipality fixed effects (σ_m), term-period fixed effects (α_{jt}), and political party-term-period fixed effects (θ_{pjt}).[47] We allow the effect of the margin of victory to vary not only between winners and runner-ups, but also over time. The estimated coefficients of interest $\hat{\gamma}_1$, $\hat{\gamma}_2$, $\hat{\gamma}_3$, and $\hat{\gamma}_4$ identify the ATE of winning an election on the outcome for each year of the mayoral term, compared to the excluded category. This allows us to analyze how the effect of winning an election on the employment of members of the wining party in the municipal bureaucracy varies over time during the mayoral term, rather than measuring the average effect of winning over the four years of the mayoral term as our term-level analysis. We estimate these ATEs using a second order polynomial.[48]

To illustrate the results of our RDD difference-in-difference estimations, we also present

[47] We also estimated all our regressions including municipality-term-period fixed effects, instead of separate municipality and term-period fixed effects, and obtained results similar to those reported throughout the paper. When including municipality-term-period fixed effects, we cannot include the interaction between the winner dummy and the margin of victory due to collinearity (because the margin of victory is the same, with opposite sign, for the winning and runner-up parties in a given municipality and election). We report results with separate term-period and municipality fixed effects to make our results comparable to the literature.

[48] We also estimated these ATEs using local linear regressions with different bandwidths (5%, 2.5%, and 1%) and found similar results.

some graphical results, plotting the estimated coefficients from a regression similar to (E.5), allowing the difference between the winner and runner-up parties to vary over time not only during the mayoral term, but also before the beginning of the term. In particular, we estimate the following regression:

$$\tau_{pmjt} = \beta_0 Winner_{pmj} + \sum_{t=-2}^{4} \gamma_t (Year_t \cdot Winner_{pmj}) + \sum_{t=-2}^{4} \sum_{k=1}^{q} \rho_{kt} (Year_t \cdot MV^k_{pmj}) + \sum_{t=-2}^{4} \sum_{k=1}^{q} \delta_{kt} (Year_t \cdot Winner_{pmj} \cdot MV^k_{pmj}) + \sigma_m + \alpha_{jt} + \theta_{pjt} + \epsilon_{pmjt} \quad \text{(E.6)}$$

where all variables are defined as above. We drop the γ_t coefficient for the electoral year ($t = 0$) due to collinearity, so all γ_t coefficients capture differences relative to the year before the start of the term.

5 Effect of Winning Office on the Employment of Party Members in the Municipal Public Sector

5.1 Main Results

Table 3 present our main estimates of the effect of being in office on the employment of members of the ruling party in the municipal bureaucracy, using a Regression Discontinuity Design in close races within municipality. For each municipality and mayoral term we have two observations, one for members of political parties belonging to the winning local electoral coalition and one for members of parties in the runner-up coalition. The dependent variable in Panel A is (the log of one plus) the number of party members of each coalition working in the municipal public sector in a given year, averaged over the mayoral term. The dependent variable in Panel B is the ratio of the number of party members of each coalition employed in the municipal public sector to total municipal public sector workers in each year, averaged over the mayoral term. Column (1) reports OLS estimates following equation (E.2). Column (2) presents RDD estimates following equation (E.3), using a second-order polynomial in the margin of victory. Columns (3) to (6) present local linear regression estimates based on equation (E.4) and considering alternative bandwidths: optimal bandwidth calculated following Calonico, Cattaneo and Titiunik (2014) (column (3)), 5% (column (4)), 2.5% (column (5)), and 1% (column (6)).

The results in Table 3 show that winning a mayoral election has a positive and significant effect on the employment of members of the winning party in the municipal bureaucracy. The results in Panel A imply that the number of members of the winning party employed by the municipal public sector in a given municipality and term is around 35% to 41% higher than the same figure for members of the runner-up party. This represents between 14 and 17 additional jobs in the municipal public sector for members of the winning party. The results in Panel B are consistent with these findings and imply that winning an election leads to an increase in the fraction of total municipal public sector employees accounted for by members of the winning party of between 2 and 2.5 percentage points (relative to members of the runner-up party).

Figure 3 illustrates the results of our RDD estimates. In particular, this figure shows scatterplots of the dependent variables analyzed in Table 3. The variable on the x-axis is the margin of victory, and observations are averaged within bins of two percent of margin of victory. We plot the average of our dependent variables for party members belonging to the winning coalition (to the right of the cutoff $MV_{pmj} = 0$) and for party members belonging to the runner-up coalition (to the left of the cutoff $MV_{pmj} = 0$). Consistent with the results in Table 3, we find a clear discontinuity around the cut-off, indicating that winning an election leads to significant increase in the number of members of the winning party working in the municipal public sector, both in absolute terms and as a fraction of total municipal public sector employees.

The results in Table 3 show that winning an election leads to an increase in the employment of members of political parties belonging to the coalition of the winning mayoral candidate in the municipal bureaucracy, relative to members of parties in the runner-up coalition. This finding could be driven either by increased hiring of party members of the ruling coalition or by a reduction in the employment of supporters of the runner-up candidate (or a combination of the two).[49] To try to disentangle these two possible channels, we analyze worker flows into and out of the municipal bureaucracy.[50]

Table 4 reports the results of our RDD estimates analyzing hires and separations. Panel A presents RDD estimates following equation (E.3), using a second-order polynomial in the margin of victory. Panels (B) and (C) present local linear regression estimates, based on equation (E.4) and considering observations within a bandwidth of 2.5% and 1% around

[49]Evidence from other countries suggests that politicians might discriminate against their opponents' supporters (see, for instance, Tremewan 1996; Hsieh, Miguel and Ortega 2011; Fafchamps and Labonne 2017).

[50]While we can identify separations, we cannot accurately tell whether workers who leave the municipal public sector do so voluntarily or are fired.

the cut-off ($MV_{pmj} = 0$), respectively. We find that winning an election has a positive and significant effect on the hiring of members of the winning party by the municipal public sector. For instance, the results in column (1) show that the number of members of parties belonging to the winning coalition hired over the mayoral term is around 67% to 80% higher than the same figure for members of parties in the runner-up coalition. This represents about 11 to 13 additional hirings of members of the winning party, which is broadly consistent with the magnitudes we find in Table 3. We find similar effects when analyzing the share of total hires by the municipal public sector accounted for by members of the winning/runner-up coalitions (column (2)). Regarding separations, the results in column (3) suggest that the average annual separation rate of members of the winning party is actually higher than that of members of the runner-up party.[51,52] This may be because some of the members of the ruling party may be hired under temporary contracts and/or because some of them might leave the municipal bureaucracy at the end of the mayoral term.[53] In any case, these findings suggest that the results in Table 3 are mostly driven by increased hiring of members of the ruling party, and not by members of the opposition party leaving the municipal public sector.[54]

Figure 4 presents scatter plots of the outcome variables analyzed in Table 4. Visual inspection of these graphs confirms the results described above, as there are visible discontinuities around the cut-off for all variables.[55]

[51]Note that the number of observations for the separation rate is slightly lower than for the other variables. This is because a small number of municipalities do not employ any members of either the winning or the runner-up parties, and thus we cannot calculate the separation rate for those observations.

[52]We find similar results if we analyze (the log of one plus) the number of separations, instead of the separation rate. We focus on the separation rate because the number of separations could be affected by the fact that the number of members of the winning party working in the municipal bureaucracy increases after their party gets to power. Given this increase, we could find that more members of the winning party leave the municipal bureaucracy at some point during the mayoral term, even if they actually had a lower probability of leaving than members of the runner-up party.

[53]In unreported robustness tests, we differentiated between different types of contracts in the municipal public sector and found that winning an election increases hiring of members of the winning party both under temporary and permanent contracts.

[54]Table 7 analyzes how the effect of winning an election on the separation rate varies over time during the mayoral term. The results show that members of the runner-up party are more likely to leave the municipal public sector in the first year of the mayoral term (while the opposite is the case in all other years of the term). However, this effect is relatively small and most of the relative increase in the number of members of the winning party employed in the municipal pubic sector is driven by hiring of party members.

[55]In all these figures, outcomes are averaged into bins of intervals of the margin of victory. Given that the density of the margin of victory is concentrated around zero, points closer to zero (close races) contain more information compared to those far from the zero and are more relevant for the estimation of the split second-order polynomial in margin of victory displayed in the figures and for our RDD estimates.

5.2 Robustness and Extensions

Our main results show that winning an election leads to an increase in the number of party members belonging to the winning electoral coalition employed in the municipal public sector. To provide further evidence on the effects of winning office, we also analyze whether winning a mayoral election has any effect on the employment of party members in the non-municipal (i.e., state and federal) public sector. It is not clear what we should expect in this regard. On the one hand, mayors have no control over employment in other levels of government, so belonging to the party of the winning mayor may have no effect on employment of party members at the state and federal levels. On the other hand, if state or federal authorities need the support of mayors, they might hire their supporters. These results are reported in Appendix Table A.2. We find no effect of belonging to the party of the winning mayor on employment in other levels of government. We also analyze employment outcomes in the private sector. Again, it s not clear whether we should expect to find any effects or not. Private employers may increase their hiring of members of the winning party in the expectation of political favors and/or to improve their connections with the municipal government. On the other hand, some members of the winning party might leave the private sector to join the municipal public sector.[56] The results reported in Appendix Table A.3 show that there is no effect of winning the mayoral elections on the employment of members of the winning party in the private sector.[57] Overall, these results indicate that our main findings reflect the allocation of those jobs that the mayor can directly influence.

Our estimation strategy controls for time-invariant and time-varying differences across parties within a given municipality. Therefore, we should not expect any differences between treatment and control groups around the cutoff $MV_{pmj} = 0$ before the beginning of the mayoral term. Appendix Tables A.4 reports balance tests analyzing all the measures of employment in the municipal public sector that we study in Tables 3 and 4 in the year

[56] Note that the fact that we find an increase in the number of members of the winning party working in the municipal bureaucracy does not imply that we should observe a corresponding reduction in the number of winning party members working in the formal private sector. Members of the winning party that are hired by the municipal public sector could be coming from outside the labor force (e.g., if they were unemployed or not looking for a job before being hired), from the informal sector, or from occupations not covered by *RAIS*, such as self-employment. Indeed, we find that on average almost 70% of all workers hired by the municipal public sector in a given year were not working in the formal sector in the previous year. The private sector shows a similar pattern, with most of the new hires by private firms coming either from outside the labor force, unemployment, or the informal sector, and not from other formal sector employers. See Hoek (2007) and Bosch, Goni and Maloney (2007) for analyses of worker flows across sectors in Brazil.

[57] Gagliarducci and Manacorda (2017) find that private firms in Italy are more likely to grant jobs to family members of politicians, in expectation for political favors. Our results may differ from theirs because the type of ties that we analyze (being a member of the party of the mayor) are weaker.

before the beginning of the mayoral term.[58,59] We find that there are no differences in the employment of members of the winning and the runner-up parties in the municipal public sector before the start of the mayoral term in close races. Appendix Table A.5 reports results for the total number of party members, as well as their characteristics, including age, gender, race, education, and wages, showing no differences between treatment and control groups around the cutoff $MV_{pmj} = 0$ in the electoral year.[60]Overall, these results confirm that our main findings reflect the causal effect of winning an election on the employment of party members in the municipal public sector, and not any pre-existing differences between members of the winning and runner-up parties in close races. In addition, Appendix Table A.6 reports the results of balance checks for several mayoral candidate characteristics, showing that there is no discontinuity around the cutoff $MV_{pmj} = 0$.

We conducted several additional tests to confirm the robustness of our results and provide further evidence. First, we re-estimated the RDD local linear regressions presented in Table 3 considering alternative bandwidths. In particular, we estimated 50 separate regressions for bandwidths of varying size from 0.005 to 0.25, considering increments of 0.005. The results reported in Appendix Figure A.1 show that, although the estimates are somewhat noisier closer to the threshold $MV_{pmj} = 0$, we find statistically significant differences even when considering a bandwidth of 0.005. Moreover, the size of the estimated coefficients is relatively similar when considering narrow and broad bandwidths. This suggest that our estimates do not just reflect something particular about close electoral races (for instance, that after a close race, mayors might hire more party members in order to shore up support amongst their base).

Second, Cattaneo et al. (2016) highlight than in electoral races with more than two

[58]Given that municipal elections take place at the beginning of October, for these balance tests we exclude hires and separations that took place after September, to avoid capturing any changes in the employment of party members in the municipal public sector that might have occurred after the elections. Indeed, if we analyze separations after September we find a negative effect, suggesting that members of the winning party were less likely to leave the municipal public sector once the electoral result was know, even though the new mayoral term had not yet started.

[59]Note that the number of observations in Appendix Table A.4 differs slightly from that in Table 4 for some variables. In particular, for the share of municipal hires there are fewer observations in Appendix Table A.4 as some municipalities did not hire any workers in the electoral year (but might have hired workers at some point during the following term, and thus are included in the analysis in Table 4). Similarly, for the separation rate there fewer observations in Appendix Table A.4, as some municipalities did not employ any members of either the winning or the runner-up coalitions in the year before the beginning of the term.

[60]Appendix Table A.5 reports results considering the characteristics of all members of the winning and runner-up parties in a given municipality.We also conducted these balance tests restricting the sample to party members employed in the municipal public sector and found similar results; that is, there is no difference in the characteristics of members of the winning and runner-up parties working in the municipal bureaucracy before the start of the mayoral term in close races.

candidates, races decided by the same margin of victory might result in winners with very different actual vote shares. This implies that RDD estimates that pool all races reflect the average effect of barely winning at different cuts, which might be correlated with the electoral environment. To address this concern, we re-estimated all the regressions reported in Tables 3 and 4 considering only races involving two candidates, for which the victory cutoff is always 50% of the vote. The results are reported in Appendix Table A.7 and show that we obtain similar results when restricting the sample to two-candidate races.

Third, as described above, we aggregate up the outcomes for members of all political parties that belong either to the winning or the runner-up coalitions, because most parties run in the mayoral elections as part of electoral coalitions. As a robustness check, we re-estimated our results without aggregating outcomes for all the parties that belong to a coalition, but rather considering only members of the leading party in the runner-up or winning coalitions. These results are reported in Appendix Table A.8 and show that we find similar results when considering only the leading parties in each coalition. The estimated coefficients for the percentage changes (i.e., columns (1) and (3)) are larger than in our main regressions, suggesting that the leading party in the winning coalition may favor its own members in hiring, relative to members of the other parties in the coalition.[61]

Fourth, our results on the level of employment of party members in the municipal public sector could be affected by party switching if individuals who had public sector jobs before the election become members of the ruling party (or quit the runner-up party) after the election. The fact that we find that our results are mostly accounted for by the hiring of party members shows that changes in the party membership of pre-existing public sector workers are not driving our results. To address this concern more directly, we re-estimated all our regressions taking an individual's political party membership in the electoral year (before October, when the elections take place) and maintaining it constant for the whole mayoral term to avoid capturing changes in party membership that occurred after the elections. Appendix Table A.9 presents these results, which are similar to those reported throughout the paper. In terms of economic magnitude, we find that winning an election leads to between 10 and 13 additional jobs in the municipal public sector for members of the winning coalition. This figure is slightly lower than the one for the same specification in Table 4 suggesting that party switching accounts for a relatively small fraction of our results. Estimates for hirings are of similar magnitude as those in Table 4 and show that the higher number of members

[61] The estimates that capture the employment and hiring of party members relative to the totals for the municipal public sector are, of course, smaller because we are considering a smaller number of party members when we only focus the leading parties in each coalition.

of the winning coalition working in the municipal public sector is driven by increased hiring following the elections.

Finally, in addition to our RDD in close races within municipality, we also conducted an RDD in close races across municipalities, which is similar to standard regression discontinuity designs in the literature. In particular, for a given party, we compare the public sector employment of its members in municipalities where the party barely won an election with municipalities where the party barely lost an election. We view this approach as complementary to our main empirical approach, and it can provide additional information, by highlighting any differences across parties in the extent to which they favor their party members in hiring. The results from this alternative identification strategy are discussed in Appendix B. Overall, we find that considering an RDD in close races across municipalities, within a given party, yields similar results as our main approach. Moreover, we do not find any qualitative differences across parties, as all parties increase the hiring of their own members when they win the mayoral elections.[62]

5.3 Differences across Occupations

The results reported above show that winning an election leads to an increase in the number of members of the winning party employed in the municipal public sector, indicating that mayors use their discretionary powers to grant jobs to their party members. As discussed in the Introduction, this could reflect the use of jobs as tool to gain political support. But it might also be a way of making the bureaucracy more responsive to political leadership and electoral pledges. This potential benefit of political discretion over the bureaucracy is likely to be more relevant for senior management positions (Müller 2006).[63] To provide evidence

[62] As an alternative, to analyze whether the effects we find differ across political parties, we also estimated our main regressions interacting our baseline RD spline polynomial specification with different dummy variables for the main political parties in Brazil. It is worth stressing that while these interaction terms provide information about the heterogeneity of the effect of being the party in power, they cannot be interpreted as causal. We find that the interaction terms are not statistically significant in most cases, suggesting that all the major political parties increase the hiring of their own members to a relatively similar extent when in power at the local level. This finding is consistent with some existing evidence on discretionary appointments at the national level in other countries. For instance, Dahlström and Niklasson (2013) find that left and centre-right governments in Sweden tend to make political appointments to approximately the same degree. Similarly, Lewis (2010) and Bumgarner and Newswander (2012) find that Republican and Democratic presidents make political appointments more or less to the same extent.

[63] Appointments to senior positions could also be used as a way to reward party members and promote party cohesion, as these positions might offer higher salaries, contacts, and prestige. Thus, the level of politically appointed positions can only provide suggestive evidence on the motivations for discretionary appointments.

in this regard, in this Section we analyze the employment of members of the winning and runner-up parties in different occupational categories in the public sector.

Table 5 reports these results. In particular, we estimate separate regressions for each occupational category following equation (E.3), using a second-order polynomial in the margin of victory.[64] The dependent variable in Panel A is (the log of one plus) the number of members of the winning or runner-up coalitions employed in each occupation in each year, averaged over the mayoral term. The dependent variable in Panel B is the ratio of the number of party members of each coalition employed in a given occupation to the total number of municipal workers in that occupation, averaged over the mayoral term. Each column presents results for a different occupational category.

The results reported in Table 5 show that winning a mayoral election has a positive and significant effect on the employment of members of the winning party across all occupational categories in the municipal bureaucracy. This effect is larger (in relative terms) for the top positions. For instance, the estimates in column (1) of Panel A imply that the number of members of the winning party employed as senior officials and managers in the municipal public sector is almost 90% higher than the same figure for members of the runner-up party. In contrast, this difference is less than 20% for mid-level technicians (column (4)) and blue collar workers (column (6)). In absolute terms, the largest increase in the number of members of the winning party working in the municipal bureaucracy is in clerical positions: the results in column (5) imply that winning an election leads to 6 additional clerical jobs for members of the winning party. Similar patterns are visible when analyzing the share of members of the winning and runner-up parties in each occupation (Panel B). These results show that winning an election leads to an increase of about 12 percentage points in the share of senior positions in the municipal public sector held by members of the winning party, relative to members of the runner-up party (columns (1) and (2)).

Figures 5 and 6 present scatter plots of the variables analyzed in Table 6 for the different employment categories. In particular Figure 5 presents graphs for (the log of one plus) the number of members of the winning and runner-up coalitions employed in each occupational category and Figure 6 analyzes the share of party members of each coalition employed in a given occupation. Visual inspection of these graphs confirms the results described above, as there are visible discontinuities around the cut-off for all variables and occupational categories.

The results in Table 5 suggest that discretionary appointments to public sector jobs

[64] We also conducted these analyses using a local linear regression considering alternative bandwidths (5%, 2.5%, and 1%) and obtained similar results.

are used by mayors both to control the management of public policies and to reward and motivate supporters of the ruling party. In particular, the fact that the largest increase in relative terms occurs for senior positions suggests that the need to align bureaucrat's actions with the interests of elected politicians is a major determinant of discretionary hiring by mayors. Moreover, as described above, the law affords mayors more flexibility in hiring for these positions. However, we also find large increases in the number of members of the winning party in lower-ranked positions, such as clerical jobs, suggesting that the need to reward supporters (either as an electoral tool or to help sustain the party organization) also plays an important role in hiring decisions.

We also conducted several additional tests. First, we analyzed hirings and promotions into senior positions in the bureaucracy. The higher number of members of the winning party working in senior positions that we find in Table 6 could be driven either by the promotion to these positions of members of the winning party that were already employed in the municipal public sector before the party came to office, or by the hiring into these positions of party members from outside the public sector after taking power. To disentangle these two possible channels, we analyzed promotions and hirings into senior positions in the municipal bureaucracy separately. These results, presented in Appendix Table A.10, show that the higher number of members of the winning party working in senior positions is mostly driven by hiring of party members from outside the public sector, with promotions playing a smaller role.

Second, we also analyzed hirings for all other occupational categories and found that the higher number of members of the winning party employed in the different occupations is mostly accounted for by the hiring of party members following the elections.[65]

Finally, we also analyzed the effects of winning office on the wages of members of the ruling party working in the municipal public sector for the different occupational categories. Politicians could attract or reward their supporters by offering them not only jobs in the public sector, but also higher paying jobs. To analyze whether this is the case, we estimated regressions following equation (E.3), using as dependent variable (the log of) the average wage of members of the winning and runner-up parties in the different occupational categories in the public sector during the mayoral term. To account for potential differences in the individual characteristics of members of the winning and runner-up parties, we also estimated regressions using as dependent variable the average wage residuals of members of each party in the different occupational categories, estimated from a Mincerian equation, as described

[65] We did not analyze promotions for these occupational categories, as we cannot identify hierarchies across and within these categories.

above. These results, reported in Appendix Table A.11, show that for all occupational categories in the public sector, winning office has a positive effect on the wages and wage residuals of members of the winning party (relative to members of the runner-up party). Given that civil service regulations restrict the ability of mayors to set different wages for the same position, these results are likely to reflect the fact that members of the winning party might be employed in higher/better paying positions within each occupational category.

6 Effect of Winning Office on the Quality of Party Members Hired by the Municipal Public Sector

The results presented above show that mayors use their discretionary powers to grant government jobs to members of their own political parties. A key question is whether this has any effect on the quality of workers hired by the public sector. As discussed above, common stereotypes hold that discretionary appointees tend to lack the required expertise for their jobs, as their appointment is based on political or personal connections, and not on their qualifications. From this perspective, civil service proponents argue that meritocratic recruitment is required to ensure the selection of qualified individuals. On the other hand, politicians may have better information on the quality of members of their own party, which might allow them to select good candidates. And the use of discretionary appointments is not necessarily incompatible with competence, as elected officials have incentives to hire bureaucrats who can perform their jobs effectively. From this perspective, office holders may use discretionary appointments to hire high quality party members, as a way of ensuring "responsive competence" (Suleiman 2003).

To study whether the use of discretionary appointments to hire members of the winning party affects the quality of the workers selected, we analyze several characteristics of members of the winning and runner-up parties hired by the municipal bureaucracy from the private sector. In particular, we focus on (1) education, proxied by years of schooling; (2) private sector wages; and (3) private sector wage residuals, estimated from a Mincerian equation as described above. To conduct this analysis, we must restrict the sample to workers hired from the private sector, as only for these workers we can observe private wages to construct our measure of personal ability. For each of these three characteristics, we take its value in the year before a worker joined the municipal bureaucracy and then calculate the average of this variable over the whole mayoral term for members of the winning and runner-up parties hired by the municipal public sector. We do this separately for each occupational category,

as worker characteristics and qualifications are likely to differ across occupations.

Table 6 reports the results of our RDD estimates analyzing the quality of party members hired by the public sector. In particular, we estimate separate regressions for each occupational category following equation (E.3), using a second-order polynomial in the margin of victory.[66] The dependent variable in Panel A is the average years of schooling of members of the winning and runner-up coalitions hired from the private sector during the mayoral term. The dependent variables in Panels B and C are the average private sector wage and wage residuals, respectively, of party members of each coalition hired. Each column presents results for a given occupational category.[67]

The results in Table 6 show that the quality of members of the winning party hired after the party takes office is similar, if not higher, than that of members of the runner-up party. In particular, the results in Panel (A) show that there are no significant differences in terms of years of education between members of the winning and runner-up parties.[68] When analyzing private sector wages (Panel B) we find that members of the winning party hired in senior positions in the municipal bureaucracy tend to have higher private sector wages before joining than members of the runner-up party hired for similar occupations. For the other occupational categories we find no significant differences. A similar pattern is visible for wage residuals (Panel C), with members of the winning party hired in senior positions having higher residuals than members of the runner-up party hired in similar positions.[69]

A potential concern about these results is that high quality members of the opposition party might be less willing to work for the party in power. As a result, only lower quality members of the runner-up party may be included in our analysis, leading us to overestimate the effect of winning office on the quality of members of the winning party. To address this concern, we compared the characteristics of members of the runner-up party hired from the private sector in the three years before the start of the mayoral term and in the following four years (e.g., the whole duration of the mayoral term). We found no significant change after the elections, suggesting that a reduction in the quality of members of the runner-up

[66] We also conducted these analyses using a local linear regression considering alternative bandwidths (5%, 2.5%, and 1%) and obtained similar results.

[67] Note that the number of observations in Table 6 is significantly lower than that in Table 5, as we can only estimate our measures of quality for those municipalities that hired members of both the winning and runner-parties from the private sector for a particular occupation during the mayoral term.

[68] As an alternative to using this linear measure of education, we also estimated these regressions using as dependent variables, alternatively, the fraction of members of the winning and runner-up parties that completed high school and the fraction that completed college, and obtained similar results.

[69] We also estimated these regressions using as dependent variables the deciles of the wages and wage residuals, alternatively, and obtained similar results.

party hired by the municipal government does not account for our results.

Overall, these results show that, contrary to the common perception that discretionary appointments lead to the selection of unqualified appointees, the discretionary hiring of members of the winning party is no resulting in the selection of lower quality appointees. Our findings also suggest that elected officials may be using their discretionary powers to appoint high quality party members to senior positions, consistent with the idea that politicians value both loyalty and expertise when appointing senior bureaucrats.

7 RDD in Close Races Within Municipality - Difference-in-Difference Analysis

All the results presented above focus on the average effect of winning an election on the employment of members of the winning party over the four years of the mayoral term. In this section we exploit the time series dimension of our data to analyze whether this effect varies over time during the mayoral term. To do this, we extend our main empirical approach to a difference-in-difference framework using annual data, as described above.

7.1 Main Results

Table 7 presents our main estimates of the impact of wining office on the employment of members of the winning party in the municipal bureaucracy using our RDD difference-in-difference approach. In particular, this table shows the results of estimates following equation (E.5), using a second-order polynomial in the margin of victory.[70,71] For each municipality and term, we have seven annual observations, including three years before the beginning of the term and the four years of the term, and we have two observations in each year, one for party members belonging to the winning local electoral coalition and one for party members of the runner-up coalition. The dependent variable in column (1) is (the log of one plus) the number of party members of each coalition working in the municipal public sector at any point during a given year. The dependent variable in column (2) is the ratio of the number of party members of each coalition employed in the municipal public sector to total municipal public sector workers in each year. Column (3) reports results for (the log of one plus)

[70] We only report the results for the coefficients that measure the difference between the winning and the runner-up coalition in each year of the mayoral term (i.e., $\hat{\gamma}_1, \hat{\gamma}_2, \hat{\gamma}_3$, and $\hat{\gamma}_4$ in equation (E.5)).

[71] We also conducted these analyses using a local linear regression considering different bandwidths (5%, 2.5%, and 1%) and obtained similar results.

the number of party members hired in the municipal public sector in a given year, while column (4) displays results for this variable scaled by total workers hired in the municipal public sector in the same year. Finally, the dependent variable in column (5) is the annual separation rate of members of the winning and the runner-up coalitions.[72]

The results in Table 7 show that winning a mayoral election has a positive and significant effect on the employment of members of the winning party in the municipal public sector, and that a large part of this increase occurs in the first year of the term. In particular, the results in column (1) show that employment of members of the winning party increases by 29% (relative to members of the runner-up party before the start of the term) in the first year of the mayoral term, and continues increasing throughout the term, albeit at a lower pace. By the end of the term, the public sector employment of members of the winning party is about 48% higher than the employment of members of the runner-up party in the same municipality and term. This represents about 19 additional jobs for members of the winning party. Similar patterns are visible when considering the share total municipal public sector employees accounted for by members of the winning party (column (2)). Consistent with these results, column (3) shows that number of members of the winning coalition hired increases by 88% during the first year of the term. The hiring of members of the winning party decreases in subsequent years, but remains higher than that of members of the runner-up party throughout the mayoral term. Similar patterns are visible if we scale this variable by the total number of workers hired in the municipal public sector in each year (column (4)). Finally, the results in column (5) show that members of the runner-up party are more likely to leave the municipal public sector in the first year of the mayoral term. This could be the result of some form of punishment of members of the opposition by newly elected mayors, or could reflect that members of the opposition party might be less willing to work for the winning party. In any case, his effect is relatively small and most of the relative increase in the number of members of the winning party employed in the municipal pubic sector is mostly accounted for by the hiring of winning party members. We also find that

[72] As mentioned above, we have data on 5,364 municipalities for the term 2005-2008 and 5,272 municipalities for the term 2009-2012. For each municipality and term, we use seven annual observations (three years before and the four years of the term) and we have two observations per year (one for members of the winning coalition and one for members of the runner-up coalition). This results in a maximum 148,904 possible observations for these regressions. We lose less than 0.5% of the observations due to missing data, which leaves us with 148,264 observations in columns (1) and (2) of Table 10. To identify the workers that were hired by the municipal public sector or that left this sector in year *t*, we need information on whether workers were working for the municipal public sector in year *t-1*. This implies that we cannot calculate the number of hires nor the number of separations for 2002, as this is the first year in our sample. As a result, for the term 2005-2008 the sample when analyzing hires (columns (3) and (4)) and separations (column (5)) has fewer observations.

the separation rate of members of the winning party increases significantly in the last year of the term, suggesting that many of the newly hired party members may leave at the end of the mayoral term.[73] We further explore what happens after the end of the mayoral term in Section 7.2 below.

Figure 7 illustrates the results from Table 7, plotting the estimated coefficients from equation (E.6), as well as the 95 percent confidence intervals for these coefficients, using (the log of one plus) the number of party members of each coalition working in the municipal public sector in a given year as dependent variable. The results show that there are no significant differences in the number of party members of the winning and runner-up parties working in the municipal public sector before the start of the mayoral term in close elections, consistent with the balance tests described above. But once the winning party takes office, the number of its members employed in the municipal bureaucracy increases significantly in the first year of the term and remains higher than that of members of the runner-up party throughout the term.

7.2 Are Effects Long-lasting?

All the results presented above focus on the effects of winning office on the employment of party members during the mayoral term. A relevant question is whether these effects extend beyond the end of the mayoral term. That is, are mayors able to grant relatively permanent (i.e., lasting more than one mayoral term) jobs in the municipal public sector to members of their political party? To what extent does this depend on the continuing electoral success of the party? These are important questions as the value of jobs as a mechanism to reward and motivate party members depends on the potential duration of these jobs and on the extent to which these jobs might be tied to the subsequent electoral performance of the party. Moreover, appointing party members to permanent jobs, particularly in senior positions, might be a way for the party to ensure that it keeps influencing policy even after leaving office. The results on the separation rate reported in Table 10 show that in the last year of the mayoral term members of the party in power are more likely to leave the municipal bureaucracy, suggesting that at least some of the jobs granted to party members

[73] Note that the dependent variable in column (1) is the number of party members that work in the municipal public sector at any point during a given year. In particular, if a given party member is working for the municipal administration in the last year of the term, but leaves her job at some point during that year, she will show up as having worked for the municipal public sector in that year and will also be registered as a separation in the same year. This explains why, although we observe an increase in the separation rate at the end of the mayoral term, we do not see a decrease in the number of party member that have worked for the municipal public sector in the same year.

may not be long-lasting. In this section we explore this issue in more detail, using our RDD difference-in-difference framework and extending it to include three years after the end of the mayoral term.[74] Given that our sample covers the period 2002-2013 we can only conduct this analysis for the mayoral term 2005-2008. For brevity, in this Section we present all the results in graphical form, following equation (E.6).

Figure 8 shows the long-term effects of winning office on the employment of party members. In particular, it displays the results of estimating equation (E.6) for the mayoral term 2000-2008, including three years after the end of the term, using as dependent variable (the log of one plus) the number of members of the winning/runner-up parties employed in the municipal public sector in each year. Consistent with the patterns presented in Figure 7, the number of members of the winning party employed in the municipal public sector increases after the party wins an election and remains higher than that of members of the runner-up party throughout the mayoral term. Moreover, the results in Figure 8 show that the effect of winning an election on the employment of members of the winning party extends beyond the end of the mayoral term. In particular, although the number of members of the winning party employed in the municipal bureaucracy decreases somewhat at the end of the mayoral term, even three years afterwards it remains more than 40% higher than before the party took power.

A relevant question regarding the results in Figure 8 is to what extent the long-term effects that we find are linked to parties' electoral performance. That is, are these effects driven by parties that are re-elected after the end of the mayoral term? Or does the employment of members of the winning party remain high even if their party leaves office at the end of the mayoral term? To address this issue, we split our sample of municipalities based on whether the party in power is re-elected at the end of the mayoral term or not, and estimate our regressions separately for these two samples. It is worth stressing that while this analysis provides relevant evidence, the difference between the two samples does not have a casual interpretation.

Figure 9 reports the results of these estimations. In particular, the *X's* show the coefficient estimates of equation(E.6) for the sample of municipalities where the party in office is re-elected at the end of the mayoral term and the circles show the coefficients estimates for those municipalities where the party leaves office at the end of the mayoral term. We find that the employment of party members in the municipal public sector is tied to their parties'

[74]So for each municipality we have ten annual observations: three years before the beginning of the term, the four years of the term, and three years after the end of the term. We have two observations per year, one for members of the winning party and one for members of the runner-up party.

subsequent electoral success. In particular, the number of members of the winning party working in the municipal public sector remains relatively stable after the end of the mayoral term for those parties that stay in power for a subsequent term, but decreases significantly in the case of parties that leave office at the end of the term. However, even when parties leave office, we find evidence of long-lasting effects, as the number of members of these parties employed in the municipal bureaucracy is more than 20% higher three years after the end of the term than before the party took power. This suggests that parties are able to grant permanent positions in the municipal bureaucracy to their supporters and thus discretionary appointments can have long-lasting effects.

As mentioned above, appointing party members to permanent jobs could be a way for parties to retain their influence on the policy-making process after leaving office, particularly if the permanent jobs are in senior positions. To analyse whether this could account for our findings, we estimated our regressions on the sample of parties that are not re-elected at the end of the term differentiating between senior officials and managers and all other occupational categories.[75] These results are presented in Figure 10. In particular, the *X's* show the coefficient estimates of equation (E.6) using as dependent variable (the log of one plus) the number of members of the winning/runner-up parties employed as senior officials and managers, and the circles show the coefficients estimates considering the number of members of each party working in all other occupational categories.[76] Our results show that the long-lasting effects that we find are concentrated in non-senior positions. In particular, when parties are not re-elected at the end of the term, the number of their members employed in senior positions decreases significantly and is similar to its level before the party was elected in the first place. On the other hand, the number of members of the winning party working in non-senior positions in the municipal bureaucracy decreases somewhat after the party leaves office, but is more than 20% higher after the end of the term than before the party took power seven years before. This pattern is consistent with the idea that senior officials and managers help align bureaucrat's actions with the interests of elected politicians in order to support their policy initiatives and, as a result, employment in these positions is directly tied to politicians' electoral success. However, it runs contrary to the idea that parties might use permanent appointments in senior positions to continue to influence policies after leaving

[75] We also analyzed separately the different occupational categories and found broadly similar results.

[76] Note that the coefficients graphed in Figure 10 capture (percentage) differences relative to the year before the start of the term for each of the employment categories. The number of members of the winning party working in non-senior positions in the municipal public sector is actually higher than the number employed in senior positions, but the later figure experiences a larger (percentage) increase (relative to its level in the electoral year) after the party takes office.

office. Our findings suggests that mayors are able to grant permanent jobs to members of their parties in lower-ranked positions, which is more likely to reflect the objective of rewarding or motivating party loyalists. These permanent jobs in non-senior positions are most likely to be subject to formal civil service requirements, suggesting that mayors might be able to

8 Conclusions

In this paper we analyze whether elected officials allocate jobs in the public sector to members of their own political party and how this affects the selection of government workers. Exploiting close mayoral races, we estimate the causal effect of winning office on the employment of members of the ruling party in the municipal bureaucracy. We find that indeed politicians tend to use discretionary appointments to favor members of their parties: Winning a mayoral election leads to an increase in the number of members of the winning party employed by the municipal public sector of 35% to 41%.

We also present evidence on the possible reasons why elected officials hire members of their own party, exploiting differences across occupations within the bureaucracy. We find that winning a mayoral election has a positive and significant effect on the employment of members of the winning party both in senior positions and in lower-ranked occupations, suggesting that discretionary appointments to public sector jobs are used by mayors both to control the management of public policies and to reward and motivate their supporters.

We also find that the quality of members of the winning party hired after the party takes office is similar to that of members of the runner-up party for most occupations, except for senior officials and managers. For these senior positions, we actually find that members of the winning party tend to have higher private sector wages and wage residuals before joining the public sector.

Overall, our results suggest that discretionary appointments are quite common and represent a non-negligible fraction of public sector workers, despite the existence of a quite extensive formal civil service in Brazil. We also find that mayors use these appointments for a variety of reasons, and not only as a patronage tool. Moreover, contrary to common stereotypes, our results suggests that mayors use their discretionary powers to appoint high quality party members to senior positions. This is consistent with the idea that politicians value both loyalty and expertise when appointing senior bureaucrats.

Given the existing evidence on the negative effects of discretionary appointments in other settings, it would be important to understand why in some cases political discretion over

personnel decisions leads to extensive patronage and the hiring of lower quality appointees, while in others elected officials seem to use this power to hire qualified workers. Which institutional, economic, or cultural factors might account for these differences? Even within Brazil, are there any differences across municipalities in the way discretionary appointments are used? And from a policy perspective, how can ensure that office holders use any discretionary powers in a judicious manner?

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1 Figures

Figure 1: Party Membership in Brazil

Figure 1.1: Evolution of party membership

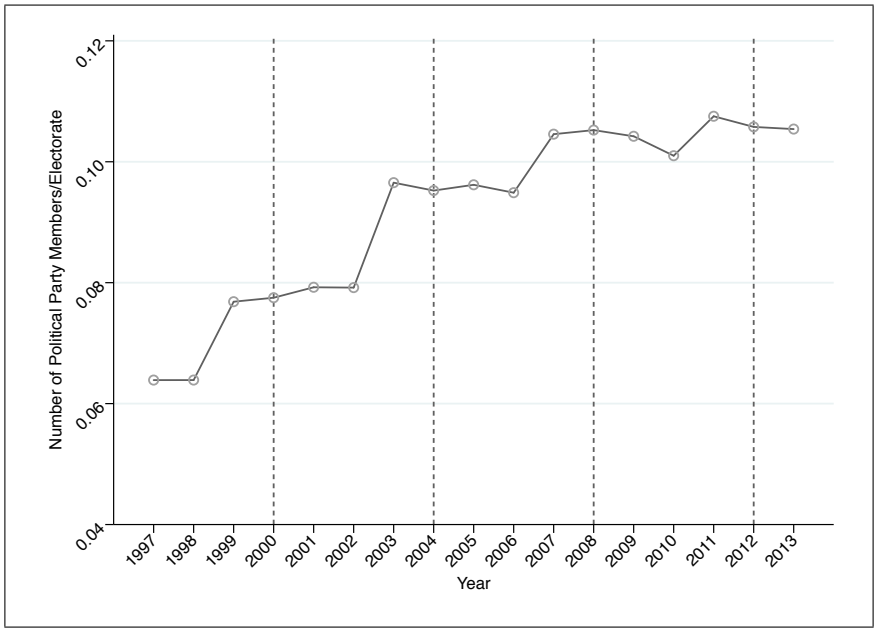
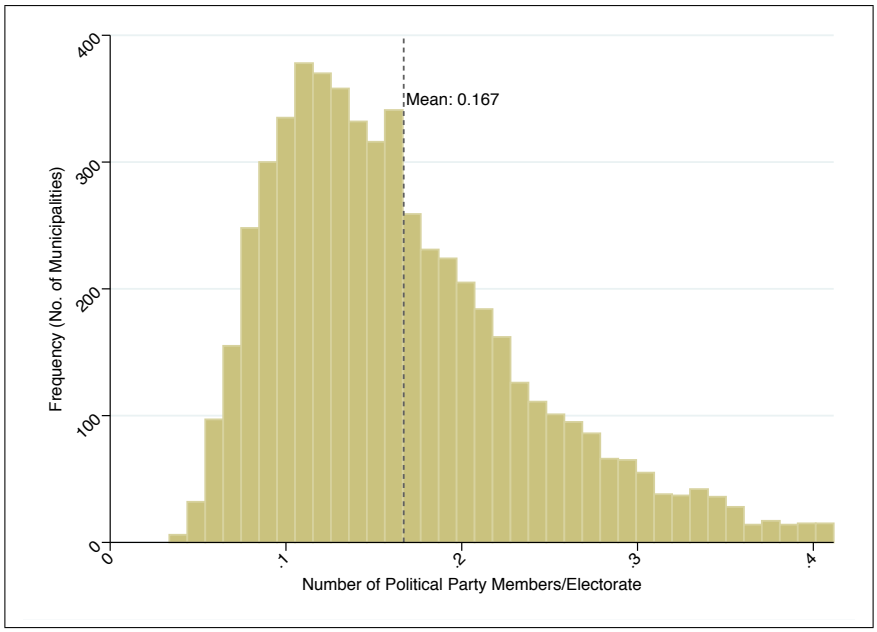


Figure 1.2: Distribution of party members across municipalities



Notes. Figure 1.1 shows the evolution of political party members as a share of the electorate over the period 1997-2013. Figure 1.2 shows the histogram of this variable across municipalities in 2013.

Figure 2: Municipal Public Sector Employment in Brazil

Figure 2.1: Evolution of municipal public sector employment

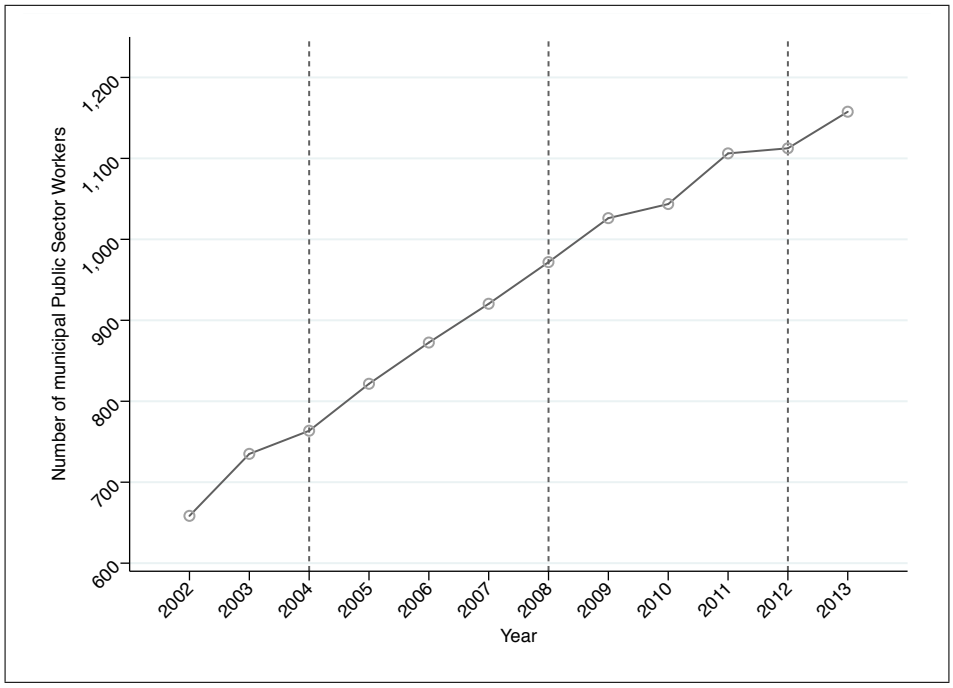


Figure 2.2: Evolution of municipal public sector employment - share of formal sector workers

Notes. Figure 2.1 shows the number of employees working in the municipal public sector averaged across the municipalities in our sample for the period 2002-2013. Figure 2.2 shows the number of employees working in the municipal public sector over the total formal sector workers, averaged across the municipalities in our sample for the period 2002-2013.

Figure 3: Effect of Winning a Mayoral Election on Employment of Party Members in the Municipal Public Sector

Figure 3.1: Party members employed in the municipal public sector

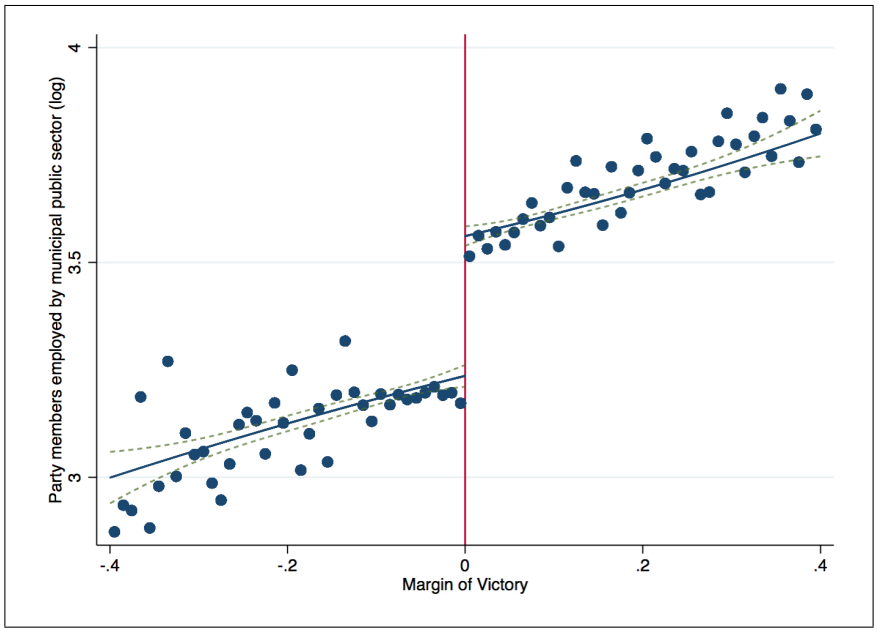
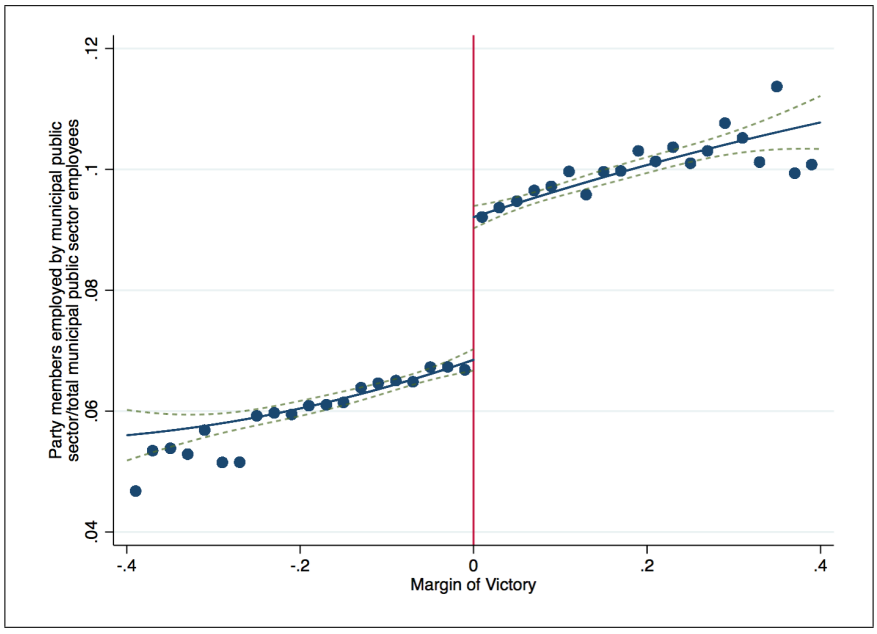


Figure 3.2: Party members as a share of total municipal public sector employees



Notes. This figure illustrates the RDD estimates following equation (E.3), fitting a 2^{nd} order polynomial in MV in both sides of the threshold $MV = 0$ for the outcome variables analysed in Table 3. Figure 3.1 dependent variable is (the log of one plus) the annual number of party members employed in the municipal public sector averaged over the mayoral term. Figure 3.2 dependent variable is the number of party members employed by municipal public sector over total municipal employees, averaged over the mayoral term.The variable on the x-axis is the margin of victory, and observations are averaged within bins of two percent of margin of victory. We plot the average of our dependent variables for party members belonging to the winning coalition (to the right of the cutoff $MV = 0$) and for party members belonging to the runner-up coalition (to the left of the cutoff $MV = 0$). The solid line is a split second-order polynomial in MV fitted separately on each side of the MV threshold at zero. The dotted lines are the 95 percent confidence interval of the polynomial.

Figure 4: Effect of Winning Office on Employment of Party Members in the Municipal Public Sector - Hires and Separations

Figure 4.1: Party members hired

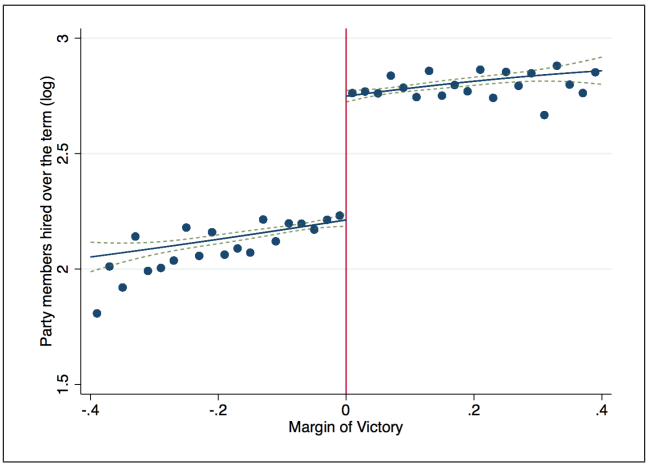


Figure 4.2: Party members hired as a share of total hires

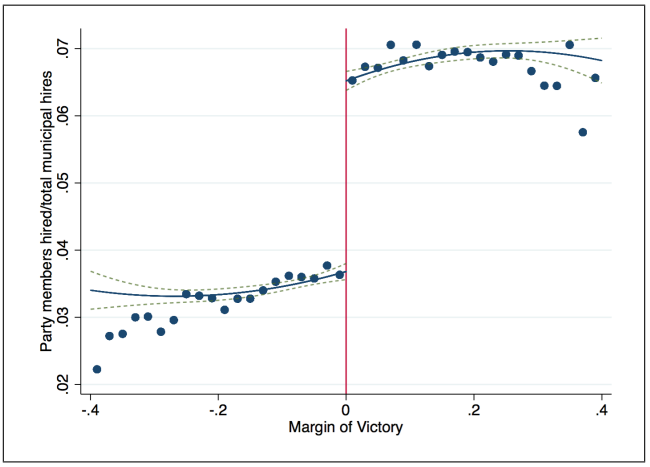
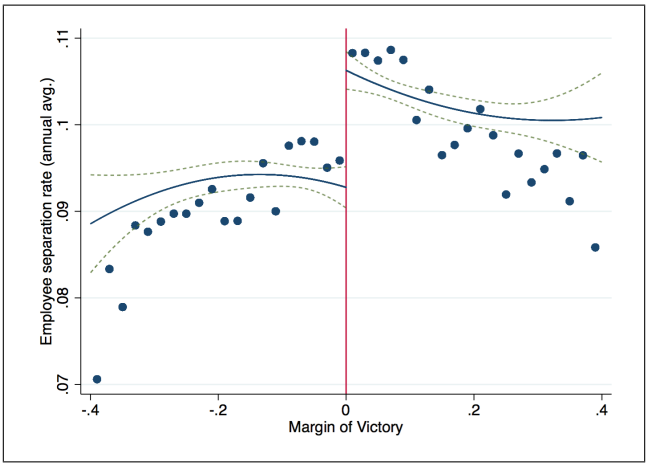
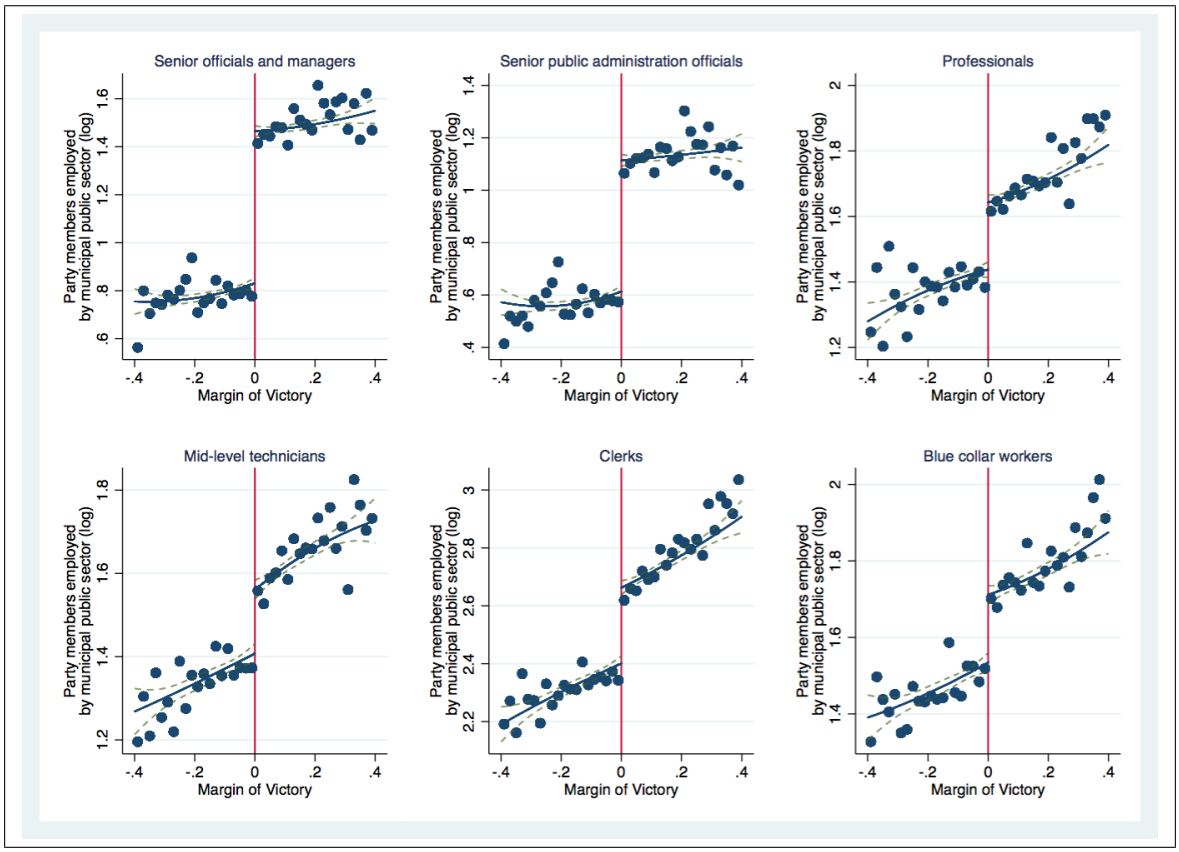


Figure 4.3: Separation rate



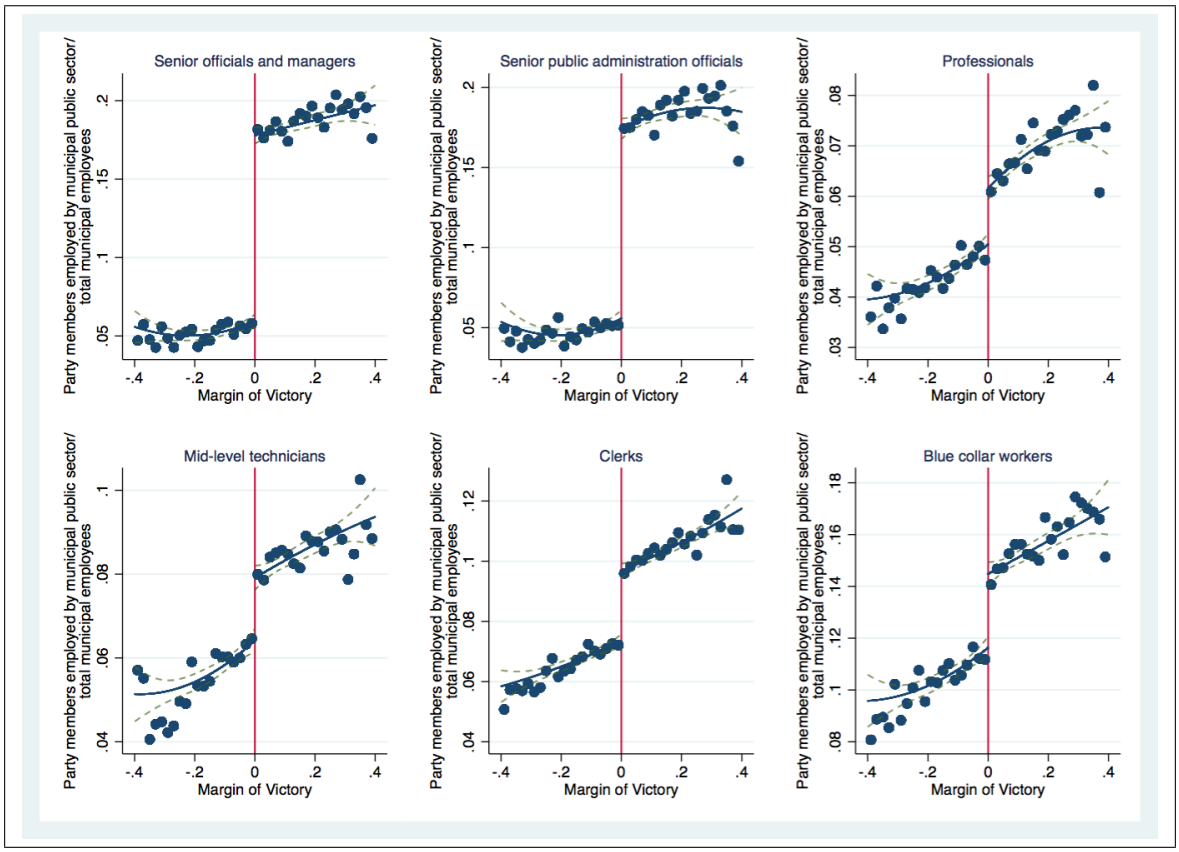
Notes. This figure illustrates the RDD estimates following equation (E.3), fitting a 2^{nd} order polynomial in MV in both sides of the threshold $MV = 0$ for the outcome variables analysed in Table 4. The dependent variable in Figure 4.1 is (the log of one plus) the total number of party members hired by the municipal public sector over the whole mayoral term. Figure 4.2 dependent variable is the number of party members hired in municipal public sector over total hires in the municipal public sector over the whole mayoral term. Figure 4.3 dependent variable is the annual separation rate, averaged over the mayoral term. The variable on the x-axis is the margin of victory, and observations are averaged within bins of two percent of margin of victory. We plot the average of our dependent variables for party members belonging to the winning coalition (to the right of the cutoff $MV = 0$) and for party members belonging to the runner-up coalition (to the left of the cutoff $MV = 0$). The blue line is a split second-order polynomial in MV fitted separately on each side of the MV threshold at zero. The green lines are the 95 percent confidence interval of the polynomial.

Figure 5: Effect of Winning Office on Employment of Party Members
in the Municipal Public Sector - Occupation Categories - Employment Levels



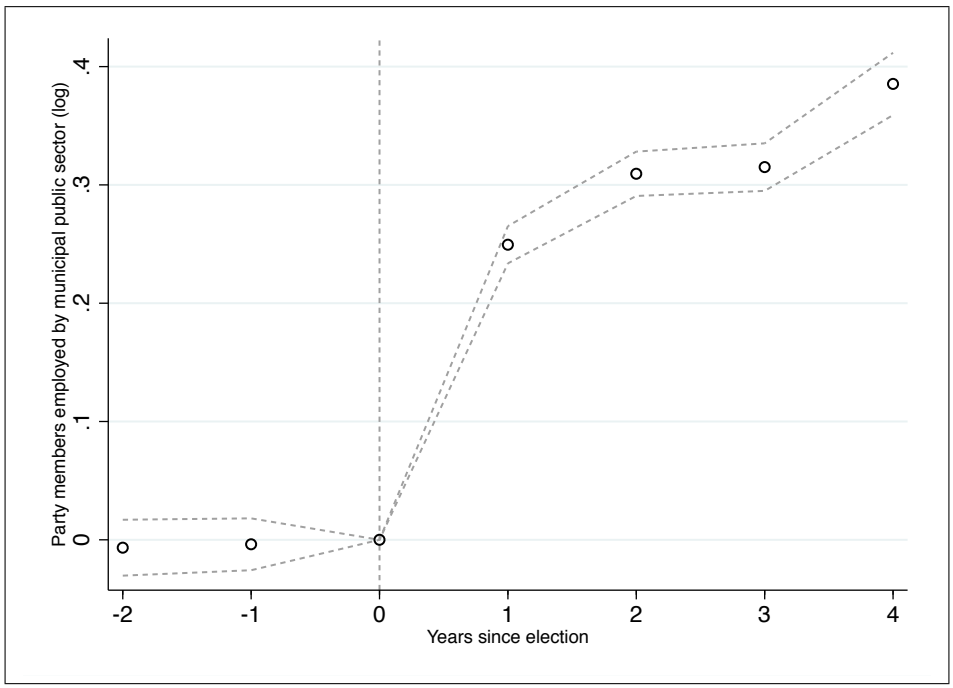
Notes. This figure shows different regressions for each occupation category. The graphs illustrates the RDD estimates following equation (E.3), fitting a 2^{nd} order polynomial in MV in both sides of the threshold $MV = 0$ for the outcome variable analysed in Table 5, panel A. The variable on the x-axis is the margin of victory, and observations are averaged within bins of two percent of margin of victory. We plot the average of our dependent variables for party members belonging to the winning coalition (to the right of the cutoff $MV = 0$) and for party members belonging to the runner-up coalition (to the left of the cutoff $MV = 0$). The solid line is a split second-order polynomial in MV fitted separately on each side of the MV threshold at zero. The dotted lines are the 95 percent confidence interval of the polynomial.

Figure 6: Effect of Winning Office on Employment of Party Members in the Municipal Public Sector - Occupation Categories - Share of Employment in Each Occupation Category



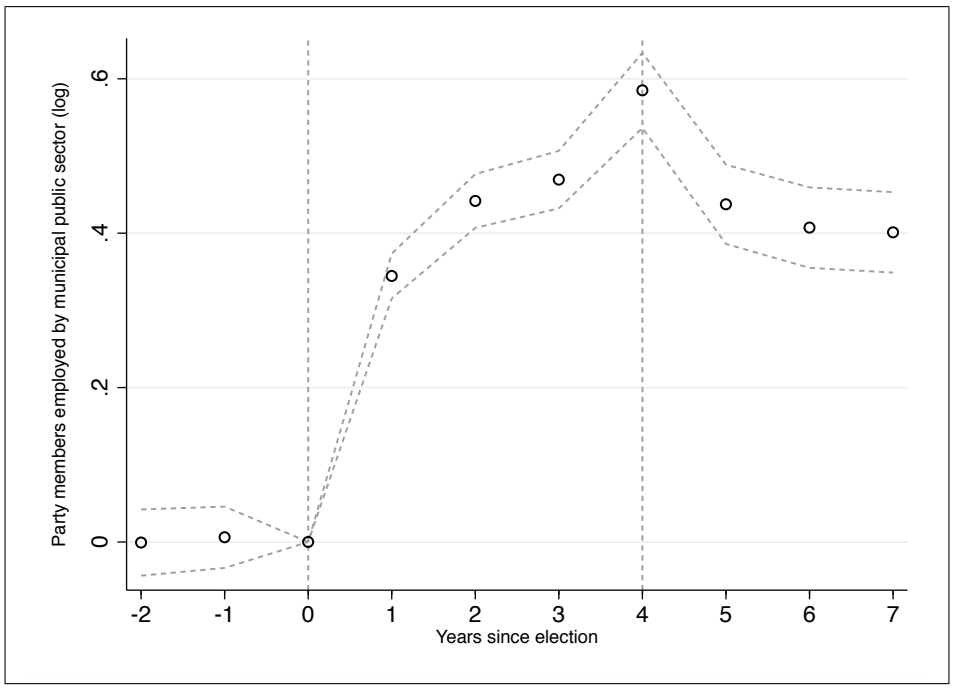
Notes. This figure shows different regressions for each occupation category. The graphs illustrates the RDD estimates following equation (E.3), fitting a 2^{nd} order polynomial in MV in both sides of the threshold $MV = 0$ for the outcome variables analysed in Table 5, panel B, for each occupation category. The variable on the x-axis is the margin of victory, and observations are averaged within bins of two percent of margin of victory. We plot the average of our dependent variables for party members belonging to the winning coalition (to the right of the cutoff $MV = 0$) and for party members belonging to the runner-up coalition (to the left of the cutoff $MV = 0$). The solid line is a split second-order polynomial in MV fitted separately on each side of the MV threshold at zero. The dotted lines are the 95 percent confidence interval of the polynomial.

Figure 7: Effect of Winning Office on Employment of Party Members in the Municipal Public Sector - RDD Diff-in-Diff estimates



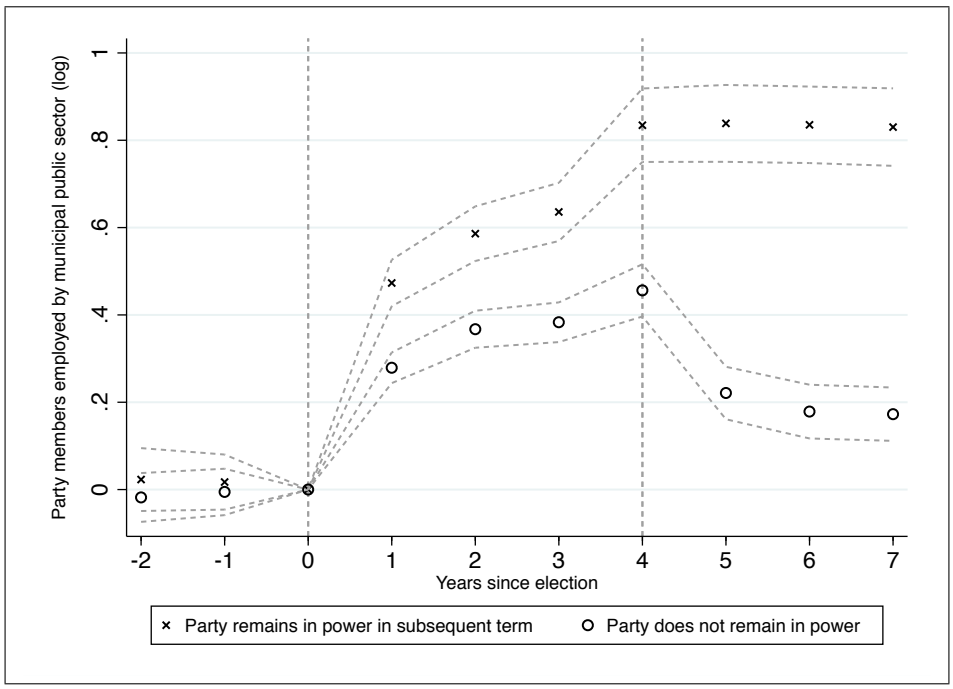
Notes. This figure shows RDD estimates following equation (E.6), The horizontal axis denotes the years since elections. The dots show the coefficient estimates and the lines the 95 percent confidence intervals. The dependent variable is (the log of one plus) the annual number of party members employed in the municipal public sector. Sample includes only the coalition of the winning mayoral candidate and the coalition of the runner-up candidate. Sample includes mayoral terms 2005-2008 and 2009-2012. For each mayoral term, we use seven annual observations, including three years before the beginning of the term, and the four years of the term.

Figure 8: Long Term Effect of Winning Office on Employment of Party Members in the Municipal Public Sector- RDD Diff-in-Diff estimates



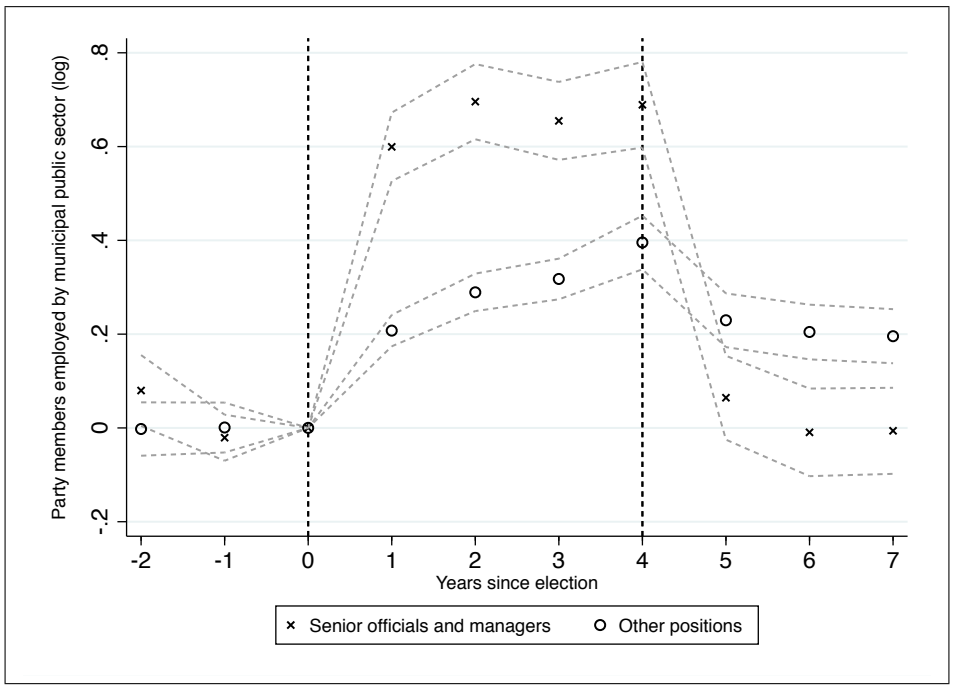
Notes. This figure shows RDD estimates following equation (E.6). The horizontal axis denotes the years since elections. Sample includes only the coalition of the winning mayoral candidate and the coalition of the runner-up candidate. Sample includes mayoral term 2005-2008 where neither the winner nor the runner-up are in power at the time of elections. We use ten annual observations, including three years before the beginning of the term, the four years of the term, and three years after the term. The dotted lines are the 95 percent confidence interval of the polynomial. The dots show the coefficient estimates and the lines the 95 percent confidence intervals. The dependent variable is (the log of one plus) the annual number of party members employed in the municipal public sector. Observations are at the municipality, electoral coalition, and term-period level.

Figure 9: Long Term Effect of Winning Office on Employment of Party Members in the Municipal Public Sector - Difference between Parties that Remain in Power and Parties that Leave



Notes. This figure shows RDD estimates following equation (E.6). The horizontal axis denotes the years since elections. Sample includes only the coalition of the winning mayoral candidate and the coalition of the runner-up candidate. Sample includes mayoral term 2005-2008 where neither the winner nor the runner-up are in power at the time of elections. We use ten annual observations, including three years before the beginning of the term, the four years of the term, and three years after the term. The X marks show the coefficient estimates for the sample of municipalities where the party remain in power in the subsequent mayoral term. The circles show the coefficient estimates for the sample of municipalities where the party does not remain in power in the subsequent term. The lines represent 95 percent confidence intervals. The dependent variable is (the log of one plus) the annual number of party members employed in the municipal public sector. Observations are at the municipality, electoral coalition, and term-period level.

Figure 10: Long Term Effect of Winning Office on Employment of Party Members in the Municipal Public Sector - Parties that Leave Power - Difference across Occupations



Notes. This figure shows RDD estimates following equation (E.6). The horizontal axis denotes the years since elections. Sample includes only the coalition of the winning mayoral candidate and the coalition of the runner-up candidate. Sample includes mayoral term 2005-2008 where neither the winner nor the runner-up are in power at the time of elections. We use ten annual observations, including three years before the beginning of the term, the four years of the term, and three years after the term. The X marks show the coefficient estimates for the sample of senior officials and managers. The circles show the coefficient estimates for all employment categories, excluding senior officials and managers. The lines represent 95 percent confidence intervals. The dependent variable is (the log of one plus) the annual number of party members employed in the municipal public sector. Observations are at the municipality, electoral coalition, and term-period level.

2 Tables

Table 1: Summary Statistics - Individual Level Characteristics

	(1)	(2)
	Never political party members (between 2002-2013)	Political party members at some point (between 2002-2013)
Panel A: All sample		
Number of workers	84,903,254	5,558,232
Number of job-year observations	599,100,000	52,292,522
Share that worked in the public sector at some point between 2002-2013	17.1%	41.9%
Share that only worked in the public sector between 2002-2013	7.1%	16.1%
Panel B: Municipal public sector employees		
Age	39.79	42.56
Share female	0.682	0.484
Share white	0.542	0.539
Years of schooling	12.35	11.76
Wage (ln)	6.809	6.766
Wage residuals	-0.012	0.037

Note. This table shows descriptive statistics for our matched individual-level data on employment and party membership. Column (1) considers workers who are never affiliated with a political party during the sample period. Column (2) considers workers who are members of a political party at some point during our sample period. Panel A presents descriptive statistics for all the workers in our data. Panel B compares the characteristics of party members and non-party members working in the municipal public sector.

Table 2: Summary Statistics - Municipal Level

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Municipalities	Obs	Mean	Std. Dev.	Median	1st percentile	99th percentile
Panel A: All municipal public sector employees							
Total number of employees	5,532	10,636	978.4	3,121.7	434.5	87.0	9,157.3
Total number of hires	5,532	10,636	644.0	2,362.8	267.0	24.0	6,701.0
Separation rate	5,505	10,484	0.118	0.058	0.110	0.017	0.285
Panel B: Party members employed in the municipal public sector - Winning coalition							
Total number of employees	5,532	10,636	66.1	117.6	39.3	1.3	536.3
Share of total employment	5,532	10,636	0.098	0.067	0.085	0.004	0.306
Total number of hires	5,532	10,636	30.8	63.2	16.0	0.0	264.0
Share of total hires	5,532	10,636	0.068	0.050	0.057	0.000	0.227
Separation rate	5,505	10,484	0.103	0.065	0.091	0.000	0.303
Panel C: Party members employed in the municipal public sector - Runner-up coalition							
Total number of employees	5,532	10,636	42.4	96.3	23.5	0.0	352.0
Share of total employment	5,532	10,636	0.061	0.049	0.050	0.000	0.225
Total number of hires	5,532	10,636	17.4	68.9	7.0	0.0	171.0
Share of total hires	5,532	10,636	0.033	0.031	0.026	0.000	0.147
Separation rate	5,505	10,484	0.093	0.072	0.080	0.000	0.327

Notes. This table presents descriptive statistics for the main measures of employment in the municipal public sector used in our empirical analysis. Panel A shows statistics for all municipal public sector workers. Panels B and C display statistics for party members employed in the municipal public sector that belong to the coalition of the winning mayoral candidate or the coalition of the runner-up mayoral candidate, respectively.

Table 3: Effect of Winning Office on Employment of Party Members in the Municipal Public Sector

	(1)	(2)	(3)	(4)	(5)	(6)
	OLS	2^{nd} order polynomial	Local linear regression			
			CCT	5%	2.5%	1%
Panel A: Number of party members employed by municipal public sector (log)						
Winner coalition	0.507***	0.329***	0.337***	0.345***	0.297***	0.327***
	(0.010)	(0.017)	(0.024)	(0.035)	(0.050)	(0.083)
Observations	21,272	21,272	11,134	5,454	2,694	1,070
No. municipalities	5,532	5,532	4,080	2,352	1,259	523
Mean dep. var. - runner-up coalition	42.4	42.4	41.6	39.7	39.5	38.7
Bandwidth			0.113	0.050	0.025	0.010
Panel B: Party members employed by municipal public sector over total municipal employees						
Winner coalition	0.036***	0.023***	0.025***	0.025***	0.020***	0.021***
	(0.001)	(0.001)	(0.002)	(0.003)	(0.004)	(0.007)
Observations	21,272	21,272	12,785	5,454	2,694	1,070
No. municipalities	5,532	5,532	4,439	2,352	1,259	523
Mean dep. var. - runner-up coalition	0.061	0.061	0.066	0.067	0.067	0.067
Bandwidth			0.137	0.050	0.025	0.010

Notes. This table analyzes the effect of winning a mayoral election on the number of party members employed in the municipal public sector. Observations are at the municipality, electoral coalition, and term level. Sample includes mayoral terms 2005-2008 and 2009-2012. Sample includes only the coalition of the winning mayoral candidate and the coalition of the runner-up candidate. Panel A dependent variable is (the log of one plus) the annual number of party members employed in the municipal public sector averaged over the mayoral term. Panel B dependent variable is the number of party members employed in municipal public sector over total municipal employees, averaged over the mayoral term. *Winner coalition* is a dummy variable that equals one for the coalition of the winning mayoral candidate and zero for the coalition of the runner-up candidate. Column (1) displays OLS estimates, following equation (E.2). Column (2) displays RDD estimates following equation (E.3), fitting a 2^{nd} order polynomial on MV in both sides of the threshold $MV = 0$. Columns (3) to (6) present local linear regression estimates, based on equation (E.4) and considering alternative bandwidths: optimal bandwidth calculated following Calonico, Cattaneo, and Titiunik (2014) (column (3)), considering observations with margin of victory in the intervals [-0.025;+0.025] (column 4), [-0.025;+0.025] (column (5), and [-0.010;+0.010] (column (6)). *Mean dep. var - runner-up coalition* is the mean of the dependent variable for party members of the coalition of the runner-up candidate (without taking logs). All regressions include term, municipality, and party-term fixed effects. *, ** and *** denote significance at ten, five, and one percent level, respectively. Standard errors in parenthesis clustered at the municipality level.

Table 4: Effect of Winning Office on Employment of Party Members in the Municipal Public Sector - Hires and Separations

	(1)	(2)	(3)
	Total party members hired over the whole term		Separation rate (annual avg.)
	Log	Share of total hires	
Panel A: RDD estimates using a second order spline polynomial specification			
Winner coalition	0.561***	0.030***	0.012***
	(0.016)	(0.001)	(0.001)
Observations	21,272	21,272	20,968
No. municipalities	5,532	5,532	5,505
Mean dep. var. - runner-up coalition	17.4	0.033	0.093
Panel B: RDD estimates for local linear regression with observation in interval [-0.025;+0.025]			
Winner coalition	0.514***	0.026***	0.015***
	(0.046)	(0.003)	(0.004)
Observations	2,694	2,694	2,668
No. municipalities	1,259	1,259	1,248
Mean dep. var. - runner-up coalition	16.7	0.037	0.096
Panel C: RDD estimates for local linear regression with observation in interval [-0.010; +0.010]			
Winner coalition	0.589***	0.030***	0.016**
	(0.077)	(0.004)	(0.006)
Observations	1,070	1,070	1,060
No. municipalities	523	523	518
Mean dep. var. - runner-up coalition	16.3	0.036	0.093

Notes. This table analyzes the effect of winning a mayoral election on additional measures of employment of party members in the municipal public sector. Observations are at the municipality, electoral coalition, and term level. Sample includes mayoral terms 2005-2008 and 2009-2012. Sample includes only the coalition of the winning mayoral candidate and the coalition of the runner-up candidate. Panel A reports RDD estimates following equation (E.3), fitting a 2^{nd} order polynomial on MV in both sides of the threshold $MV = 0$. Panel B and C present local linear regression estimates, based on equation (E.4) and considering alternative bandwidths with margin of victory in the intervals [-0.025;+0.025], and [-0.010;+0.010], respectively.f *Winner coalition* is a dummy variable that equals one for the coalition of the winning mayoral candidate and zero for the coalition of the runner-up candidate. *Mean dep. var - runner-up coalition* is the mean of the dependent variable for party members of the coalition of the runner-up candidate (without taking logs). All regressions include term, municipality, and party-term fixed effects. *, ** and *** denote significance at ten, five, and one percent level, respectively. Standard errors in parenthesis clustered at the municipality level.

Table 5: Effect of Winning Office on Employment of Party Members in the Municipal Administration - Occupational Categories

	(1)	(2)	(3)	(4)	(5)	(6)
	Senior officials and managers					
	All	Senior public administration officials	Professionals	Mid-level technicians	clerks	Blue collar workers
Panel A: Party members employed in municipality by job category (in logs)						
Winner coalition	0.638***	0.514***	0.203***	0.171***	0.267***	0.174***
	(0.015)	(0.015)	(0.015)	(0.015)	(0.016)	(0.016)
Observations	21,272	21,272	21,272	21,272	21,272	21,272
Municipalities	5,532	5,532	5,532	5,532	5,532	5,532
Mean dep. var. - runner-up	3.4	2.7	7.0	6.5	19.0	6.3
Panel B: Party members employed in municipality by job category (share of job category)						
Winner coalition	0.119***	0.122***	0.012***	0.016***	0.022***	0.028***
	(0.004)	(0.004)	(0.002)	(0.002)	(0.002)	(0.003)
Observations	20,624	19,660	21,100	20,962	21,248	20,788
Municipalities	5,451	5,314	5,515	5,491	5,530	5,466
Mean dep. var. - runner-up	0.052	0.047	0.044	0.056	0.066	0.103

Notes. This table analyzes the effect of winning a mayoral election on employment of party members in the municipal public sector, by job catgories. Observations are at the municipality and level. Sample includes mayoral terms 2005-2008 and 2009-2012. Panel A shows results for (the log of one plus) the number of members of the winning or runner-up coalitions employed in each occupation in each year, averaged over the mayoral term. Panel B shows results when the dependent variable is the ratio of the number of party members of each coalition employed in a given occupation to the total number of municipal workers in that occupation, averaged over the mayoral term. Each column presents results for a given occupational category. *Winner coalition* is a dummy variable that equals one for the coalition of the winning mayoral candidate and zero for the coalition of the runner-up candidate. *Mean dep. var - runner-up coalition* is the mean of the dependent variable for party members of the coalition of the runner-up candidate (without taking logs). All regressions include term, municipality, and party-term fixed effects. *, ** and *** denote significance at ten, five, and one percent level, respectively. Standard errors in parenthesis clustered at the municipality level.

Table 6: Effects of Winning Office on the Quality of Party Members' Hired in the Municipal Public Sector

	(1)	(2)	(3)	(4)	(5)	(6)
	Senior officials and managers					
	All	Senior public administration officials	Professionals	Mid-level technicians	Clerks	Blue collar workers
Panel A: Years of schooling						
Winner coalition	-0.003	-0.004	-0.009	0.012	0.008	-0.007
	(0.011)	(0.013)	(0.009)	(0.010)	(0.009)	(0.014)
Observations	1,842	1,428	1,610	1,912	4,944	2,005
No. municipalities	743	571	627	759	1,825	852
Mean dep. var. - runner-up coalition	13.0	12.9	15.0	13.1	11.7	10.8
Panel B: Previous wage in the private sector						
Winner coalition	0.079**	0.088**	0.028	0.000	0.016	-0.034
	(0.036)	(0.040)	(0.039)	(0.026)	(0.016)	(0.022)
Observations	1,944	1,506	1,672	1,966	5,260	2,215
No. municipalities	779	598	652	775	1,934	938
Mean dep. var. - runner-up coalition	896.6	865.0	895.3	668.1	664.0	730.4
Panel C: Previous residual in the private sector						
Winner coalition	0.048*	0.048*	0.003	0.001	0.026*	0.013
	(0.026)	(0.026)	(0.030)	(0.021)	(0.014)	(0.019)
Observations	1,824	1,416	1,594	1,900	4,906	1,990
No. municipalities	735	566	621	754	1,814	846
Mean dep. var. - runner-up coalition	-0.123	-0.121	-0.203	-0.166	-0.179	-0.123

Notes. This table analyzes the effect of winning a mayoral election on the quality of party members employed in municipal public sector. Observations are at the municipality, coalition, and term level. Sample includes mayoral terms 2005-2008 and 2009-2012. Sample includes only the coalition of the winning mayoral candidate and the coalition of the runner-up candidate. Sample considers only workers hired by the municipal public sector during the mayoral term who were previously employed in the private sector. This table reports the results for different dependent variable considering several occupational categories. Table reports RDD estimates following equation (E.3). *Winner coalition* is a dummy variable that equals one for the coalition of the winning mayoral candidate and zero for the coalition of the runner-up candidate. *Mean dep. var - runner-up coalition* is the mean of the dependent variable for party members of the coalition of the runner-up candidate (without taking logs). All regressions include term, municipality, and party-term fixed effects. *, ** and *** denote significance at ten, five, and one percent level, respectively. Standard errors in parenthesis clustered at the municipality level.

Table 7: Effect of Winning Office on Employment of Party Members in the Municipal Public Sector - RDD Diff-in-Diff estimates

	(1)	(2)	(3)	(4)	(5)
	Party members employed by municipal public sector		Total party members hired		Separation rate (annual avg.)
	Log	Share of total municipal employees	Log	Share of total municipal hires	
Winner coalition × Year 1	0.253***	0.020***	0.629***	0.051***	-0.023***
	(0.009)	(0.001)	(0.017)	(0.002)	(0.003)
Winner coalition × Year 2	0.313***	0.024***	0.309***	0.025***	0.021***
	(0.011)	(0.001)	(0.016)	(0.002)	(0.002)
Winner coalition × Year 3	0.319***	0.024***	0.206***	0.012***	0.027***
	(0.011)	(0.001)	(0.016)	(0.001)	(0.002)
Winner coalition × Year 4	0.389***	0.031***	0.224***	0.016***	0.073***
	(0.014)	(0.001)	(0.016)	(0.002)	(0.003)
Observations	148,264	148,264	137,744	136,016	132,512
No. municipalities	5,532	5,532	5,532	5,532	5,505
Mean dep. var.					
- runner-up coal. before term	40.4	0.071	4.5	0.047	0.075

Notes. This table analyzes whether the employment of party members in the municipal public sector increases in the years after the party wins a mayoral election (relative to members of the runner-up party). Observations are at the municipality, coalition, and year level. Sample includes only the coalition of the winning mayoral candidate and the coalition of the runner-up candidate. Sample includes mayoral terms 2005-2008 and 2009-2012. For each mayoral term, we use seven annual observations, including three years before the beginning of the term and the four years of the term. The table reports results of RDD estimates following equation (E.5), fitting a 2^{nd} order polynomial in MV in both sides of the threshold $MV = 0$. All regressions include term-period, municipality, and party-term fixed effects. *Winner coalition* is a dummy variable that equals one for the coalition of the winning mayoral candidate and zero for the coalition of the runner-up candidate. *Winner coalition* x $Year\ t = (1, 2, 3, 4)$ are interactions between the dummy variable $Winnercoalition$ and different dummy variable for each of the mayoral term. *Mean dep. var - runner-up coal. before term* is the mean of the dependent variable for party members of the coalition of the runner-up candidate in the years before the mayoral term (without taking logs). *, ** and *** denote significance at ten, five, and one percent level, respectively. Standard errors in parenthesis clustered at the municipality level.

Online Appendix

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Figure 1A: Local Linear Regression Estimates of the Effect of Winning a Mayoral Election on Employment of Party Members in the Municipal Public Sector

Figure 1A.1: Party members employed in the municipal public sector

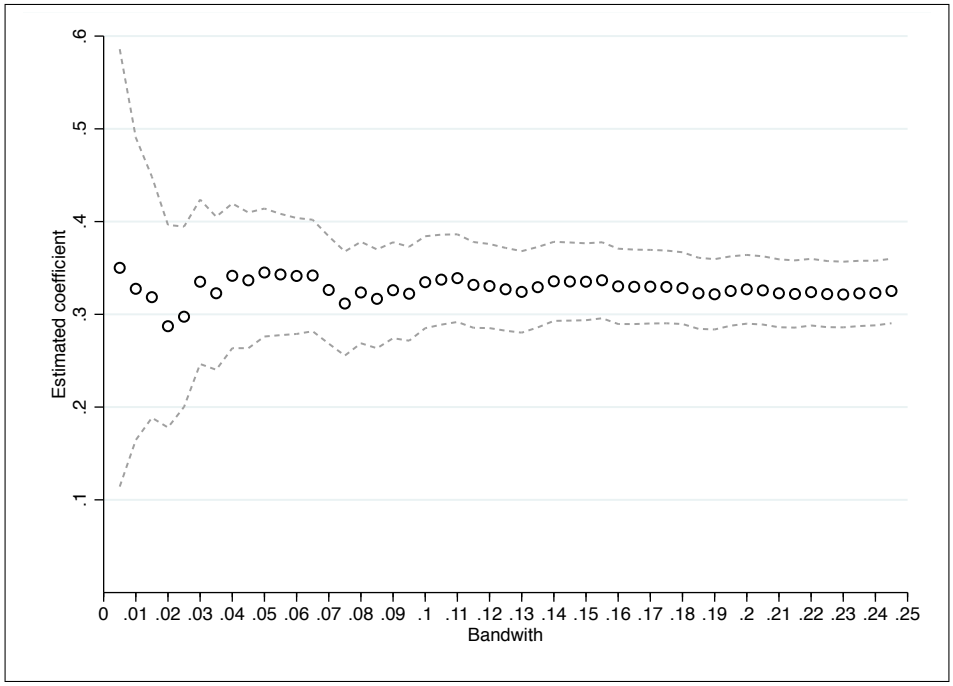
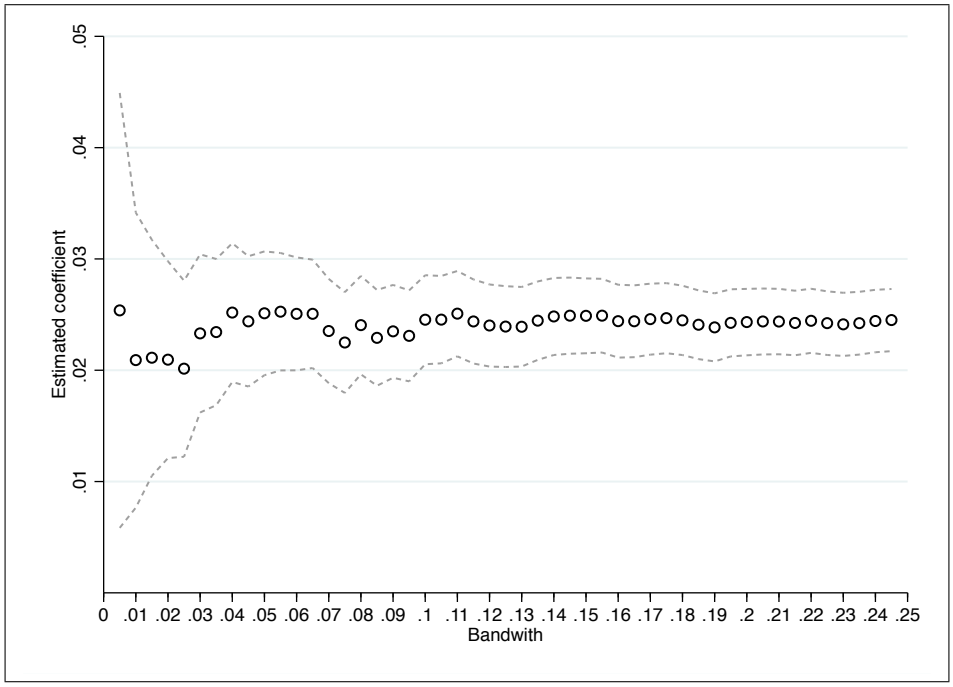


Figure 1A.2: Party members as a share of total municipal public sector employees



Notes. The figures display RDD local linear regression estimates following equation (E.4) as a function of the bandwidth chosen for different dependent variables. We estimate 50 separate regressions for bandwidths of varying size from 0.005 to 0.25, considering increments of 0.005. The dots show the coefficient estimates and the lines the 95 percent confidence intervals. The dependent variable in Figure 1A.1 is (the log of one plus) the annual number of party members employed in the municipal public sector averaged over the mayoral term. The dependent variable in Figure 1A.2 is the number of party members employed by municipal public sector over total municipal employees, averaged over the mayoral term.

Table A.1: Distribution of Party Members Across Parties

	2004	2008	2012
Partido do Movimento Democrático Brasileiro (PMDB)	0.176	0.166	0.156
Partido dos Trabalhadores (PT)	0.084	0.092	0.103
Partido Progressista (PP)	0.112	0.102	0.094
Partido da Social Democracia Brasileira (PSDB)	0.094	0.096	0.090
Democratas (DEM)	0.090	0.080	0.073
Partido Democrático Trabalhista (PDT)	0.084	0.082	0.080
Partido Trabalhista Brasileiro (PTB)	0.087	0.083	0.078
Partido da República (PR)	0.062	0.058	0.051
Partido Socialista Brasileiro (PSB)	0.030	0.033	0.038
Partido Popular Socialista (PPS)	0.035	0.033	0.031
Others	0.148	0.176	0.207

Note. This table shows the evolution of the share of party members for the main political parties in Brazil. *DEM (*Democratas*) was originated in 2007 from the PFL (*Partido da Frente Liberal*). *PR (*Partido Republicano*) was created in 2006, though the merge between PRONA and PL, so we sum up the share of affiliates for these two parties in 2004.

Table A.2: Effect of Winning Office on Employment of Party Members in the Non-municipal Public Sector (i.e., Federal and State)

	(1)	(2)	(3)	(4)	(5)
	Party members employed in the municipal public sector		Total party members hired		Separation rate (annual avg.)
	Log	Share of total municipal employees	Log	Share of total municipal hires	
Panel A: RDD estimates using a second order spline polynomial specification					
Winner coalition	-0.001	-0.004	0.006	0.000	-0.001
	(0.010)	(0.003)	(0.007)	(0.001)	(0.007)
Observations	20,098	20,098	20,098	18,302	6,995
No. municipalities	5,308	5,308	5,308	5,166	2,411
Mean dep. var. -runner-up coalition	19.6	0.049	9.1	0.010	0.073
Panel B: RDD estimates for local linear regression with observation in interval [-0.025; +0.025]					
Winner coalition	0.040	0.002	0.034	0.006*	0.016
	(0.029)	(0.010)	(0.023)	(0.003)	(0.029)
Observations	2,530	2,530	2,530	2,316	530
No. municipalities	1,183	1,183	1,183	1,087	258
Mean dep. var -runner-up coalition	4.8	0.051	0.2	0.010	0.090
Panel C: RDD estimates for local linear regression with observation in interval [-0.010; +0.010]					
Winner coalition	0.050	0.011	0.014	0.005	0.021
	(0.045)	(0.016)	(0.037)	(0.005)	(0.066)
Observations	1,012	1,012	1,012	932	228
No. municipalities	494	494	494	457	113
Mean dep. var. -runner-up coalition	2.2	0.052	0.2	0.008	0.076

Notes. This table analyzes the effect of winning a mayoral election on other measures of employment of party members in the federal or state public sector. Observations are at the municipality, electoral coalition, and term level. Sample includes mayoral terms 2005-2008 and 2009-2012. Sample includes only the coalition of the winning mayoral candidate and the coalition of the runner-up candidate. Panel A reports RDD estimates following equation (E.3), fitting a 2^{nd} order polynomial on MV in both sides of the threshold $MV = 0$. Panel B and C present local linear regression estimates, based on equation (E.4) and considering alternative bandwidths with margin of victory in the intervals [-0.025;+0.025], and [-0.010;+0.010], respectively. *Winner coalition* is a dummy variable that equals one for the coalition of the winning mayoral candidate and zero for the coalition of the runner-up candidate. *Mean dep. var - runner-up coalition* is the mean of the dependent variable for party members of the coalition of the runner-up candidate (without taking logs). All regressions include term, municipality, and party-term fixed effects. *, ** and *** denote significance at ten, five, and one percent level, respectively. Standard errors in parenthesis clustered at the municipality level.

Table A.3: Effect of Winning Office on Employment of Party Members in the Private Sector

	(1)	(2)	(3)	(4)	(5)
	Party members employed in the private sector		Total party members hired in the private sector		Separation rate (annual avg.)
	Log	Share of total private sector employees	Log	Share of total private sector hires	
Panel A: RDD estimates using a second order spline polynomial specification					
Winner coalition	0.007	-0.001	-0.013	-0.001*	-0.002
	(0.015)	(0.001)	(0.015)	(0.000)	(0.002)
Observations	21,214	21,214	21,214	21,190	20,118
No. municipalities	5,523	5,523	5,523	5,521	5,370
Mean dep. var. - runner-up coalition	117.0	0.030	135.8	0.020	0.242
Panel B: RDD estimates for local linear regression with observation in interval [-0.025;+0.025]					
Winner coalition	-0.015	-0.001	-0.058	-0.001	0.002
	(0.043)	(0.002)	(0.046)	(0.001)	(0.008)
Observations	2,690	2,690	2,690	2,688	2,524
No. municipalities	1,257	1,257	1,257	1,256	1,183
Mean dep. var. - runner-up coalition	87.5	0.034	3.0	0.022	0.240
Panel C: RDD estimates for local linear regression with observation in interval [-0.010;+0.010]					
Winner coalition	0.029	0.000	0.007	-0.000	0.001
	(0.069)	(0.003)	(0.074)	(0.003)	(0.014)
Observations	1,068	1,068	1,068	1,068	1,004
No. municipalities	522	522	522	522	490
Mean dep. var. - runner-up coalition	82.4	0.033	3.0	0.021	0.242

Notes. This table analyzes the effect of winning a mayoral election on other measures of employment of party members in the municipal private sector. Observations are at the municipality, electoral coalition, and term level. Sample includes mayoral terms 2005-2008 and 2009-2012. Sample includes only the coalition of the winning mayoral candidate and the coalition of the runner-up candidate. Panel A reports RDD estimates following equation (E.3), fitting a 2^{nd} order polynomial on MV in both sides of the threshold $MV = 0$. Panel B and C present local linear regression estimates, based on equation (E.4) and considering alternative bandwidths with margin of victory in the intervals [-0.025;+0.025], and [-0.010;+0.010], respectively. *Winner coalition* is a dummy variable that equals one for the coalition of the winning mayoral candidate and zero for the coalition of the runner-up candidate. *Mean dep. var - runner-up coalition* is the mean of the dependent variable for party members of the coalition of the runner-up candidate (without taking logs). All regressions include term, municipality, and party-term fixed effects. *, ** and *** denote significance at ten, five, and one percent level, respectively. Standard errors in parenthesis clustered at the municipality level.

Table A.4: Balance Test - Employment of Party Members in the Municipal Public Sector in the Year Before the Start of the Mayoral Term

	(1)	(2)	(3)	(4)	(5)
	Party members employed in the municipal public sector		Total party members hired		Separation rate (annual avg.)
	Log	Share of total municipal employees	Log	Share of total municipal hires	
Panel A: RDD estimates using a second order spline polynomial specification					
Winner coalition	0.011	-0.000	0.020	0.001	-0.004
	(0.020)	(0.002)	(0.015)	(0.003)	(0.003)
Observations	21,272	21,272	21,272	19,430	20,488
No. municipalities	5,532	5,532	5,532	5,346	5,459
Panel B: RDD estimates for local linear regression with observation in interval [-0.050; +0.050]					
Winner coalition	-0.010	-0.001	0.060	0.002	-0.014*
	(0.063)	(0.006)	(0.045)	(0.009)	(0.009)
Observations	2,694	2,694	2,694	2,422	2,588
No. municipalities	1,259	1,259	1,259	1,144	1,209
Panel C: RDD estimates for local linear regression with observation in interval [-0.010; +0.010]					
Winner coalition	-0.042	-0.013	0.109	-0.008	-0.001
	(0.102)	(0.010)	(0.071)	(0.016)	(0.008)
Observations	1,070	1,070	1,070	964	1,020
No. municipalities	523	523	523	471	498

Notes. This table reports balance tests for employment of party members in municipal public sector in the year before the start of the mayoral term. Observations are at the municipality, electoral coalition, and term level. Sample includes mayoral terms 2005-2008 and 2009-2012. Sample includes only the coalition of the winning mayoral candidate and the coalition of the runner-up candidate. Panel A reports RDD estimates following equation (E.3), fitting a 2^{nd} order polynomial on MV in both sides of the threshold $MV = 0$. Panel B and C present local linear regression estimates, based on equation (E.4) and considering alternative bandwidths with margin of victory in the intervals [-0.025;+0.025], and [-0.010;+0.010], respectively. *Winner coalition* is a dummy variable that equals one for the coalition of the winning mayoral candidate and zero for the coalition of the runner-up candidate. *Mean dep. var - runner-up coalition* is the mean of the dependent variable for party members of the coalition of the runner-up candidate (without taking logs). All regressions include term, municipality, and party-term fixed effects. *, ** and *** denote significance at ten, five, and one percent level, respectively. Standard errors in parenthesis clustered at the municipality level.

Table A.5: Balance Test - Characteristics of Party Members in the Year Before the Start of the Mayoral Mandate

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Party members		Party members in the formal sector		Female (share)	White (share)	Years of schooling (avg.)	Higher education degree (share)	High Skill (share)	Low Skill (share)	Wage	
	Log	Share	Log	Share							Log	Residual
Panel A: RDD estimates using a second order spline polynomial specification												
Winner coalition	0.029*	-0.000	0.017	-0.000	-0.004	0.000	-0.022	-0.003	-0.001	-0.001	-0.003	-0.005
	(0.016)	(0.001)	(0.017)	(0.001)	(0.003)	(0.002)	(0.022)	(0.003)	(0.001)	(0.002)	(0.003)	(0.005)
Observations	21,272	21,272	21,272	21,272	21,129	21,129	21,116	21,116	21,116	21,129	21,129	21,129
No. municipalities	5,532	5,532	5,532	5,532	5,520	5,520	5,518	5,518	5,518	5,520	5,520	5,520
Panel B: RDD estimates for local linear regression with observation in interval [-0.025;+0.025]												
Winner coalition	-0.025	-0.002	-0.006	-0.000	-0.017**	-0.006	0.035	0.007	0.003	-0.001	0.000	0.016
	(0.048)	(0.002)	(0.055)	(0.004)	(0.008)	(0.007)	(0.067)	(0.009)	(0.005)	(0.006)	(0.008)	(0.015)
Observations	2,694	2,694	2,694	2,694	2,660	2,660	2,656	2,656	2,656	2,660	2,660	2,660
No. municipalities	1,259	1,259	1,259	1,259	1,243	1,243	1,242	1,242	1,242	1,243	1,243	1,243
Panel C: RDD estimates for local linear regression with observation in interval [-0.010;+0.010]												
Winner coalition	-0.027	-0.002	-0.078	-0.010	-0.013	-0.003	-0.178	-0.016	0.000	-0.011	0.005	-0.012
	(0.084)	(0.004)	(0.092)	(0.006)	(0.014)	(0.012)	(0.130)	(0.015)	(0.008)	(0.009)	(0.014)	(0.024)
Observations	1,070	1,070	1,070	1,070	1,054	1,054	1,054	1,054	1,054	1,054	1,054	1,054
No. municipalities	523	523	523	523	515	515	515	515	515	515	515	515

Notes. This table reports balance tests for characteristics of party members in the year before the start of the mayoral term. Observations are at the municipality, electoral coalition, and term level. Sample includes mayoral terms 2005-2008 and 2009-2012. Sample includes only the coalition of the winning mayoral candidate and the coalition of the runner-up candidate. Panel A reports RDD estimates following equation (E.3), fitting a 2^{nd} order polynomial on MV in both sides of the threshold $MV = 0$. Panel B and C present local linear regression estimates, based on equation (E.4) and considering alternative bandwidths with margin of victory in the intervals [-0.025;+0.025], and [-0.010;+0.010], respectively. *Winner coalition* is a dummy variable that equals one for the coalition of the winning mayoral candidate and zero for the coalition of the runner-up candidate. *Mean dep. var - runner-up coalition* is the mean of the dependent variable for party members of the coalition of the runner-up candidate (without taking logs). All regressions include term, municipality, and party-term fixed effects. *, ** and *** denote significance at ten, five, and one percent level, respectively. Standard errors in parenthesis clustered at the municipality level.

Table A.6: Balance Checks - Mayoral Candidate Characteristics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Age	Female	Married	College	Incumbent	PT	PMDB	PSDB	DEM
Panel A: RDD estimates using a second order spline polynomial specification									
Winner coalition	-0.081	-0.004	0.005	0.001	-0.010	0.011	-0.004	0.001	-0.005
	(0.434)	(0.008)	(0.010)	(0.012)	(0.011)	(0.008)	(0.009)	(0.011)	(0.009)
Observations	21,269	21,272	21,272	21,272	21,272	21,272	21,272	21,272	21,272
No. municipalities	5,532	5,532	5,532	5,532	5,532	5,532	5,532	5,532	5,532
Panel B: RDD estimates for local linear regression with observation in interval [-0.025; +0.025]									
Winner coalition	2.710	-0.006	0.050*	-0.043	-0.011	0.021	0.015	-0.025	-0.021
	(2.639)	(0.024)	(0.030)	(0.035)	(0.036)	(0.024)	(0.028)	(0.035)	(0.028)
Observations	2,692	2,694	2,694	2,694	2,694	2,698	2,698	2,698	2,698
No. municipalities	1,258	1,259	1,259	1,259	1,259	1,261	1,261	1,261	1,261
Panel C: RDD estimates for local linear regression with observation in interval [-0.010; +0.010]									
Winner coalition	5.051	0.036	0.030	-0.043	-0.101	0.051	-0.006	-0.101*	-0.004
	(3.911)	(0.040)	(0.048)	(0.057)	(0.061)	(0.040)	(0.046)	(0.059)	(0.045)
Observations	1,070	1,070	1,070	1,070	1,070	1,082	1,082	1,082	1,082
No. municipalities	523	523	523	523	523	527	527	527	527

Notes. This table reports balance checks for mayoral candidate characteristics. Observations are at the municipality, coalition, and term level. Observations are at the municipality, electoral coalition, and term level. Sample includes elections held in 2004 and 2008. Sample includes only the coalition of the winning mayoral candidate and the coalition of the runner-up candidate. Panel A reports RDD estimates following equation (E.3), fitting a 2^{nd} order polynomial on MV in both sides of the threshold $MV = 0$. Panel B and C present local linear regression estimates, based on equation (E.4) and considering alternative bandwidths with margin of victory in the intervals [-0.025;+0.025], and [-0.010;+0.010], respectively. *Winner coalition* is a dummy variable that equals one for the coalition of the winning mayoral candidate and zero for the coalition of the runner-up candidate. *Mean dep. var - runner-up coalition* is the mean of the dependent variable for party members of the coalition of the runner-up candidate (without taking logs). All regressions include term, municipality, and party-term fixed effects. *, ** and *** denote significance at ten, five, and one percent level, respectively. Standard errors in parenthesis clustered at the municipality level.

Table A.7: Effect of Winning Office on Employment of Party Members in the Municipal Public Sector - Considering only Two-candidate Races

	(1)	(2)	(3)	(4)	(5)
	Party members employed in the private sector		Total party members hired in the private sector		Separation rate (annual avg.)
	Log	Share of total private sector employees	Log	Share of total private sector hires	
Panel A: RDD estimates using a second order spline polynomial specification					
Winner coalition	0.325***	0.028***	0.596***	0.037***	0.011***
	(0.024)	(0.002)	(0.022)	(0.001)	(0.002)
Observations	10,976	10,976	10,976	10,976	10,770
No. municipalities	3,864	3,864	3,864	3,864	3,815
Mean dep. var. - runner-up party	117.0	0.030	135.8	0.020	0.242
Panel B: RDD estimates for local linear regression with observation in interval [-0.025;+0.025]					
Winner coalition	0.272***	0.023***	0.548***	0.031***	0.018***
	(0.070)	(0.007)	(0.066)	(0.004)	(0.005)
Observations	1,282	1,282	1,282	1,282	1,272
No. municipalities	614	614	614	614	610
Mean dep. var. - runner-up party	34.5	0.080	2.1	0.041	0.094
Panel C: RDD estimates for local linear regression with observation in interval [-0.010;+0.010]					
Winner coalition	0.249**	0.020*	0.768***	0.043***	0.021**
	(0.117)	(0.012)	(0.113)	(0.007)	(0.009)
Observations	502	502	502	502	500
No. municipalities	248	248	248	248	247
Mean dep. var. - runner-up party	33.2	0.080	2.0	0.039	0.090

Notes. This table analyzes the effect of winning a mayoral election employment of coalition members in the municipal public sector. Observations are at the municipality, coalition, and term level. Sample includes mayoral terms 2005-2008 and 2009-2012. Sample includes only the coalition of the winning mayoral candidate and the coalition of the runner-up candidate for races with only two candidates. Panel A reports RDD estimates following equation (E.3), fitting a 2^{nd} order polynomial on MV in both sides of the threshold $MV = 0$. Panel B and C present local linear regression estimates, based on equation (E.4) and considering alternative bandwidths with margin of victory in the intervals [-0.025;+0.025], and [-0.010;+0.010], respectively. *Winner coalition* is a dummy variable that equals one for the party of the winning mayoral candidate and zero for the party of the runner-up candidate. *Mean dep. var - runner-up coalition* is the mean of the dependent variable for party members of the coalition of the runner-up candidate (without taking logs). All regressions include term, municipality, and coalition-term fixed effects. *, ** and *** denote significance at ten, five, and one percent level, respectively. Standard errors in parenthesis clustered at the municipality level.

Table A.8: Effect of Winning Office on Employment of Party Members in the Municipal Public Sector - Considering only Members of the Leading Party in the Coalition

	(1)	(2)	(3)	(4)	(5)
	Party members employed in the private sector		Total party members hired in the private sector		Separation rate (annual avg.)
	Log	Share of total private sector employees	Log	Share of total private sector hires	
Panel A: RDD estimates using a second order spline polynomial specification					
Winner party	0.390***	0.014***	0.589***	0.017***	0.012***
	(0.018)	(0.001)	(0.017)	(0.001)	(0.002)
Observations	21,272	21,272	21,272	21,272	20,013
No. municipalities	5,532	5,532	5,532	5,532	5,392
Mean dep. var. - runner-up coalition	117.0	0.030	135.8	0.020	0.242
Panel B: RDD estimates for local linear regression with observation in interval [-0.025;+0.025]					
Winner party	0.369***	0.011***	0.535***	0.014***	0.026***
	(0.057)	(0.003)	(0.051)	(0.002)	(0.007)
Observations	2,694	2,694	2,694	2,694	2,452
No. municipalities	1,259	1,259	1,259	1,259	1,150
Mean dep. var. - runner-up coalition	15.0	0.029	5.6	0.014	0.108
Panel C: RDD estimates for local linear regression with observation in interval [-0.010;+0.010]					
Winner party	0.373***	0.011**	0.572***	0.015***	0.016
	(0.097)	(0.004)	(0.087)	(0.003)	(0.011)
Observations	1,070	1,070	1,070	1,070	956
No. municipalities	523	523	523	523	466
Mean dep. var. - runner-up coalition	16.1	0.029	6.1	0.014	0.098

Notes. This table analyzes the effect of winning a mayoral election employment of party members in the municipal public sector. Observations are at the municipality, party, and term level. Sample includes mayoral terms 2005-2008 and 2009-2012. Sample includes only the party of the winning mayoral candidate and the coalition of the runner-up candidate. Panel A reports RDD estimates following equation (E.3), fitting a 2^{nd} order polynomial on MV in both sides of the threshold $MV = 0$. Panel B and C present local linear regression estimates, based on equation (E.4) and considering alternative bandwidths with margin of victory in the intervals [-0.025;+0.025], and [-0.010;+0.010], respectively. *Winner party* is a dummy variable that equals one for the party of the winning mayoral candidate and zero for the party of the runner-up candidate. *Mean dep. var - runner-up party* is the mean of the dependent variable for party members of the party of the runner-up candidate (without taking logs). All regressions include term, municipality, and party-term fixed effects. *, ** and *** denote significance at ten, five, and one percent level, respectively. Standard errors in parenthesis clustered at the municipality level.

Table A.9: Effect of Winning Office on Employment of Party Members in the Municipal Public Sector - Party Membership Constant Over the Mayoral Term

	(1)	(2)	(3)	(4)	(5)
	Party members employed in the private sector		Total party members hired in the private sector		Separation rate (annual avg.)
	Log	Share of total private sector employees	Log	Share of total private sector hires	
Panel A: RDD estimates using a second order spline polynomial specification					
Winner coalition	0.275***	0.018***	0.531***	0.027***	0.016***
	(0.017)	(0.001)	(0.016)	(0.001)	(0.001)
Observations	21,272	21,272	21,272	21,272	20,900
No. municipalities	5,532	5,532	5,532	5,532	5,497
Mean dep. var. - runner-up party	42.4	0.062	17.1	0.033	0.085
Panel B: RDD estimates for local linear regression with observation in interval [-0.025;+0.025]					
Winner coalition	0.232***	0.016***	0.491***	0.024***	0.019***
	(0.052)	(0.004)	(0.047)	(0.003)	(0.003)
Observations	2,694	2,694	2,694	2,694	2,660
No. municipalities	1,259	1,259	1,259	1,259	1,244
Mean dep. var. - runner-up party	39.5	0.067	2.2	0.036	0.088
Panel C: RDD estimates for local linear regression with observation in interval [-0.010;+0.010]					
Winner coalition	0.262***	0.015**	0.550***	0.026***	0.021***
	(0.087)	(0.007)	(0.078)	(0.004)	(0.005)
Observations	1,070	1,070	1,070	1,070	1,058
No. municipalities	523	523	523	523	517
Mean dep. var. - runner-up party	38.7	0.067	2.2	0.035	0.088

Notes. This table analyzes the effect of winning a mayoral election on other measures of employment of party members in the municipal private sector, considering individuals' party membership in the electoral year and maintaining it constant for the whole mayoral term to avoid capturing changes in party membership that occurred following the elections. Observations are at the municipality, electoral coalition, and term level. Sample includes mayoral terms 2005-2008 and 2009-2012. Sample includes only the coalition of the winning mayoral candidate and the coalition of the runner-up candidate. Individuals are classified as party members based on their political party membership in the electoral year (i.e., we do not consider any changes in party membership that may have occurred following the elections). Panel A reports RDD estimates following equation (E.3), fitting a 2^{nd} order polynomial on MV in both sides of the threshold $MV = 0$. Panel B and C present local linear regression estimates, based on equation (E.4) and considering alternative bandwidths with margin of victory in the intervals [-0.025;+0.025], and [-0.010;+0.010], respectively. *Winner party* is a dummy variable that equals one for the party of the winning mayoral candidate and zero for the coalition of the runner-up candidate. *Mean dep. var - runner-up party* is the mean of the dependent variable for party members of the party of the runner-up candidate (without taking logs). All regressions include term, municipality, and party-term fixed effects. *, ** and *** denote significance at ten, five, and one percent level, respectively. Standard errors in parenthesis clustered at the municipality level.

Table A.10: Effect of Winning Office on Employment of Party Members in the Municipal Public Sector - Senior Officials and Managers - New Hires and Promotions

	(1)	(2)	(3)	(4)
	Senior officials and managers			
	All	Senior public administration officials	All	Senior public administration officials
	Hires		Promotions	
Panel A: Party members employed in municipality by job category (in logs)				
Winner coalition	0.543***	0.429***	0.365***	0.303***
	(0.015)	(0.014)	(0.014)	(0.013)
Observations	21,272	21,272	21,272	21,272
Municipalities	5,532	5,532	5,532	5,532
Mean dep. var. runner-up	2.3	1.8	1.6	1.3
Panel B: Party members employed in municipality by job category (share of job category)				
Winner coalition	0.091***	0.093***	0.057***	0.066***
	(0.005)	(0.006)	(0.004)	(0.005)
Observations	20,624	19,660	20,624	19,660
Municipalities	5,451	5,314	5,451	5,314
Mean dep. var. runner-up	2.380	1.991	1.693	1.388

Notes. This table analyzes promotions and hirings of the party members into senior positions in the municipal public sector. Observations are at the municipality, coalition, and year level. Sample includes only the coalition of the winning mayoral candidate and the coalition of the runner-up candidate. Sample includes mayoral terms 2005-2008 and 2009-2012. This table reports RDD estimates following equation (E.3), fitting a 2^{nd} order polynomial in MV in both sides of the threshold $MV = 0$. All regressions include municipality, term, and party-term fixed effects. The dependent variable in Panel A is (the log of one plus) the total number of members of the winning or runner-up coalitions that are promoted or hired into senior positions in the municipal public sector over the whole mayoral term. The dependent variable in Panel B is the number of promotions or hires of members of the winner/runner-up coalitions over the whole mayoral term scaled by the average number of workers in each occupational category. Columns (1) and (2) display results for hires, and columns (3) and (4) display results for promotions. Columns (1) and (4) show results considering all senior officials and managers, while columns (2) and (4) focus on the top senior officials in the municipal government. *Winner coalition* is a dummy variable that equals one for the coalition of the winning mayoral candidate and zero for the coalition of the runner-up candidate. *Mean dep. var - runner-up coal. before term* is the mean of the dependent variable for party members of the coalition of the runner-up candidate in the years before the mayoral term (without taking logs). *, ** and *** denote significance at ten, five, and one percent level, respectively. Standard errors in parenthesis clustered at the municipality level.

Table A.11: Effect of Winning Office on Wages of Party Members in the Public Sector

	(1)	(2)	(3)	(4)	(5)	(6)
	Senior officials and managers					
	All	Senior public administration officials	Professionals	Mid-level technicians	Clerks	Blue collar workers
	Panel A: Wage (log)					
Winner coalition	0.197***	0.213***	0.096***	0.055***	0.073***	0.035***
	(0.011)	(0.013)	(0.009)	(0.007)	(0.005)	(0.004)
Observations	13,250	9,890	17,154	16,748	20,050	17,498
No. municipalities	4,143	3,247	4,898	4,815	5,364	4,969
Mean dep. var. - runner-up coalition	1,492	1,596	1,486	967.0	789.7	906.2
	Panel B: Wage residual					
Winner coalition	0.132***	0.145***	0.070***	0.041***	0.046***	0.026***
	(0.009)	(0.012)	(0.007)	(0.006)	(0.003)	(0.004)
Observations	13,066	9,720	17,004	16,550	19,990	17,144
No. municipalities	4,109	3,205	4,870	4,781	5,360	4,902
Mean dep. var. - runner-up coalition	0.214	0.232	0.062	0.010	-0.072	0.032

Notes. This table analyzes the effect of winning a mayoral election on the wages of party members hired by the municipal public sector. Observations are at the municipality, coalition, and term level. Sample includes mayoral terms 2005-2008 and 2009-2012. Sample includes only the coalition of the winning mayoral candidate and the coalition of the runner-up candidate. Panel A shows results using the log of wage in the public sector as dependent variable. Panel B shows results using the wage residuals in the public sector. *Winner coalition* is a dummy variable that equals one for the coalition of the winning mayoral candidate and zero for the coalition of the runner-up candidate. *Mean dep. var - runner-up coalition* is the mean of the dependent variable for party members of the coalition of the runner-up candidate (without taking logs). All regressions include term, municipality, and party-term fixed effects. *, ** and *** denote significance at ten, five, and one percent level, respectively. Standard errors in parenthesis clustered at the municipality level.

Table A.12: Effect of Winning Office on Employment of Party Members in the Municipal Administration - RDD Diff-in-Diff estimates - Occupational Categories

	(1)	(2)	(3)	(4)	(5)	(6)
	Senior officials and managers					
	All	Senior managers and directors	Professionals	Mid-level technicians	Clerks	Blue collar workers
Panel A: Party members employed in municipality by job category (in logs)						
Winner coalition × Year 1	0.573***	0.452***	0.140***	0.101***	0.201***	0.110***
	(0.016)	(0.015)	(0.011)	(0.011)	(0.011)	(0.010)
Winner coalition × Year 2	0.642***	0.508***	0.177***	0.141***	0.258***	0.160***
	(0.017)	(0.016)	(0.012)	(0.012)	(0.012)	(0.011)
Winner coalition × Year 3	0.620***	0.480***	0.193***	0.155***	0.258***	0.174***
	(0.018)	(0.017)	(0.013)	(0.013)	(0.012)	(0.012)
Winner coalition × Year 4	0.642***	0.504***	0.233***	0.218***	0.313***	0.248***
	(0.020)	(0.018)	(0.014)	(0.014)	(0.014)	(0.014)
Observation	148,264	148,264	148,264	148,264	148,264	148,264
No. municipalities	5,532	5,532	5,532	5,532	5,532	5,532
Mean dep. var. runner-up before term	3.7	2.8	6.8	5.7	17.7	6.2
Panel B: Party members employed in municipality by job category (share oj job category)						
Winner coalition × Year 1	0.118***	0.125***	0.010***	0.011***	0.019***	0.019***
	(0.004)	(0.006)	(0.001)	(0.002)	(0.001)	(0.002)
Winner coalition × Year 2	0.124***	0.131***	0.012***	0.015***	0.024***	0.027***
	(0.005)	(0.006)	(0.001)	(0.002)	(0.001)	(0.002)
Winner coalition × Year 3	0.115***	0.119***	0.016***	0.022***	0.029***	0.044***
	(0.005)	(0.006)	(0.001)	(0.002)	(0.001)	(0.003)
Winner coalition × Year 4	0.115***	0.119***	0.016***	0.022***	0.029***	0.044***
	(0.005	(0.006)	(0.001)	(0.002)	(0.001)	(0.003)
Observation	134,380	120,278	144,782	142,904	147,672	141,090
No. municipalities	5,479	5,379	5,528	5,519	5,531	5,502
Mean dep. var. runner-up before term	0.097	0.098	0.048	0.063	0.076	0.111

Notes. This table reports results of RDD estimates following equation (E.5), fitting a 2^{nd} order polynomial in MV in both sides of the threshold $MV = 0$. All regressions include term-period, municipality, and party-term fixed effects. The dependent variable is the number of party members belonging to the winner or runner-up coalition divided by the total number of municipal public sector in that occupation. Observations are at the municipality, coalition, and year level. Sample includes only the coalition of the winning mayoral candidate and the coalition of the runner-up candidate. Sample includes mayoral terms 2005-2008 and 2009-2012. For each mayoral term, we use seven annual observations, including three years before the beginning of the term and the four years of the term. *Winner coalition* is a dummy variable that equals one for the coalition of the winning mayoral candidate and zero for the coalition of the runner-up candidate. *Winner coalition* x $Year\ t = (1, 2, 3, 4)$ are interactions between the dummy variable *Winner coalition* and different dummy variable for each of the mayoral term. *Mean dep. var - runner-up coal. before term* is the mean of the dependent variable for party members of the coalition of the runner-up candidate in the years before the mayoral term (without taking logs). *, ** and *** denote significance at ten, five, and one percent level, respectively. Standard errors in parenthesis clustered at the municipality level.

To the Victor Belongs the Spoils? Party Membership and Public Sector Employment in Brazil

Online Appendix B

Our main empirical approach exploits the fact that, differently from other settings, we can observe outcomes both for members of the winning party and for members of the runner-up party in a given municipality and mayoral term. This allows us to conduct an RDD in close races within municipality, comparing outcomes between parties and abstracting from any differences across municipalities. As an alternative approach, this Online Appendix presents results using an RDD in close races across municipalities, which is similar to standard regression discontinuity designs in the literature. In particular, for a given party, we compare the public sector employment of its members in municipalities where the party barely won an election with municipalities where the party barely lost an election. The intuition for this empirical strategy is that municipalities where a given party lost an election by a narrow margin can be a good counterfactual for municipalities where the same party won an election by a narrow margin. We view this approach as complementary to our main empirical approach, and it can provide additional information, by highlighting differences across parties in the extent to which they favour their party members in hiring.

To implement our RDD approach we estimate the following regression separately for different political parties.[1]

$$\tau_{pmj} = \sum_{k=0}^{q} \rho_k MV_{pmj}^k + Winner_{pmj} \sum_{k=0}^{q} \delta_k MV_{pmj}^k + \alpha_j + \varepsilon_{pmj} \qquad \text{(E.B.1)}$$

where τ_{pmj} is a measure of the public sector employment of members of party p, in municipality m, in term j. $Winner_{pmj}$ is a dummy that equals one if party p won the elections and is in power in municipality m and mayoral term j, and zero otherwise (i.e., for those municipalities where party p was the runner-up). α_j are term fixed effects. The sample is

[1] We also conducted these analyses using a local linear regression considering alternative bandwidths (5%, 2.5%, and 1%) and obtained similar results.

restricted to those municipalities where party m either won the mayoral elections or was the runner-up. Standard errors are clustered at the municipality level. Different from equation (**??**) in the main text of the paper, we do not include political party-term fixed effects, since we estimate separate regressions for each party. We also don't include municipality fixed effects, as many municipalities only enter our sample once.[2]

Appendix Table B.1 presents the results of our RDD estimates of (E.B.1) for all the measures of employment in the municipal public sector that we study in Tables 3 and 4. [3] We estimate separate sets of regressions for the party that was in power at the national level, namely *Partido dos Trabalhadores* (Panel A) and the three largest parties in terms of mayoral elections won during our sample period: *Partido do Movimento Democrático Brasileiro* (Panel B); *Partido da Social Democracia Brasileira* (Panel C); and *Democratas* (Panel D).

The results reported in Appendix Table B.1 show that considering an RDD in close races across municipalities, within a given party, yields similar results as our main approach. In particular, the results in columns (1) and (2) show that the number of members of a given party working in the municipal public sector is higher in municipalities where the party won a close election than in municipalities where it lost a close election, both in absolute terms and as a fraction of total municipal workers. Moreover, the results in columns (3) and (4) show that winning a mayoral election has a positive and significant effect on the hiring of party members in the municipal public sector. We do not find any qualitative differences across parties, as all parties increase the hiring of their party members when they win the mayoral elections. In terms of magnitude, the results suggest that the *Partido dos Trabalhadores* and the *Partido do Movimento Democrático Brasileiro* tend to engage in more discretionary hiring of their party members than the other parties.

The RDD in close races across municipalities, within party, controls for time-invariant and time-varying differences between municipalities where a given party won a close election and municipalities where it lost a close election. Therefore, we should not expect any differences between treatment and control groups around the cutoff $MV_{pmj} = 0$. Appendix Table B.2 reports the results of balance checks for several municipality characteristics, as well as mayoral candidate characteristics. The results show that that there is no discontinuity around the cutoff $MV_{pmj} = 0$.

[2]We obtain similar results if we include municipality fixed effects, although this implies focusing only on municipalities where a given party was either the winner or the runner-up in both the 2004 and the 2008 mayoral elections.

[3]Similarly to Tables 3 and 4, we aggregate outcomes for members of all parties belonging to the winning or runner-up coalitions.

Table B.1: Effect of Winning Office on Employment of Party Members in the Municipal Public Sector - RDD across Municipalities by Political Party

	(1)	(2)	(3)	(4)	(5)
	Party members employed in the municipal public sector		Total party members hired over the whole term		Separation rate (annual avg.)
	Log	Share of total municipal employees	Log	Share of total municipal hires	
Panel A: Partido dos Trabalhadores (PT)					
PT winner	0.427***	0.028***	0.766***	0.033***	0.018***
	(0.108)	(0.004)	(0.107)	(0.003)	(0.006)
Observations	1,938	1,938	1,938	1,938	1,880
No. municipalities	1,423	1,423	1,423	1,423	1,389
Mean dep. var.					
- PT runner-up	52.4	0.039	24.8	0.023	0.091
Panel B: Partido do Movimento Democrático Brasileiro (PMDB)					
PMDB winner	0.406***	0.029***	0.627***	0.035***	0.013***
	(0.059)	(0.004)	(0.067)	(0.002)	(0.004)
Observations	4,261	4,261	4,261	4,261	4,190
No. municipalities	3,035	3,035	3,035	3,035	3,005
Mean dep. var.					
- PMDB runner-up	44.3	0.069	17.5	0.035	0.094
Panel C: Partido da Social Democracia Brasileira (PSDB)					
PSDB winner	0.284***	0.026***	0.529***	0.031***	0.008
	(0.073)	(0.004)	(0.079)	(0.003)	(0.005)
Observations	2,420	2,420	2,420	2,420	2,392
No. municipalities	1,888	1,888	1,888	1,888	1,869
Mean dep. var.					
- PSDB runner-up	40.6	0.069	15.5	0.037	0.094
Panel D: Democratas (DEM)					
DEM winner	0.232***	0.020***	0.445***	0.026***	0.011**
	(0.068)	(0.004)	(0.076)	(0.003)	(0.004)
Observations	2,984	2,984	2,984	2,984	2,955
No. municipalities	2,202	2,202	2,202	2,202	2,184
Mean dep. var.					
- DEM runner-up	49.5	0.067	20.0	0.035	0.093

Notes. This table analyzes the effect of winning a mayoral election on employment of party members in the municipal public sector. Observations are at the municipality and term level. Sample includes mayoral terms 2005-2008 and 2009-2012. Each panel considers a different political party and the sample includes only municipalities where the party won the mayoral election or was the runner up. The table reports results of RDD estimates following equation (E.6), fitting a 2^{nd} order polynomial on MV in both sides of the threshold $MV = 0$. All regressions include term and municipality fixed effects. "Party" winner is a dummy variable that equals one in municipalities where the party coalition won the mayoral elections and zero in municipalities where the party coalition is the runner-up. *Mean dep. var - "party" runner-up* is the mean of the dependent variable in the municipality where the party was the runner-up (without taking logs). *, ** and *** denote significance at ten, five, and one percent level, respectively.

Table B.2: Balance Checks for Municipal and Mayoral Characteristics - RDD across Municipalities by Political Party

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Population	Area	Income	Urbanization	Sewer	Eletricity	Age	College	Incumbent
Panel A: Partido dos Trabalhadores (PT)									
PT winner	-0.147	0.028	-0.102*	-0.030	0.004	-0.020	0.333	-0.056	-0.006
	(0.102)	(0.107)	(0.053)	(0.021)	(0.025)	(0.015)	(0.723)	(0.042)	(0.033)
Observations	1,938	1,938	1,938	1,938	1,938	1,938	1,938	1,938	1,938
No. Municipalities	1,423	1,423	1,423	1,423	1,423	1,423	1,423	1,423	1,423
Panel B: Partido do Movimento Democrático Brasileiro (PMDB)									
PMDB winner	0.006	0.014	0.020	0.010	0.003	-0.004	1.289	0.000	-0.026
	(0.061)	(0.073)	(0.036)	(0.013)	(0.015)	(0.009)	(1.630)	(0.028)	(0.024)
Observations	4,261	4,261	4,261	4,261	4,261	4,261	4,261	4,261	4,261
No. Municipalities	3,035	3,035	3,035	3,035	3,035	3,035	3,035	3,035	3,035
Panel C: Partido da Social Democracia Brasileira (PSDB)									
PSDB winner	-0.020	-0.088	-0.053	-0.024	-0.043*	0.007	0.573	0.031	-0.017
	(0.079)	(0.093)	(0.047)	(0.017)	(0.022)	(0.013)	(0.755)	(0.036)	(0.031)
Observations	2,420	2,420	2,420	2,420	2,420	2,420	2,420	2,420	2,420
No. Municipalities	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888	1,888
Panel D: Democratas (DEM)									
DEM winner	-0.010	0.027	0.002	0.009	-0.007	0.001	-0.187	0.010	-0.022
	(0.075)	(0.085)	(0.042)	(0.015)	(0.020)	(0.010)	(0.689)	(0.034)	(0.029)
Observations	2,984	2,984	2,984	2,984	2,984	2,984	2,984	2,984	2,984
No. Municipalities	2,202	2,202	2,202	2,202	2,202	2,202	2,202	2,202	2,202

Notes. This table reports balance checks for municipal and mayoral candidate characteristics. Observations are at municipality and party level. Sample includes. Each panel considers a different political party. "Party" *winner* is a dummy variable that equals one for the municipalities where the party coalition won the mayoral elections and zero in municipalities where the party coalition is the runner-up. *, ** and *** denote significance at ten, five, and one percent level, respectively. Standard errors in parenthesis.