

The Politicization of Bureaucrats: Evidence from Brazil*

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Abstract

In developing countries, political incumbents commonly exercise influence over bureaucrats through monitoring or patronage. We investigate a new channel: their politicization, a phenomenon where bureaucrats formally join political parties while in office. Our proposed argument is simple: bureaucrats that deliver popular policies accumulate electoral capital among poor voters, either due to good performance or political capture. This makes them valuable assets for the networks of rent-seeking incumbents. We document this practice using administrative data on the universe of public employees in Brazil, plus detailed information on 55,000 bureaucrats that personally interviewed households for admission in the world's largest redistributive policy (*Bolsa Família*). Using a regression discontinuity design in close mayoral elections, we find that: (i) incumbent coalitions enlist more bureaucrats than the opposition for their party networks; (ii) this pattern is stronger for interviewers; and (iii) the effects are even stronger for those with higher exposure to voters.

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Bureaucracies largely determine both the quality of public services and citizens welfare in the developing world (Grossman and Slough, 2022). These in turn affect how voters evaluate government performance, and also the electoral prospects of incumbents. For this reason, bureaucrats commonly face the influence of politicians in power. Existing research has mainly studied two dimensions of bureaucratic control in low- and middle-income countries: (i) oversight, and how the monitoring of public employees by elected officials affects performance (Dasgupta and Kapur, 2020; Gulzar and Pasquale, 2017; Raffler, 2020), corruption (Brierley, 2020), and elections (Martin and Raffler, 2021; Slough, 2021a,b); or (ii) appointments, which focuses on the consequences of patronage to public good outcomes (Grindle, 2012; Colonnelli, Prem, and Teso, 2020; Brollo, Ferrara, and Kaufmann, 2017; Toral, 2022a,b).

Both these approaches, however, treat the politics of bureaucrats as given. On the one hand, the oversight literature frames them within the Weberian model as an ideologically neutral group. In this case, political influence is primarily exercised through “monitoring and the associated threat of sanctions” (Grossman and Slough, 2022). On the other, the patronage literature treats them as politicized agents with fixed pre-existing loyalties, and political influence on the bureaucracy is only exercised through selection. In doing so, both cases miss an important piece of the puzzle: whether and how bureaucrats acquire or shift political attachments while on the job. Given the unique role that bureaucrats play in the political survival of incumbents (Gehlbach and Simpser, 2015), their incentives for political engagement are directly affected by the nature of their employment, and are therefore fundamentally different from the ones faced by the average voter.

We fill this gap by investigating the political engagement of bureaucrats with incumbent parties in Brazil. For 7 million bureaucrats in 5,000+ municipalities, we define politicization as their decision to affiliate with political parties,¹ or to run for public office. In short, we show that incumbents have a significant advantage in forming political attachments with bureaucrats already in office, and more so with street-level providers of salient policies who are highly exposed to voters.

Accordingly, we propose and rigorously test a policy-driven logic to explain these patterns of politicization. The intuition is straightforward: voter-facing bureaucrats that deliver broad, popular, and salient policies accumulate electoral capital among poor voters, either due to good per-

¹In the Brazilian decentralized party system, party recruitment is primarily a local affair. Also, even though party affiliation is ultimately an individual decision, party growth is largely the result of recruitment efforts by local leaderships – often implying an exchange of political support for patronage – rather than the voters’ response to national programmatic platforms. See more details in page 11.

formance or political capture (Boas et al., 2021). This creates mutual incentives for the formation of political ties between incumbents and bureaucrats. From the incumbent's perspective, these bureaucrats are now valuable assets for political mobilization. From the bureaucrat's perspective, partisan engagement offers access to patronage, and even the prospect of a political career. These incentives are particularly prominent for incumbent parties instead of the opposition: not only public service performance is better associated with the current administration, but incumbents often have an upper hand in capturing credit for public policies with practices such as clientelism.²

We first document this practice with individual-level administrative data on the universe of (i) municipal employees; (ii) party members; and (iii) council candidates in local elections in Brazil. With this data, we build two proxies of politicization at the municipality-party level: *Membership* and *Candidacy*, which measure the share of the local bureaucracy that joined a political party in 2009-2012, or ran for local council in 2012; respectively.

We also focus on a special set of bureaucrats: those working on Brazil's *Bolsa Família* (BF). This is the largest cash transfer program in the world, with extensively debated implications to electoral politics (Frey, 2019; Zucco Jr., 2013). In particular, we have access to untapped administrative data on 55,000+ municipal bureaucrats that personally interviewed 16 million poor households in 2009-2012 for admission into the program. Even though BF is a federal policy, municipal bureaucrats are responsible for the enrollment of beneficiaries in the program's registry – the *Cadastro Único* (CadUnico) – and are the effective gatekeepers of this benefit. In this context, their partisan engagement provides a particularly suitable application to test our argument. The average interviewer saw at least 280 households in 2009-2012, roughly 10% of the local electorate. For perspective, a 10% shift in the mayoral vote would have changed the outcome of 70%+ of all races in Brazil in 2012.

With these multiple datasets, we use a regression discontinuity design (RDD) to precisely identify an incumbency advantage in the politicization of bureaucrats. Within each municipality, we compare the *Membership* and *Candidacy* measures for the party coalition that won the 2008 mayoral election in a close race – and thus became the incumbent in 2009-2012 – to the coalition that lost.

The main results show that incumbent parties enlisted 103% more bureaucrats than the opposition in 2009-2012, and also fielded 66% more candidates coming from the bureaucracy in 2012.

²See Brollo, Kaufmann, and La Ferrara (2019) and Frey (2021) for evidence on how bureaucrats manipulate public benefits in exchange of political support for incumbents in the context of the cash transfers program *Bolsa Família* in Brazil. The targeted use of public resources in exchange for electoral support is a common feature of the Brazilian electoral system (Gingerich, 2014; Hidalgo and Nichter, 2015; Nichter, 2018).

What is more, these results are much stronger for CadUnico interviewers: for this group, the incumbency advantages were 237% for *Membership*, and 113% for *Candidacy*. We show that these effects are not driven by (i) the party affiliation or candidacy patterns observed among the overall voting population; or (ii) differences between CadUnico interviewers and other bureaucrats in age, gender, education, occupation, hiring date, wages, and pre-existing political ties.

These initial results already highlight the role of the bureaucracy's engagement in policy delivery on its politicization. Nevertheless, we show further evidence of the proposed mechanism using two sources of heterogeneity in the incumbency advantage. First, we use CadUnico records to count the number of household interviews by each bureaucrat in the period – a measure that closely reflects their level of policy-driven interaction with potential voters. Then, within municipalities and within the group of CadUnico interviewers, we show that our estimated incumbency effects for both *Membership* and *Candidacy* are highly concentrated on the group of interviewers that were more exposed to voters. What is more, the concentration of these effects on highly active interviewers seems to be driven by interviews of households that were eligible to BF benefits.

Second, we examine the heterogeneity of the results across municipalities, based on their potential for the expansion in CadUnico registration in 2009-2012. Here we benefit from an unilateral and sizable expansion in BF by the federal government, which increased the enrollment in CadUnico by nearly 7 million households. This further raised the program's salience in a country where voters have been shown to monitor and punish local politicians for their performance (Feierherd, 2020; Klašnja and Titiunik, 2017), and created opportunities for political capture of the benefits (Brollo, Kaufmann, and La Ferrara, 2019; Frey, 2021). Although it happened in 2009, this adjustment to the municipal CadUnico targets was not driven by post-treatment variables,³ and generated a significant cross-municipal variation in the need for enrollment among poor voters. We show that the incumbency effects for both *Membership* and *Candidacy* of interviewers are significantly higher in municipalities with higher enrollment potential – a heterogeneity that is not observed for either the politicization of other bureaucrats (non-interviewers) or the rest of the voting population.

We further explore the role of the partisanship of the winning mayoral coalition on the heterogeneity of the results. Despite the divided responsibilities in program management, voters most often associate BF's brand and its success with the incumbent federal administration led by Presi-

³The new estimates of CadUnico-eligible families were the result of a methodological change in the formula used to determine local poverty levels. See details in page 22.

dent Lula and the Worker's Party (PT) that created the program in 2003, and expanded it in 2009. In this context, one would expect that local bureaucrats are better able to capture electoral rewards from CadUnico interviews in areas where municipal governments can establish credible ties with PT's central administration. First, we show that our estimated effects are not restricted to PT mayors, but are observed for other parties as well. Nevertheless, consistent with the argument above, we show that the incumbency effects are higher in municipalities where the winning mayoral coalition was led by PT candidates, for both *Membership* (3x higher), and *Candidacy* (10x higher).

We also show that our proposed mechanism does not preclude the existence of patronage in policy delivery positions, but rather co-exists with this strategy that is commonly used by political incumbents in the developing world to control the bureaucracy (Colonnelli, Prem, and Teso, 2020; Brollo, Ferrara, and Kaufmann, 2017; Toral, 2022a,b). We highlight that our analysis departs from this literature in a significant way: while they take the partisan attachments of (potential) bureaucrats as given – and examine their recruitment into public service – we take their public employment as given and focus on their ingress into political networks. Nevertheless, using the same RDD strategy, we first show that the patterns of patronage already established by the literature in Brazil are also present here: CadUnico interviewers are 2x more likely to belong to an incumbent party than they are to be members of the opposition.⁴ However, different from our *Membership* and *Candidacy* effects, patronage is uncorrelated the expansion in CadUnico across municipalities. This suggests that, in the presence of highly salient policies, patronage might become relatively less attractive to incumbents than allocating nonpartisan bureaucrats to the task, while also attempting to recruit them to their parties.

All together, our findings show how incumbents benefit from the politicization of an influential part of the bureaucracy, beyond the already known use of patronage or oversight. The logic here applies beyond Brazil to any environment where bureaucrats provide valuable services to voters and are able to claim credit for them; and where joining the incumbent's political network is beneficial due to rent-extraction – all common features of many institutional environments in the developing world (Cruz, Labonne, and Querubín, 2020; Larreguy, Montiel Olea, and Querubin, 2017).

The evidence here is also a novel contribution to a growing literature on political selection (Dal Bó et al., 2017; Gulzar, 2021). Our findings are particularly related to two recent articles that ex-

⁴Based on their partisanship measured before the 2008 election.

amine empirical patterns of political candidacy in clientelistic environments. First, [Cruz, Labonne, and Querubin \(2017\)](#) describe a similar mechanism in a study in the Philippines. They show that centrally connected individuals within family networks are more likely to become candidates and perform better in elections. Here, instead of family connections, we focus on electoral linkages that are generated by policy-based interactions between voters and bureaucrats. Second, [Boas et al. \(2021\)](#) examine the case of bureaucrats responsible for enrolling small farmers in agricultural programs in Northeastern Brazil. They show that there is a strong correlation between their exposure to voters and their likelihood to enter local council elections. This evidence further supports the argument that policy-driven interactions between public servants and voters generate electoral capital. In this article, we show how this mechanism is particularly leveraged by incumbent parties.

BACKGROUND: CASH TRANSFERS AND LOCAL POLITICS IN BRAZIL

Brazil has a decentralized system of public spending where municipal administrations are the primary responsible for the implementation of several policies in health, education, and redistribution, mostly financed by both federal and state intergovernmental transfers. In this context, local incumbents often target public resources to voters in exchange for political support ([Hidalgo and Nichter, 2015](#); [Nichter, 2018](#)), and their performance in public office is key for the electoral success of their parties in higher elections ([Feierherd, 2020](#); [Klašnja and Titiunik, 2017](#); [Novaes, 2018](#)).

Local administrations also play a significant role in the implementation of *Bolsa Família* (BF) – the largest conditional cash transfers program in the world, and the most well known public policy in the country ([Castro et al., 2009](#)). In 2012, its benefits reached one fifth of the Brazilian households, providing an average increase of roughly 50% to the monthly income of its targeted population ([Frey, 2019](#)). Households can only gain access to BF benefits after enrolling in the program’s registry – *Cadastro Único* (CadÚnico) – in their respective municipalities. This registration consists of an interview where a city hall employee collects extensive information on the household’s profile and living conditions, including the self-reported monthly income that is used to determine the eligibility to BF and other federal benefits.⁵ Furthermore, BF also requires households to update

⁵As of 2012, all households that declared monthly per capita income below half the minimum wage (R\$311/US\$150 in 2012) were eligible to enroll in CadÚnico. Monthly income below R\$140 (US\$67) granted eligibility to the conditional BF benefit, which was only given to households with children or expectant mothers, and on their compliance with the program rules on school attendance and regular doctor visits. Eligibility to BF’s unconditional benefit was only based on

their income in CadUnico every 24 months with a new interview with a local bureaucrat.

In the context of CadUnico, municipalities are responsible for registering new users, verifying income claims, updating the information of existing beneficiaries, and monitoring their compliance with the rules on school attendance and health care visits. The actual approval of the benefit is done by the central government, based on both the CadUnico information and program quotas. Once approved, households receive a debit card from the federal government, where the funds are deposited on a monthly basis.⁶ Thus, although the municipal bureaucracy does not directly intermediate the distribution of funds, they have a substantial influence on local enrollment levels, and effectively play the role of gatekeepers of the program (Lindert et al., 2007).

Bolsa Família and local politics. Despite the divided responsibilities in program management, voters most often associate BF's brand and its success with the incumbent federal administration that created it, i.e., President Lula and the Worker's Party (PT) (Sugiyama and Hunter, 2013; Zucco Jr., 2013). This is not surprising, given the local politicians' lack of agency to interfere in the disbursement (Frey, 2019). Nevertheless, their control over CadUnico still allows local incumbents to capture electoral rewards from the program. For example, there is evidence that incumbents allow ineligible households to misreport income in order to receive the benefit (Frey, 2021); or show lenience on the school attendance conditionalities during the electoral period (Brollo, Kaufmann, and La Ferrara, 2019).

Local officials might also selectively target eligible beneficiaries to obtain the benefits – without manipulation of program rules – due to the excess demand for the policy. BF has had extensive waiting lists throughout its existence, especially in over-covered municipalities.⁷ As a consequence, even eligible households could be excluded from the benefit if they were late to enroll. This is aggravated by the widespread lack of reliable enrollment information among the poor. Even though the knowledge about BF reaches nearly 100% of the Brazilian population, many eligible households did not know how to actually obtain the benefit. A survey sponsored by the Ministry of Social Development in 2009 shows that 94% of the poor households without BF actually knew about the program, income (a lower threshold of R\$70/month in 2012).

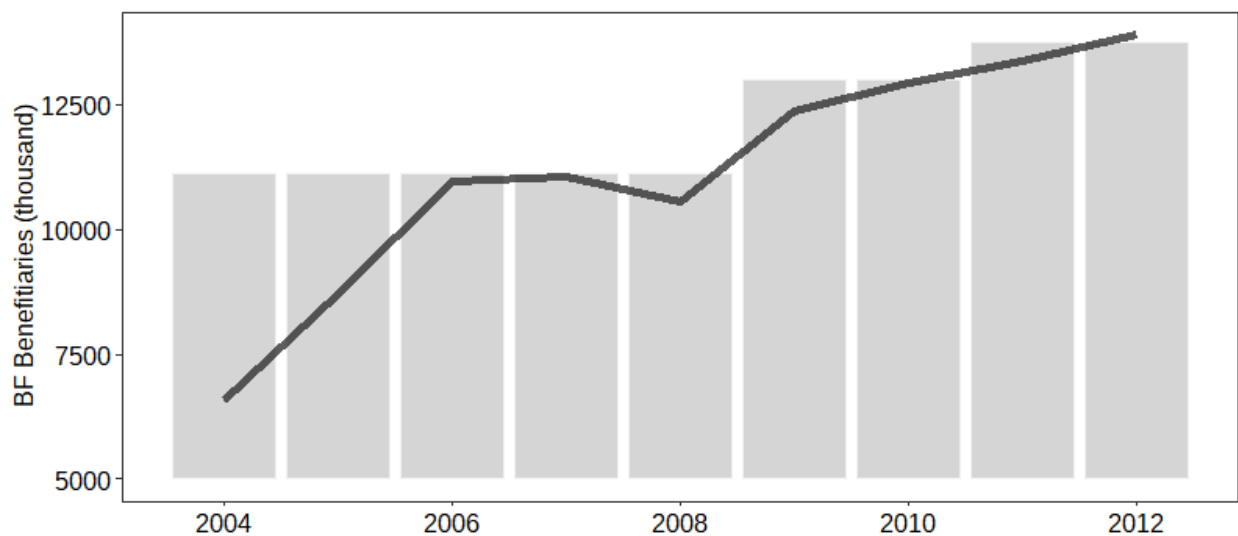
⁶The central government also sets the value of the benefits, and the coverage targets for both municipalities and the program as a whole.

⁷The existence of waitlists is emphasized by this official press release: <http://bit.ly/2Jpk6TF> (in Portuguese). While the global program quota is binding, the municipal coverage targets are not. Even though the federal government is less likely to approve benefits in municipalities with high coverage, many had coverage above 100% of the targeted households in 2006-2012.

and 77% of them thought that they were eligible. However, only 52% of the ones that thought they were eligible ever enrolled in CadUnico (Frey, 2021). The same survey shows that the local bureaucracy played a key role in spreading enrollment information: households that had direct contact with municipal employees were much more likely to have the benefit than the ones that learned about the program from other sources such as media, friends, or neighbors.

This potential for electoral capture is magnified during times of program expansion. Since its inception at the end of 2003, BF had two distinct periods of significant growth (Figure 1).

Figure 1: Expansion of *Bolsa Família* in 2004-2012



The line shows the number of beneficiaries at the end of each year. The bars show the global program quota for the same period.

In 2003-2006, it replaced other government policies such as *Bolsa Escola*, and expanded the coverage from 6 to 11 million benefits - a target that was met in 2006. The program stagnated between 2006 and 2009, and millions of households that had entered CadUnico with eligible income could not access the funds. However, in 2009 the federal government changed the formula used to estimate the number of vulnerable families in the municipalities (Frey, 2021; Gerard, Silva, and Naritomi, 2021), which increased the global coverage target of BF to 13 million households.⁸ Most relevant for our empirical exercise, the impact of this methodological change on the potential program expansion

⁸The global BF target was again increased in 2011 to 13.7 million beneficiaries, as the government updated the estimate of poor families using the 2010 census data.

sion was highly heterogeneous across municipalities.

CadUnico interviewers play a critical role in times of program expansion. From the perspective of voters, they are the *face* of the most prominent poverty alleviation policy in the country. These agents are primarily responsible for the active search of vulnerable households in the municipality, and for their enrollment in the registry. Once in CadUnico, poor households can potentially receive a wide range of social programs, BF included. The main questionnaire covers a wide range of topics such as information on family members, living conditions, ownership of appliances, income, and labor market participation. Interviewers must also collect the tax payer and electoral card numbers of the adults in the household. Furthermore, interviewers are requested to identify themselves as municipal agents, and are strongly encouraged to visit the respondent's residence in order to verify the accuracy of the information. In this position, they have both the reach and the resources to develop strong ties with the community, and to accumulate electoral capital among the poor.

Our data suggests that the average bureaucrat interviewed around 280 households in 2009-2012 at least one time, which represents roughly 10% of the local electorate in the average municipality. For perspective, a 10% shift in the mayoral vote would have changed the outcome of more than 70% of all municipal races in the country. Accordingly, 63% of the interviews in our data happened in the election year (2012), and 29% of them were households that were entering CadUnico for the first time – as opposed to updating their existing profile. What is more, BF's expansion increased the opportunities for targeted program enrollment, as discussed above. Not surprisingly, preceding the 2008 election the federal government published a document with guidelines for CadUnico interviewers (MDS, 2008), aimed to avoid the political use of the enrollment process.⁹

POLITICIZATION OF BUREAUCRATS: A POLICY-DRIVEN LOGIC

Our logic for the engagement of bureaucrats in partisan politics applies primarily to developing contexts where patronage and rent-seeking politics are pervasive, and the linkages between voters and parties are often non-programmatic. It also relies on the fact that bureaucrats are different from the rest of the population in two dimensions. First, given that they provide public goods and services, their job performance reflects on the perception of voters about the incumbent adminis-

⁹For example, the rules prohibit interviewers from wearing clothes with electoral propaganda, or from using the CadUnico information to target campaigns.

tration. Second, their career prospects directly depend on the influence of incumbent politicians.

Accordingly, bureaucrats typically have some discretion over the public service provision to the general population. In that position, they have the potential to become operatives for politicians seeking to capture the electorate (Boas et al., 2021). The literature has documented many forms of political capture in the developing world, such as undeserved credit claiming (Bueno, 2018; Cruz and Schneider, 2017), vote buying (Nichter, 2008), turnout buying (Larreguy, Marshall, and Querubín, 2016), electoral fraud (Ashlea and Svulik, 2016), and selective targeting of beneficiaries for public policies (Frey, 2021); many of which are observed in Brazil (Gingerich, 2014; Hidalgo and Nichter, 2015). Most of these capture strategies are better or exclusively executed with the involvement of the bureaucracy. That said, our framework does not require to precisely establish the mechanism bureaucrats use to turn policies into political support, it just assumes they do.¹⁰

What is more, bureaucrats can benefit incumbent politicians in ways that go beyond the illegal or unethical handling of public resources. The quality of goods and services also impacts the popular assessment of the incumbent administration, more so if voters are retrospective as they are shown to be in Brazil (Feierherd, 2020; Ferraz and Finan, 2011; Klačnja and Titiunik, 2017).

This makes bureaucrats attractive assets for political networks, particularly for incumbent parties. These parties have often an advantage in clientelistic practices carried through public services, and bureaucratic performance directly reflects on their administration. From the perspective of bureaucrats, partisan engagement is attractive because it brings the possibility of accessing patronage rents, a practice that has been widely documented in Brazil (Barbosa and Ferreira, 2021; Brollo, Forquesato, and Gozzi, 2017; Colonnelli, Prem, and Teso, 2020; Toral, 2022a,b). Furthermore, the linkages built with the electorate can serve as a stepping-stone for a political career. By the same argument, bureaucrats are also more likely to benefit from patronage offered by incumbents. Hence, they are also more likely to join parties in the incumbent coalition, more so in an environment where local politics are often non-ideological as in Brazil (Ames and Smith, 2010).

Finally, it is easy to see that this logic better applies to voter-facing bureaucrats that deliver broad and relevant policies – they are the most capable of obtaining electoral capital in their jobs. In the

¹⁰By the same argument, we are agnostic about the precise factors that might drive voters to electorally reward bureaucrats, parties, or politicians that they see as responsible for policies. Besides the quid-pro-quo implied by clientelistic relationships between patrons and voters (Hicken, 2011), the literature has evidence of alternative mechanisms such as norms of reciprocity (Finan and Schechter, 2012), or the voter's expectation that the current policy is a signal that politicians are committed to further redistribution (?).

Brazilian context described before, CadUnico interviewers are the ideal group of bureaucrats to test this argument. Moreover, we expect that these incentives are stronger for interviewers operating in areas with a higher number of potential beneficiaries.

Accordingly, this logic offers the following testable hypotheses:

Incumbency advantage (H1): *Incumbent parties have an advantage over the opposition in politicizing all bureaucrats.*

Policy-based heterogeneity (H2): *This incumbency advantage is stronger for bureaucrats involved in broad, salient, and popular policies. This implies that:*

H2a: *Within a municipality, CadUnico interviewers are more likely than other public servants to join parties in the incumbent coalition.*

H2b: *Within the group of CadUnico interviewers in each municipality, the ones with more exposure to voters are more likely to join the incumbent coalition parties.*

H2c: *Across municipalities, the incumbency advantage is higher in areas where the social policy expansion reaches a larger share of the electorate.*

We highlight that this framework applies to any institutional environment that resembles the Brazilian context in the following dimensions: (i) public policies are highly salient to voters, and local incumbents have ways to capture them for electoral rewards; (ii) the bureaucracy plays a key role in both the extent of political capture and the quality of public policies; and (iii) the engagement in political networks is an attractive option for bureaucrats due to opportunities for rent-extraction and patronage. Finally, both our framework and subsequent empirical analyses do not focus on the problem of selection into and within the bureaucracy, which have been widely studied by the literature. In other words, we take both the employment and the occupation of bureaucrats as given, and solely focus on the bureaucracy's decision to engage in partisan politics.

DATA: BUREAUCRATS, CADUNICO INTERVIEWERS, AND PARTY MEMBERS

The empirical analysis relies on several data sources. First, we observe the universe of bureaucrats formally employed by municipal administrations in Brazil using a matched employer-employee dataset from RAIS (*Relação Anual de Informações Sociais*) for the period 2009-2012. This is

an administrative dataset collected yearly by the Ministry of Labor, and contains individual information on the universe of formal workers in Brazil.¹¹ It includes the employee's name, tax payer number (CPF), gender, age, education, as well as information about the job position such as salary, occupation, and hiring date.

Second, we have obtained from the Ministry of Social Development (MDS) the complete micro-data of CadUnico for December 2012. This data contains individual information on more than 20 million households that are eligible to federal poverty alleviation benefits. Most importantly, it also contains the name and tax payer number (CPF) of the bureaucrat responsible for the most recent interview with the beneficiary, for a subset of 16 million households that had their last interview in 2009-2012.¹² Remarkably, we are able to obtain the number of interviews conducted by each interviewer, which captures their exposure to the electorate. Furthermore, we can look at specific characteristics of interviewed households such as income and date of interview.

Third, the MDS provides data on the municipal coverage, and on the local quotas for both CadUnico enrollment and the number of *Bolsa Família* (BF) benefits.¹³ We can then observe different levels of program expansion across the country in the period of analysis (2009-2012).

Fourth, the Supreme Electoral Court (TSE) provides the membership rolls for all parties, with the names of members and their registration dates. Municipal elections in Brazil are candidate-centered, the linkages between candidates and voters are often personalistic (Boas, Hidalgo, and Melo, 2019), and parties are seen as weak (Klašnja and Titiunik, 2017). Nevertheless, party affiliation in Brazil is among the highest across democracies at 11% of the adult population (2012). This apparent paradox can be explained by the dynamics of party growth in municipalities.

In this decentralized multiparty system, party recruitment is primarily a local affair. What is more, even though party affiliation is ultimately an individual decision, party growth is largely the result of recruitment efforts by local leaderships: voters join parties mostly in response to the demands of local politicians, elites, or brokers for political support (Sells, 2020); rather than to respond to institutionalized programmatic appeals.¹⁴ Accordingly, Figure 2 shows that party recruit-

¹¹The data does not include information on interns, which are also often hired by local administrations.

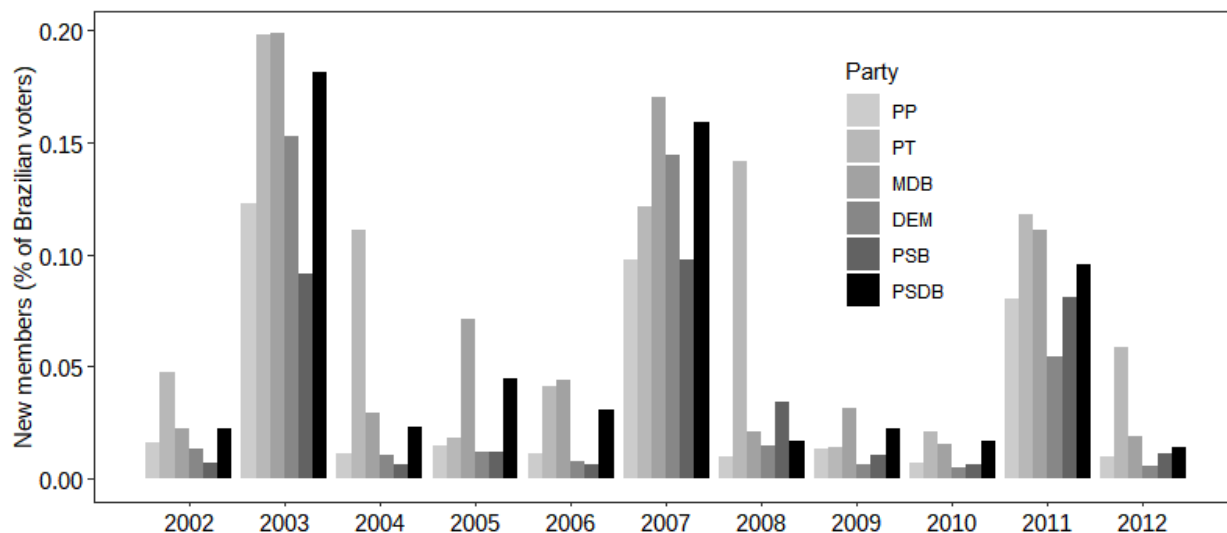
¹²If a beneficiary first enrolled in CadUnico in 2007 but updated her income in 2011, for example, our data only contains the interviewer name for this last visit.

¹³CadUnico coverage targets are always higher than BF's ones, as the registry is used for management of several other federal benefits.

¹⁴The Worker's Party (PT) provides the closest thing to an exception to this pattern. Throughout this period is the most institutionalized and programmatic party in the country, with relative high levels of intra-party discipline (Samuels

ment in Brazil is almost entirely done in the years before mayoral elections (e.g. 2003, 2007, 2011).

Figure 2: Growth of Party Membership in Brazil



The bars show the percentage of Brazilian voters that joined each party, each year. Municipal elections years are 2004, 2008, and 2012.

While party elites rely on large memberships to influence the conventions that determine both the coalition and candidate choices in mayoral races (Speck, Braga, and Costa, 2015), potential recruits expect to benefit from the spoils of office once their patrons are elected (Brollo, Ferrara, and Kaufmann, 2017). In this context, party affiliation among public servants is a good proxy for the political engagement of the bureaucracy.

Finally, TSE also provides detailed data on municipal elections. In addition to results, this includes characteristics of candidates such as gender, age, and education. Brazilian municipal elections happen simultaneously in all locations every four years. We focus on the 2008 and 2012 election cycles, given that the 2009-2012 mayoral tenure was a period of significant expansion in BF, and it is the period for which our CadUnico data is available. Combined with the previously described data sources, the TSE data allows us to identify the bureaucrats that ran for public office in 2012, which is another proxy for political engagement.

and Zucco Jr., 2014; Sells, 2020).

THE COMBINED DATASET

We merge these datasets in three stages. First, we use the CPF to combine the CadUnico interviewers with the RAIS data. This allows us to determine how many of the CadUnico interviewers worked in a formal position with the local administration, and to obtain their demographic and employment data.¹⁵ Second, we merge the data on individual bureaucrats (CadUnico interviewers and RAIS) with the party membership rolls, by name.¹⁶ Third, we merge both the CadUnico and RAIS data with the list of candidates in 2012, again by CPF.

The merged data includes 55,169 unique CadUnico interviewers, which conducted interviews with 16 million households in 2009-2012, across 5,174 municipalities.¹⁷ We found 55% of these interviewers in the RAIS data as formal employees of local administrations during 2009-2012. This is not surprising, given that many municipalities – namely state capitals – used interns to conduct CadUnico enrollment.¹⁸ From RAIS data, we have information on 6.8 million local bureaucrats.

Table 1 summarizes the broad patterns of party affiliation in this data. Overall, 22% of all CadUnico interviewers and 23% of the other bureaucrats were members of a political party at some point. This rate of partisanship is significantly higher than the one among the rest of the population (11% in 2012). Also, 2% of all bureaucrats – interviewers or otherwise – ran for local council seats in 2012.¹⁹

Among the partisan interviewers, 26% of them joined a party for the first time in 2009-2012 (74% were party members before), which is much higher than the 16% share of new partisans among other bureaucrats. We emphasize that most of these council positions in small municipalities are part-time, relatively well-paying jobs, which can be attractive to public servants that are able to cultivate political capital among the electorate.

¹⁵Roughly 75% of our CadUnico interviewers appear in the RAIS survey at least once in 2009-2012. The remaining 25% did not have any formal employment anywhere in the period, or could not be matched because they failed to type their CPF correctly in the CadUnico database. Out of the matched 75%, three-quarters had employment in the public administration in 2009-2012.

¹⁶In Appendix A we provide further details on the process of merging these datasets by name.

¹⁷This represents 93% of all municipalities in the country. This list includes only municipalities that had (i) at least two candidates in the 2008 election; (ii) a 2008 election that was not invalidated by the electoral courts (2% of the total elections were invalidated by TSE); and (iii) data on at least one CadUnico interviewer.

¹⁸Interns were used to cope with an excess demand for enrollment by the poor population, and a shortage of public servants. See press reports about the issue on <https://bit.ly/3pdiOxs> and <https://bit.ly/3I7XT03>.

¹⁹Given that interviewers are matched to council candidates by their CPF, we limit our analysis of candidacy to the 75% of interviewers for whom we could verify the correctness of the CPF number in the CadUnico database using the CadUnico-RAIS correspondence on CPF and name. This is not possible for the remaining 25% not found at RAIS.

Table 1: Party Enrollment in 2009-2012: Interviewers, Other Bureaucrats, and Voters

	INTERVIEWERS		OTHER BUREAUCRACY		POPULATION	
	Total (000s)	pct (%)	Total (000s)	pct (%)	Total (000s)	pct (%)
Old Partisans	7.8	14.1	1201.2	17.7	12134.6	9.5
Switchers	1.0	1.8	131.7	1.9	347.9	0.3
New Partisans	3.2	5.7	249.5	3.7	1742.0	1.4
Non-Partisans	43.2	78.3	5215.6	76.7	113074.2	88.8

Data from 2012. The column *Total* shows the number of thousand individuals in each category. The column *pct* shows the percentage share. *Old Partisans* are the ones that were party members in 2008, and remained in the same party in 2009-2012. *Switchers* are 2008 members that moved parties in 2009-2012. *New Partisans* are the ones that joined a party for the first time in 2009-2012. *Non-partisans* were never party members on or before 2012.

EMPIRICAL STRATEGY

In our empirical application we measure the politicization of the local bureaucracy in Brazil in two ways. Our main outcome is labeled *Membership*: for the top 2 coalitions in the 2008 election, we calculate the percentage of CadUnico interviewers that joined a coalition party during the 2009-2012 mayoral tenure. In a similar way, we also calculate this measure for (i) other bureaucrats (non-interviewers); and (ii) the voting population in general, both as a share of total individuals in each group. We also report the results for an alternative definition, in which *Membership* is measured with respect to the top 2 parties only, instead of coalitions.

The second relevant outcome is *Candidacy*, which measures the percentage of all interviewers that ran as council candidates in the subsequent 2012 election. Again, this is calculated for each of the parties in both the winner and loser coalitions in 2008, and also for other bureaucrats and the rest of the voting population.

In order to directly map our data to H1 (page 10), we identify the incumbency advantage in the politicization of the bureaucracy using a regression discontinuity design (RDD) in close mayoral elections. Within the same municipality, we compare the changes in *Membership* and *Candidacy* for the pre-electoral coalition that won the previous (2008) mayoral election – and became the in-

cumbent administration – to the changes for the coalition that lost. This empirical design provides a quasi-random assignment of the coalition in power in 2009-12. What is more, given that the identification relies on the within-municipality comparison between winner and loser, the estimates are not biased by municipal characteristics that could potentially influence local party dynamics. Thus, for municipality i , coalition c , and outcome y_{ic} , we estimate:

$$y_{ic} = \beta_0 + \beta_1 t_{ic} + \beta_2 r_{ic} + \beta_3 t_{ic} r_{ic} + \epsilon_{ic} \quad (1)$$

where the treatment t_{ic} assumes one for the coalition that won the election, and zero otherwise. The RD treatment effect is given by β_1 . The running variable r_{ic} is the difference in the vote percentage of the winning and losing mayoral candidates in the municipality, and assumes negative values for the control group (loser coalitions). As usual in RD designs, observations are weighted by the triangular kernel, and the treatment effects are estimated using only the sample that falls within an optimal bandwidth on the margin of victory, calculated based on [Calonico, Cattaneo, and Titiunik \(2014\)](#). We also show balance of pre-election covariates that measure characteristics of both parties and mayoral candidates in [Table B.2](#) (appendix).²⁰

RESULTS

The first three columns of [Table 2](#) show the incumbency effect on the *Membership* variable, the last three on *Candidacy*. [Figure 3](#) has the graphical illustration of the effects.

²⁰All variation here is within-municipality, i.e., every municipality has one treatment and one control observation.

Table 2: RD Effects on Membership and Candidacy

	MEMBERSHIP			CANDIDACY		
	CadUnico Interviewers (A1)	Other Bureaucracy (A2)	Voting Population (A3)	CadUnico Interviewers (B1)	Other Bureaucracy (B2)	Voting Population (B3)
Incumbency effect	3.837* (0.699)	1.424* (0.138)	0.006 (0.056)	0.913* (0.451)	0.527* (0.040)	-0.033* (0.008)
Baseline level	1.616	1.387	0.866	0.811	0.796	0.233
Effect/baseline (%)	237	103	1	113	66	-14
Bandwidth	9.37	7.69	9.38	10.57	13.10	9.72
Municipalities	2239	1911	2240	2462	2881	2282

†p<0.1, *p<0.05. Standard errors (parenthesis) are clustered by municipality. There are always two observations for each municipality: the outcomes for treatment and control. The Membership variable is the percentage of new partisans in 2009-2012 among CadUnico interviewers (A1), other bureaucrats (A2); and the voting population (A3). The Candidacy variable (B1-B3) is the percentage of 2012 council candidates among these three groups. The baseline level is the average value of each outcome for the losing coalition, at the discontinuity. The incumbency effect is the difference on the outcome between the winning and losing coalitions, at the discontinuity.

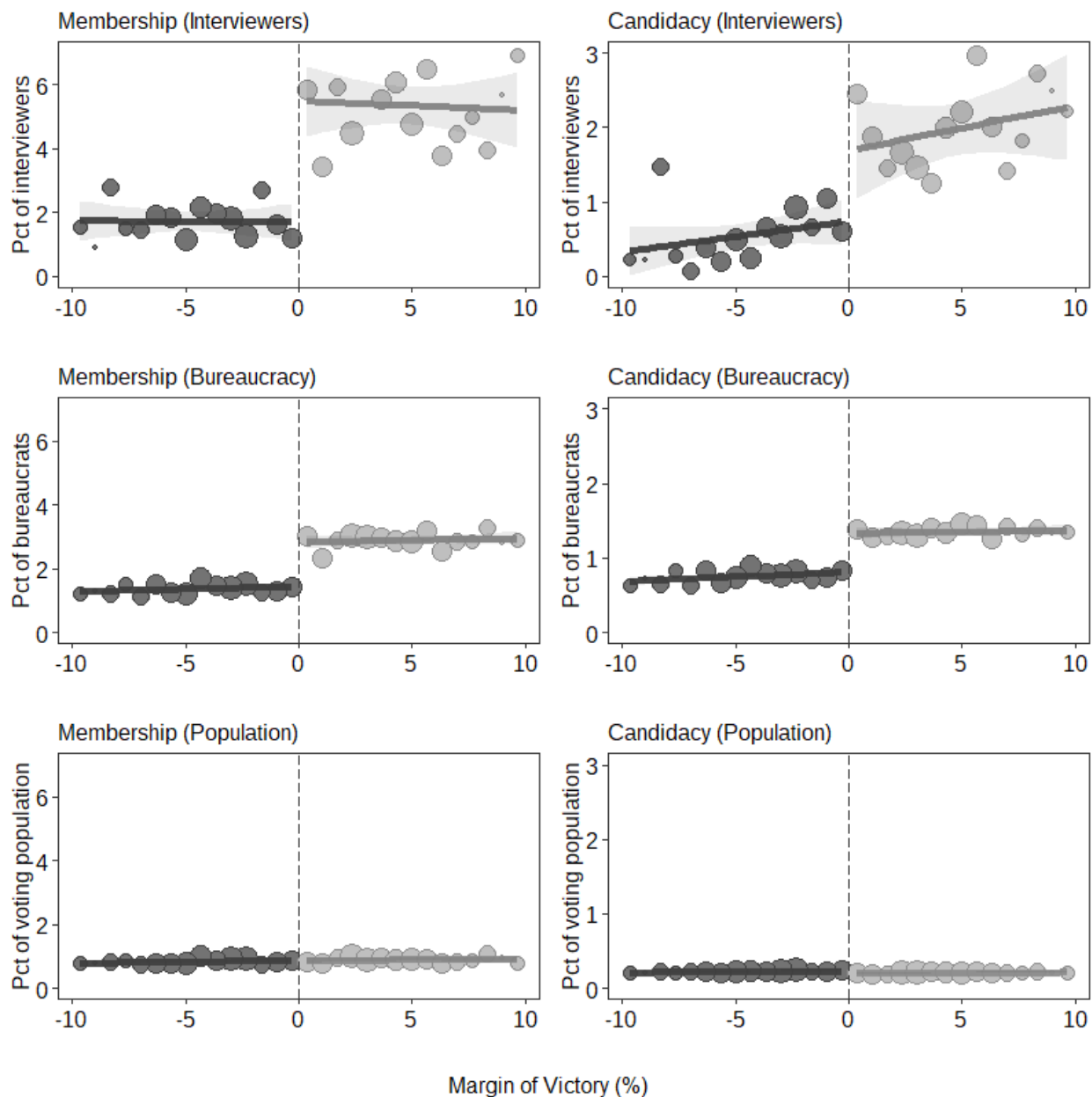
The estimates are highly consistent with an incumbency advantage in the politicization of bureaucrats proposed in H1. The results show that the incumbent’s coalition (i) enlists more municipal bureaucrats – interviewers or not – for its parties than the opposition in 2009-2012; and (ii) fields more candidates coming from the bureaucracy in the subsequent local council elections (2012).

The magnitude of the effects is meaningful. While opposition parties enlist on average 1.4% of the bureaucracy, an additional 1.4% becomes affiliated with a party in the winning coalition. These effects are substantially magnified among the CadUnico interviewers (consistent with H2a). The winning coalition is able to enlist additional 3.8% of the interviewers on top of what the losing coalition does, which represents 237% more affiliations.

The *Candidacy* results also stand out, especially given that very few voters – and even bureaucrats – ever run for public office. Incumbent parties are able to field an additional 0.5% of the municipal bureaucracy as local council candidates, on top of the share of bureaucrats listed as candidates by the opposition (0.8%) – a 66% effect. In the case of CadUnico interviewers, the share of candidates

listed by the incumbent parties is 0.9p.p. higher – a 113% effect.

Figure 3: RD Effects on Membership and Candidacy



The darker gray shows the control group (opposition), and the lighter gray shows the treatment group (incumbent). The margin of victory (x-axis) comes from the 2008 mayoral election. The lines are the linear fit for the corresponding group, and the dots represent the average outcome for observations that fall within each one of the 15 bins, based on the value of the running variable. The size of the dots represent the number of observations in each bin.

We emphasize that this pattern is exclusive to the bureaucracy. We find no incumbency effect on *Membership* among the rest of the voting population (A3), and even a small negative effect on *Candidacy*. The latter suggests that incumbent parties, to some degree, substitute non-bureaucrats for bureaucrats in their pool of council candidates. In the appendix, we show the robustness of these estimates to different polynomials and bandwidths (Table B.3), the inclusion of pre-treatment covariates (Table B.4), and the alternative specification that considers the mayoral candidate's party only (Table B.3).²¹

POLICY-BASED HETEROGENEITY I: WITHIN MUNICIPALITIES

In line with H2a, the incumbency effects shown in Table 2 are stronger among CadUnico interviewers when compared to the rest of the bureaucracy. This is consistent with the fact that interviewers are much more likely to have personal contact with voters than the average bureaucrat; and also have some discretion to control the voters' access to a very salient policy benefit.

Nevertheless, one might be concerned that this effect heterogeneity might be driven by the characteristics of the bureaucrats that are allocated to each position (e.g. interviewers or not), as opposed to their engagement with redistributive policies. In the appendix (Table B.1),²² we show that the profile of CadUnico interviewers indeed differs from the average bureaucrat's in many observable characteristics. For example, interviewers are more likely to be younger, female, and recently hired than other public servants. If these traits are also predictive of some incumbency preference in political engagement, they could be the reason behind the effect heterogeneity in 2009-2012.

In the sequence we show three empirical exercises that alleviate this concern, and strongly suggest that it is indeed the bureaucrats' role in the enrollment of voters into redistribute policies that creates incentives for their political engagement.

Matching bureaucrats and interviewers. Here we estimate the effects on *Membership* and *Candidacy* for a subsample of the *other bureaucracy*, one that is comparable to the group of CadUnico interviewers in many observable characteristics. For that, we find matches for each interviewer

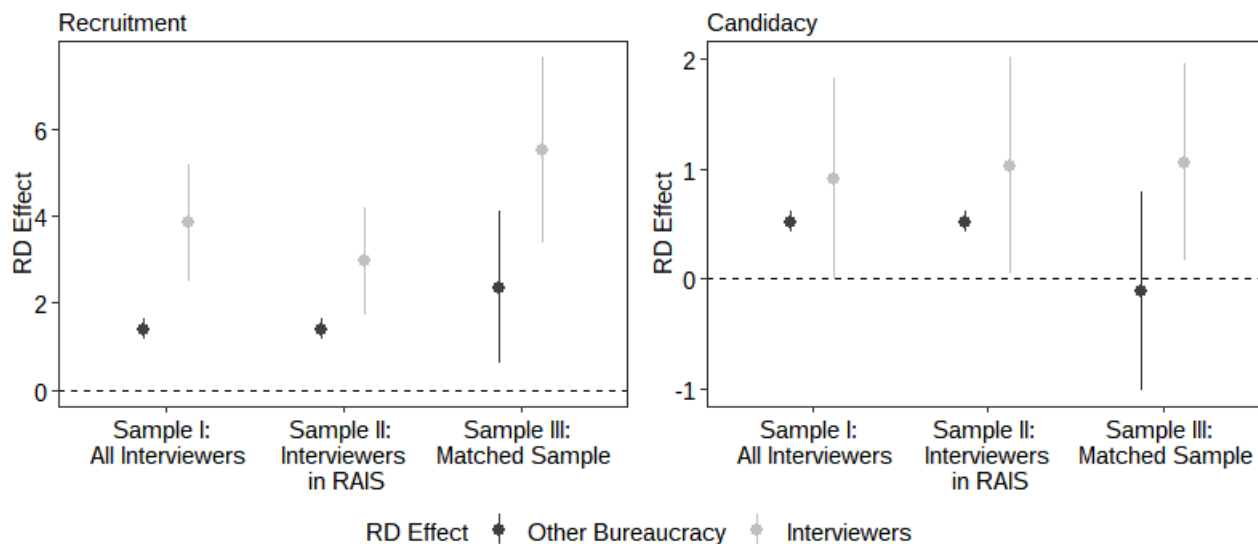
²¹In summary, while the *Membership* results are statistically significant under all specifications, the *Candidacy* estimates lose power under shorter bandwidths or larger polynomials, even though the effect magnitude remains stable across the board.

²²In this Table we only include the 30,517 interviewers that are also found in the RAIS data, and for which we have demographic and employment information. As previously mentioned, roughly 45% of our interviewer sample is composed by workers that were not formally employed by the municipality, most likely interns. We emphasize that our incumbency advantage estimates remain robust to the exclusion of this group from the sample, as shown in Figure 4.

within the same municipality among the remaining bureaucrats on the basis of job description, gender, previous partisanship, age, wages, education, and the time of hiring.²³ We find a one-to-one match for 76% of the 30,537 interviewers for which we have RAIS data. Table B.7 (Appendix) shows the balance pre and post-matching for the two groups.

Figure 4 presents the results. The coefficients correspond to the incumbency advantage effect in *Membership* and *Candidacy* for two groups: interviewers and the rest of the bureaucracy. Every plot has three different comparisons: (i) **Sample I**. All other bureaucrats vs. all interviewers (55,169); (ii) **Sample II**. All other bureaucrats vs. only interviewers with RAIS data (30,517); and (iii) **Sample III**. The matched sample described above (23,128 individuals in each group).

Figure 4: Membership and Candidacy: CadUnico interviewers vs. other bureaucrats



95% confidence intervals. Samples are defined as follows: (i) all interviewers vs. all other bureaucrats (sample I); (ii) only interviewers with RAIS data vs. all other bureaucrats (sample II); and (iii) the matched sample (sample III). The RD effects are the difference in the outcome between the winning and losing coalitions, for *Interviewers* and *Other Bureaucrats*.

The plots show that treatment effects are consistently higher for the group of interviewers, for both variables. What is more, the results for the matched sample are slightly higher in magni-

²³Precisely, for every interviewer we search for an one-to-one exact match among other bureaucrats based on gender, previous partisanship (i.e. whether or not the bureaucrat already belonged to a party in the mayor’s coalition in 2008), education (a dummy that indicates whether the bureaucrat has a bachelor’s degree), hiring time (current vs. previous administration), and the occupation code recorded in the RAIS survey. We only look for matches of bureaucrats with maximum gaps of four years for age, and R\$1000 (~USD 250) for monthly wages. If more than one match is found, we pick the bureaucrat with closest wage, and closest age, in this order.

tude and in statistical power than the other specifications (Table B.6 in the Appendix shows the corresponding estimates). This supports our view that it is not the observable characteristics of interviewers that drive their higher political engagement, but the type of policy that they deliver.

POLICY-BASED HETEROGENEITY II: WITHIN INTERVIEWERS

We also examine the relationship between incumbency effects and the number of interviews conducted by each bureaucrat using the data described in page 11. We use the records of interviews conducted by each public employee to split the sample into interviewers with high- and low-exposure to voters.²⁴ The average interviewer in our data had a substantial exposure to voters in 2009-2012, interviewing around 280 households at least one time during the period. This represents roughly 10% of the local electorate in the average municipality. For perspective, a 10% shift in the mayoral vote would have changed the outcome of more than 70% of all municipal races in Brazil. Accordingly, the average number of recorded interviews in our sample for the high-exposure group was 486, which is roughly 10x the average of 49 for the low-exposure group.

In Table 3 we compare the incumbency advantage in both *Membership* and *Candidacy* among these two groups. The first specification splits the bureaucrats based on all interviews in CadUnico. Here we already see that the magnitude of the incumbency advantage is higher for interviewers that were more exposed to voters: 146% higher in *Membership* and 242% higher in *Candidacy*, even though the estimated difference between the coefficients has low statistical power.

²⁴Precisely, the low-exposure group is composed by interviewers that conducted less interviews than the median value for each municipality in 2009-2012. The remaining are categorized as high-exposure.

Table 3: Membership and Candidacy: Effects by the Number of Interviews

Interviews:	MEMBERSHIP			CANDIDACY		
	High (A1)	Low (A2)	High-Low (A3)	High (B1)	Low (B2)	High-Low (B3)
Considers all interviews						
Incumbency effect	4.237* (0.826)	2.905* (0.789)	1.332 (1.080)	0.568 (0.466)	0.235 (0.547)	0.333 (0.713)
Bandwidth	11.33	11.33	11.33	11.32	11.32	11.32
Municipalities	2432	2432	2432	2154	2154	2154
Avg Interviews	486	49	437	507	52	456
Considers interviews of households eligible to Bolsa Família only (income \leq R\$140/month)						
Incumbency effect	4.482* (0.850)	2.642* (0.761)	1.840† (1.078)	0.509 (0.497)	0.216 (0.578)	0.293 (0.756)
Bandwidth	11.16	11.16	11.16	10.01	10.01	10.01
Municipalities	2401	2401	2401	1973	1973	1973
Avg Interviews	365	36	330	375	37	338

† $p < 0.1$, * $p < 0.05$. Standard errors (parenthesis) are clustered by municipality. There are four observations for each municipality to reflect the outcomes of treatment and control for each group (High or Low). The *Membership* and *Candidacy* variables, and the definition of interviewers with high- and low-exposure to voters, are explained in the text. The RD effect shows the difference on the outcome between the winning and losing coalitions. All coefficients are estimated using a single regression where a dummy that indicates the outcome for the low exposure group is interacted with t_{ic} , r_{ic} , and $t_{ic}r_{ic}$ from equation 1.

The second specification focuses only on interviews of households that declared a particularly low income level (below R\$140/month), one that would make them eligible to BF benefits – these interviews represent 75% of the total in our sample. Given that BF is by far the most salient benefit among all policies that poor voters have access through CadUnico, this particular subset of interviews most likely reflect the potential for electoral capture of these bureaucrats. Even though the results for *Candidacy* remain similar, the difference between the incumbency effects in *Membership* for the the high- and low-exposure groups is higher at 170%, and the difference between the coefficients is now significant at the 90% confidence level.

POLICY-BASED HETEROGENEITY III: ACROSS MUNICIPALITIES

We now examine the heterogeneity of the results based on the potential for the expansion in CadUnico registration during the 2009-2012 mayoral tenure across municipalities. The intuition here is straightforward: the higher the potential for interactions between bureaucrats and voters, the higher their incentives for formal political engagement as party workers or candidates.

This exercise benefits from a unilateral, and arguably exogenous, change on the estimate of the number of CadUnico-eligible families in each municipality, done by the federal government in 2009 (Frey, 2021; Gerard, Silva, and Naritomi, 2021). This change was a result of an adjustment in the methodology used to estimate the number of poor families in municipalities, and not by changes in the local population. In other words, it was not affected by potential post-treatment changes in population.²⁵ This estimate of vulnerable families also serves as a formal enrollment target for local administrations, and directly affects their ability to raise resources from the federal government to run CadUnico enrollment locally.²⁶ Thus, for each municipality we calculate the *Potential Enrollment* variable as follows: the difference between the new CadUnico target and the actual enrollment at the end of 2008 (pre-election), as a percentage of the population. This variable is a proxy for the additional number of households that need to be interviewed by local bureaucrats in the 2009-2012 tenure.²⁷ The distribution of this measure is shown in Figure B.1 (appendix). The average increase in potential enrollment is 2.1% of local households, but the values range from -73% to +45%.

We use these variable to estimate heterogeneous treatment effects in the following equation:

$$y_{ic} = \gamma_0 + \gamma_1 t_{ic} + \gamma_2 r_{ic} + \gamma_3 t_{ic} r_{ic} + \left[\gamma_4 + \gamma_5 t_{ic} + \gamma_6 r_{ic} + \gamma_7 t_{ic} r_{ic} \right] p_i + \mu_{ic} \quad (2)$$

where p_i is the potential enrollment for municipality i . Here, the treatment effect depends on p_i , and it is given by $\gamma_1 + \gamma_5 p_i$.

The heterogeneity patterns in the incumbency advantage for both *Membership* and *Candidacy* are shown in Figure 5. Overall, both plots indicate that political engagement increases with poten-

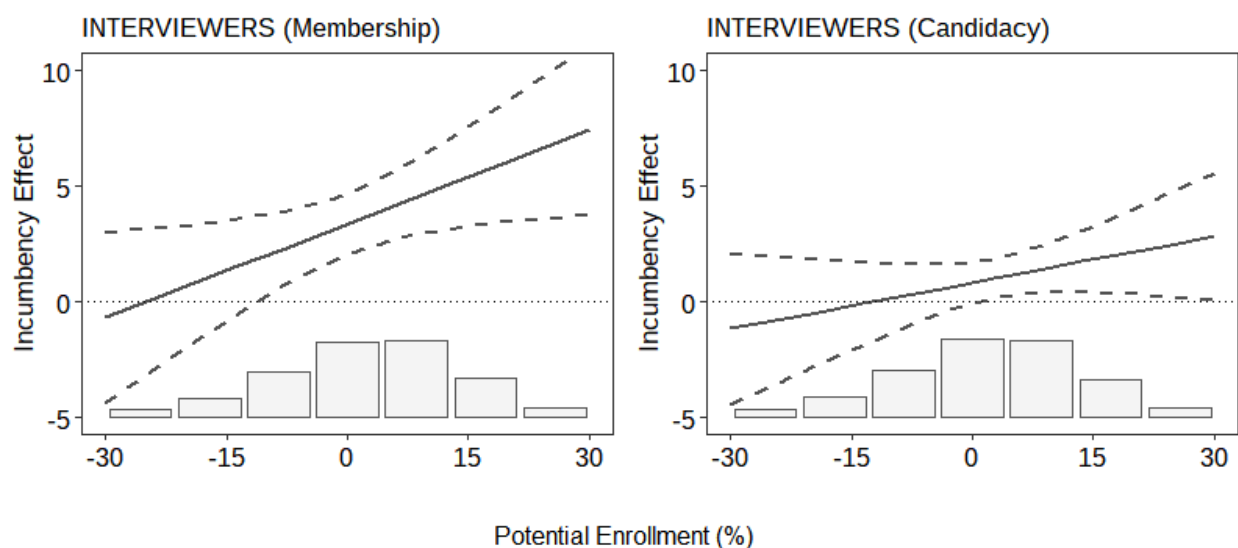
²⁵The new 2009 target was based on the same 2006 PNAD survey used to produce the previous target.

²⁶The central government created in 2006 the IGD (index of decentralized management) to determine the distribution of earmarked resources for the administration of CadUnico across municipalities. IGD's formula punished administrations with less than 100% coverage in their enrollment targets.

²⁷This measure is not affected by treatment, i.e., the result of the 2008 mayoral election. The 2008 coverage is measured before the start of the new mayoral tenure. As previously mentioned, the 2009 CadUnico target is based on poverty rates from the 2006 National Household Sample Survey (PNAD), and on a methodological change that was not influenced by local politicians.

tial CadUnico enrollment in the municipality: an increase of one-standard deviation in the potential enrollment (13pp) generates an increase of 32% in the *Membership* effect, and 68% in the *Candidacy* effect. Table B.5 (appendix) has the corresponding estimates, and also shows that this heterogeneity patterns is exclusive to CadUnico interviewers, as it is not observed for either the rest of the bureaucracy or the voting population, as expected.

Figure 5: Marginal RD effects for *Membership* and *Candidacy* of Interviewers



The line shows the marginal RD effect on the outcome variables, the confidence level is 95% for the intervals. The bars in the bottom represent the share of the sample that falls along the values of Potential Enrollment. For the purpose of presentation, we exclude the extreme 1% values on each end of the x-axis variable. The results are robust to this exclusion.

THE ROLE OF THE LOCAL ADMINISTRATION'S LINK WITH THE FEDERAL GOVERNMENT

Beneficiaries of public policies might be unable to accurately attribute the credit for receiving them – even in the case of highly salient policies – when multiple levels of government are responsible for the implementation. This is indeed the case of *Bolsa Familia* (BF) and other decentralized public services in Brazil. As mentioned in page 6, voters are more likely to identify the BF brand with the federal administration of the Worker's Party (PT, 2003-2016), which created the program in 2003, and expanded it in 2009. One would expect that, in areas where municipal governments can establish credible ties with PT's central administration, local bureaucrats are more likely to capture electoral rewards from enrolling beneficiaries in CadUnico. If that is the case, the incumbency

advantage effects should also be stronger in these locations.

We examine this hypothesis by splitting the sample into two groups of municipalities: one where the incumbent mayor belongs to PT (PT-linked sample), and one where it does not. We then compare the treatment effects for these two subsamples, and later repeat the exercise using an alternative definition of PT-linked incumbents that counts all mayors whose coalition includes PT. Table 4 shows the results.

Table 4: Membership and Candidacy: PT in the local administration

Incumbent status:	MEMBERSHIP			CANDIDACY		
	PT-linked (A1)	Non-PT (A2)	Difference (A3)	PT-linked (B1)	Non-PT (B2)	Difference (B3)
PT-linked sample: All municipalities that elected a PT mayor in 2008						
Incumbency effect	10.286* (3.329)	3.031* (0.661)	7.255* (3.394)	4.508* (2.029)	0.468 (0.437)	4.040† (2.075)
Bandwidth	9.37	9.37	9.37	10.57	10.57	10.57
Observations	452	4026	4478	482	4442	4924
PT-linked sample: All municipalities where PT was part of the winning coalition in 2008						
Incumbency effect	6.571* (1.355)	2.333* (0.773)	4.238* (1.560)	1.877* (0.803)	0.388 (0.542)	1.489 (0.968)
Bandwidth	9.37	9.37	9.37	10.57	10.57	10.57
Observations	1684	2794	4478	1828	3096	4924

†p<0.1, *p<0.05. Standard errors (parenthesis) are clustered by municipality. *Membership* and *Candidacy* are explained in the text. The RD effect shows the difference in the outcome between the winning and losing coalitions. All coefficients are estimated using a single regression where a dummy, that indicates whether the winning coalition is linked to PT, is interacted with t_{ic} , r_{ic} , and $t_{ic}r_{ic}$ from equation 1.

The first group of coefficients (A1 and B1) shows the effects for the group of municipalities where the winning mayor has a strong association with PT’s federal administration. The second group (A2 and B2) shows the effects for the opposite group, and the final columns show the difference. We first note that even for the Non-PT sample we observe a substantial incumbency effect of 3p.p. on the membership of interviewers. This suggests that our results are not driven by a single party. Second, consistent with our argument above, the incumbency advantage in both *Membership* and

Candidacy is higher in municipalities that elected PT-linked mayors.

NEW VS. OLD PARTISANS IN VOTER-FACING POSITIONS

We have shown that voter-facing bureaucrats that engage in the delivery of salient redistributive policies are more likely to join the political networks of local incumbents, either as party workers or candidates. We argue that this allows both the incumbent party and the bureaucrats to benefit from the political capital accumulated with voters in the policy delivery process.

In doing so, we do not tackle the alternative questions of how bureaucrats are allocated across tasks in the public sector, and why some of them were engaged in CadUnico enrollment while others were not. That said, incumbents have often a significant control over which workers are placed in policy delivery positions. As such, the appointment of known political loyalists to policy jobs would be more likely to maximize potential capture. On the other hand, the appointment of non-partisans is attractive when either they can be incorporated to grow the party's network or if they are likely to perform better on the job.

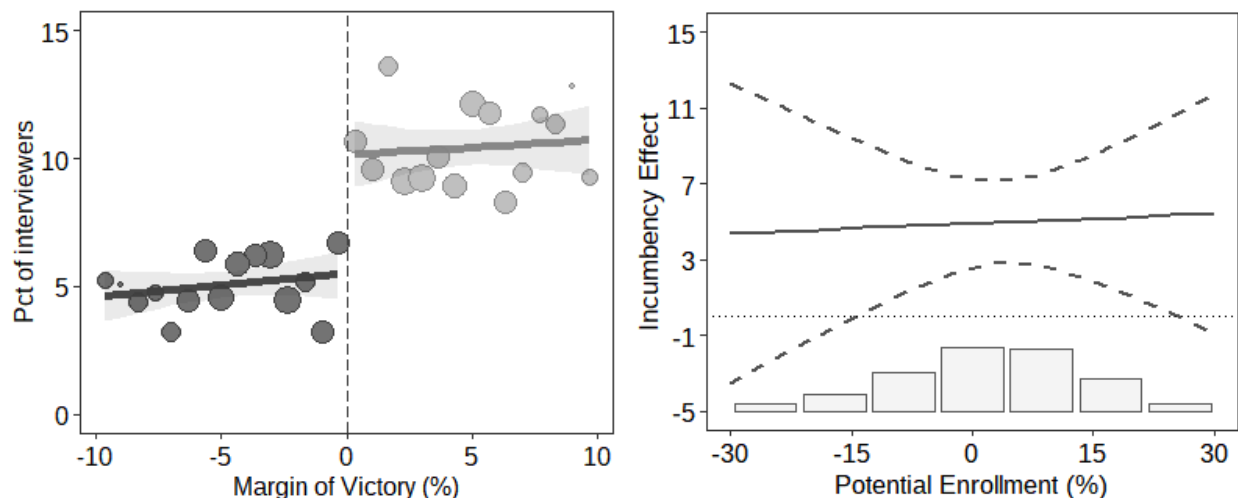
It is beyond the scope of this article – and beyond the capabilities of the present empirical strategy – to precisely examine the conditions that determine the optimal choice for incumbents that face this trade-off. Nevertheless, we discuss two additional empirical exercises that provide some insight on the problem, as well as some guidance for future research on the topic.

Politicization and Patronage co-exist. We also observe an incumbency effect on the allocation of loyalists to the position of CadUnico interviewer. The variable *Patronage* measures the percentage of interviewers in 2009-2012 that were “old” partisans (i.e. members before 2008) of the winning and losing coalitions in 2008. The RD effect for *Patronage* is illustrated in the left plot of Figure 6: while 5.4% of interviewers are copartisans of the losing coalition (baseline), the share of interviewers that were members of incumbent parties is 4.7p.p. higher (an 87% treatment effect).

Patronage is uncorrelated with CadUnico expansion. The right-side of Figure 6 shows that the *Patronage* effect on the allocation of CadUnico interviewers does not vary with the municipality's potential enrollment – a stark contrast to the pattern found for the *Membership* effects (Figure 5). We suggest two potential explanations for this. First, the patronage here might be primarily aimed at rewarding loyalists for political services that are unrelated to their “formal” jobs in the administra-

tion. For example, they might get the appointment as a reward for their effort in the 2008 campaign – which is consistent with recent evidence from Brazil (Colonnelli, Prem, and Teso, 2020). If that is the case, patronage should be uncorrelated with the potential for enrollment.

Figure 6: Patronage in the Appointment of CadUnico Interviewers



Left-side plot: The darker gray shows the control group (opposition), the lighter gray shows the treatment group (incumbent). The margin of victory (x-axis) comes from the 2008 mayoral election. The lines are the linear fit for each group, and the dots represent the average outcome for observations that fall within each one of the 15 bins, based on the value of the running variable. The dots reflect the number of observations in each bin.

Right-side plot: The line shows the marginal RD effect on the outcome variables, the confidence level is 95% for the intervals. The bars in the bottom represent the share of the sample that falls along the values of Potential Enrollment. For the purpose of presentation, we exclude the extreme 1% values on each end of the x-axis variable. The results estimated for this reduced sample remain robust.

Second, while loyalists are expected to maximize political capture of policies, they might underperform non-partisans. In this case, if the performance of the administration in the specific policy is pivotal enough, incumbents might sacrifice loyalty in favor of service quality. As a consequence, incumbents might be relatively more likely to assign high performing bureaucrats than old partisans to (politically) relevant positions. There is vast burgeoning literature on the consequences of patronage appointments to the quality of public services, with evidence for both sides of the de-

bate.²⁸ Interestingly, the summary statistics in Table B.1 (page 5) show that new partisans – those recruited in 2009-12 – conduct 47% more interviews than interviewers that were already partisans in 2008. Although we are reticent to attribute this difference to an ability gap,²⁹ this further suggests that the political ties of bureaucrats might have relevant implications for policy outcomes, and provides added motivation for future research.

CONCLUSION

With data from Brazilian municipalities, this article precisely identifies an incumbency advantage in the politicization of bureaucrats, particularly the ones tasked with the delivery of salient redistributive policies to voters. We interpret these findings within a logic where policy-driven interactions with voters allow bureaucrats to accumulate electoral capital. This makes them attractive assets to political networks, which in turn offer patronage in exchange for the bureaucrats' loyalty. To the extent that voters are more likely to associate these policies with the local administration, this mechanism is stronger for incumbent parties. The magnitude of the effects are substantial and reveals an additional form of incumbency influence on the bureaucracy beyond the usually documented patronage and oversight.

This article also suggests a few avenues for future research. First, while it isolates one mechanism that drives the political engagement of bureaucrats in the developing world, it is not all encompassing. We still know very little about how other factors, such as ability, might influence the bureaucracy's decision to join partisan networks in developing contexts.

In the same vein, there is a burgeoning literature that concerns itself with the profile of politicians, and the incentives that lead to this career choice (Carnes and Lupu, 2015; Dal Bo et al.; Dal Bó and Finan, 2018; Gulzar, 2021). In line with Boas et al. (2021); Cruz, Labonne, and Querubin (2017), our findings emphasize that future research would do well to explore other ways in which aspiring candidates use their stock of social capital to leverage political careers.

Finally, what are the welfare consequences of the mechanism uncovered here? When bureaucrats join incumbent political networks, their career prospects become closely tied to the electoral

²⁸Consider a few recent studies in Brazil: Colonnelli, Prem, and Teso (2020); Akhtari, Trucco, and Moreira (2021) show that patronage deteriorates the quality of public services, while Toral (2022a) shows that this is not necessarily the case.

²⁹We acknowledge that the allocation of jobs and tasks within the bureaucracy is not random but might follow from partisan status.

future of these parties. On the one hand, this might create incentives for better performance in policy delivery, which has the potential to be welfare enhancing. On the other, this might further increase the incumbents' ability to control the electorate through capture with practices such as clientelism, which are typically seen as welfare reducing (Stokes et al., 2013). The net effect is likely a function of the democratic institutions in place in each context, and the set of incentives faced by both incumbents and voters. Although in this article we are not able to empirically adjudicate between these two contrasting forces, we believe that the topic warrants further investigation.

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The Politicization of Bureaucrats:
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Appendix for Online Publication

A MERGING DATA BY NAME

The CadUnico and the RAIS datasets with interviewers and other bureaucrats are matched to the party membership rolls by both the municipality and full name of each individual. For that purpose, we ensure that each individual bureaucrat only appears in the data once, given that one cannot be a party member or a candidate in two municipalities at the same time.

That said, some CadUnico interviewers conducted interviews in more than one municipality during 2009-2012.¹ Thus, we only keep each interviewer in the sample in the specific municipality where she was formally employed by the public administration in 2009-2012. If the interviewer was employed by more than one city, or not formally employed during the period, we keep the person in the municipality where she did the most interviews. In the case of other bureaucrats that were employed by more than one municipality in 2009-2012, we consider the municipality that was their most recent place of employment.

We also exclude all repeated full names within the same municipality from all datasets, in order to avoid double matches. This represents only 1.4% of all party members, 1.8% of interviewers, and 0.5% of all other bureaucrats, which is not surprising. Full names in Brazil often include multiple surnames, and are composed by 3.2 different terms on average (statistic based on the unique full names of 12 million party members). Thus, even though our matching process might fail to account for the partisanship of interviewers that possess one of those names, the impact of this failure would be fairly small.

Finally, individuals occasionally have slightly different versions of their name across administrative databases such as CadUnico, RAIS, or party membership rolls. One common reason for potential discrepancies is that many women add an additional last name after marriage. Thus, in order to mitigate failed matches due to this problem, we merge the data in three steps: (1) we match bureaucrats with party members by their full name; (2) for any unmatched bureaucrats, we exclude their last surname and find matches among the full names of party members; and (3) for any remaining unmatched bureaucrats, we again use their full names to find matches after excluding the last surname of party members. By construction, we never find double matches after step 1. However, it is possible that they occur after steps 2-3. Given that we cannot be certain about the

¹Some of these interviewers might have moved towns, some of them might have just joined CadUnico registration efforts in neighboring municipalities in order to provide training and expertise, for example.

partisanship status of that specific bureaucrat, we assume a failed match.

After step 1, 18.3% of interviewers and 20.2% of other bureaucrats are found in the party membership rolls – either as old members or new entrants in 2009-2012. Steps 2 and 3 marginally improve the merger, as we find matches for an additional 3.3% of interviewers, and 3.1% of other bureaucrats. The addition of the latter two stages creates a trade-off in the merging process: even though they increase the probability of incorrect matches, they also reduce the probability of a failed match. Accordingly, we show that our estimation results remain very robust if we exclude the second and third stages from the merging process. In Table A.1 below, we replicate the analysis shown in the first two columns of Table 2 (paper) for *Membership*, for these different merging methods. The estimated coefficients remain similar in both magnitude and statistical significance. In addition, we also show that the estimates remain very similar if we use probabilistic merging (Enamorado, Fifield, and Imai, 2019), which is not used as the baseline method due to the intensive computational demands in the case of the RAIS data.

Table A.1: RD Effects on Membership for Different Merging Processes

	INTERVIEWERS			OTHER BUREAUCRACY		
	Probabilistic FastLink (A1)	Steps 1-2 Only (A2)	Step 1 Only (A3)	Probabilistic FastLink (B1)	Steps 1-2 Only (B2)	Step 1 Only (B3)
Incumbency effect	3.574* (0.671)	3.879* (0.680)	3.571* (0.646)	1.195* (0.135)	1.398* (0.135)	1.353* (0.130)
Baseline level	1.552	1.532	1.453	1.200	1.346	1.264
Effect/baseline (%)	230	253	246	100	104	107
Bandwidth	9.96	9.94	10.61	6.85	7.66	7.58
Observations	4724	4712	4938	3482	3808	3764
Pct Partisan	6.84	7.07	6.56	5.01	5.35	4.98

†p<0.1, *p<0.05. Standard errors (parenthesis) are clustered by municipality. *Membership* is the percentage of new partisans in 2009-2012 among CadUnico interviewers or other bureaucrats. The base case includes data merged using the three steps defined in the text above. The baseline level is the average value of each outcome for the losing coalition, at the discontinuity. The incumbency RD effect is the difference on the outcome between the winning and losing coalitions. The line *Pct New Partisan* shows the share of total bureaucrats from each type recruited by political parties in 2009-2012, based on each specific merging procedure.

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B OTHER TABLES AND FIGURES

Table B.1: Summary Statistics: CadUnico Interviewers and Other Bureaucrats

	CADUNICO INTERVIEWERS				OTHER BUREAUCRACY			
	NP	Partisans			NP	Partisans		
	(A1)	(A2)	(A3)	(A4)	(B1)	(B2)	(B3)	(B4)
Partisan in 2008	NO	YES	YES	NO	NO	YES	YES	NO
Joined in 2009-12	NO	NO	YES	YES	NO	NO	YES	YES
Number ('000)	22.0	5.6	0.8	2.1	5205.4	1196.5	130.6	248.8
Share (pct)	72.1	18.3	2.5	7.0	76.8	17.6	1.9	3.7
<i>Personal characteristics of employees (share of total unless otherwise noted)</i>								
Wages (median)	973	1066	1100	999	1068	1120	1249	1063
Age (median)	32	38	37	31	39	46	44	37
Bachelor's degree	0.34	0.28	0.23	0.25	0.32	0.25	0.24	0.25
Female	0.78	0.69	0.55	0.68	0.67	0.52	0.32	0.51
Hired in 2009-12	0.64	0.46	0.48	0.69	0.49	0.37	0.47	0.58
<i>Type of occupation (share of total)</i>								
Low-skill Clerical	0.38	0.37	0.36	0.36	0.16	0.18	0.20	0.20
High-skill SS ^a	0.15	0.07	0.05	0.07	0.01	0.00	0.00	0.01
High Manag.	0.10	0.13	0.19	0.15	0.06	0.10	0.17	0.13
Middle Manag.	0.04	0.05	0.06	0.06	0.02	0.03	0.04	0.03
Low-skill Health	0.04	0.05	0.03	0.03	0.05	0.04	0.03	0.05
Teacher	0.04	0.05	0.04	0.04	0.15	0.12	0.08	0.10
Other	0.24	0.28	0.27	0.28	0.56	0.54	0.47	0.49
<i>Median number of interviews by the profile of beneficiaries</i>								
Total Interviews	117	103	140	150				
New to CadUnico	33	26	32	35				
Interview in 2012	45	26	42	57				
BF Eligible	71	66	90	100				

^aSocial Services. Median wage in R\$/month. The Table presents the shares of individuals in the sample that have each of the listed characteristics, for each group (unless otherwise indicated). For both *Interviewers* and *Other Bureaucrats* the averages are presented for four different subgroups: (i) *Non-partisans (NP)*. Those who were not members of any party on or before 2012 (columns A1 and B1); (ii) *Old Partisans*. The ones that were party members in 2008, and remained in the same party in 2009-2012 (A2 and B2); (iii) *Switchers*. The 2008 members that moved parties in 2009-2012 (A3 and B3); and (iv) *New Partisans*. The ones that joined a party for the first time in 2009-2012 (A4 and B4). Data includes only the 30,517 CadUnico interviewers that were formally employed by local administrations, given that we do not have any employment or demographic data on other interviewers.

Table B.2: Balance of candidate and party covariates

	(1)	(2)	(3)
Mayor's Age	-0.445 (0.558) 12.67	0.155 (0.794) 6.33	0.884 (0.985) 4.22
Mayor's Gender (1=female)	-0.015 (0.021) 9.71	0.001 (0.030) 4.86	0.001 (0.036) 3.24
Mayor's Education (1=at least secondary)	0.025 (0.026) 9.33	0.005 (0.037) 4.66	-0.009 (0.045) 3.11
Mayor's Job (1=public servant)	-0.003 (0.014) 10.27	0.009 (0.020) 5.14	0.018 (0.024) 3.42
Mayor's Job (1=teacher)	-0.010 (0.015) 7.46	-0.024 (0.019) 3.73	-0.027 (0.022) 2.49
Mayor's Party (PT)	0.028 (0.023) 7.79	0.020 (0.031) 3.90	0.000 (0.036) 2.60
Bandwidth Rules	Optimal	Optimal/2	Optimal/3

†p<0.1, *p<0.05. Standard errors (parenthesis) are clustered by municipality and presented in parenthesis. Bandwidths are shown below the standard errors.

Mayor's Age: Candidate's age in 2008.

Mayor's Gender: Binary variable that assumes one where the candidate is female.

Mayor's Education: Binary variable that assumes one where the candidate is has at least a secondary education (high-school).

Mayor's Job (bureaucrat): Binary variable that assumes one when the candidate's self-declared most recent job was public servant.

Mayor's Job (teacher): Binary variable that assumes one when the candidate's self-declared most recent job was teacher.

Mayor's Party (PT): Binary variable that assumes one when the candidate belongs to PT.

THE TABLE CONTINUES IN THE NEXT PAGE.

Table B.2: Balance of candidate and party covariates (Continued)

	(1)	(2)	(3)
PT in coalition (1=Yes)	0.003 (0.036) 10.96	0.016 (0.051) 5.48	0.031 (0.062) 3.65
Mayor's Party (PSDB,DEM)	0.012 (0.029) 9.88	0.018 (0.041) 4.94	0.006 (0.050) 3.29
PSDB/DEM in coalition (1=Yes)	-0.017 (0.039) 8.74	-0.039 (0.054) 4.37	-0.052 (0.065) 2.91
Coalition Size (Number of parties)	0.158 (0.133) 10.22	0.135 (0.186) 5.11	0.205 (0.227) 3.41
Coalition Membership (pct, members per voter)	0.217 (0.186) 10.32	0.334 (0.250) 5.16	0.414 (0.296) 3.44
Bandwidth Rules	Optimal	Optimal/2	Optimal/3

†p<0.1, *p<0.05. Standard errors (parenthesis) are clustered by municipality and presented in parenthesis. Bandwidths are shown below the standard errors.

PT in coalition: Binary variable that assumes one when the candidate's pre-electoral coalition includes PT.

Mayor's Party (PSDB or DEM): Binary variable that assumes one when the candidate belongs to PSDB or DEM.

PSDB/DEM in coalition: Binary variable that assumes one when the candidate's pre-electoral coalition includes PSDB or DEM.

Coalition Size: Number of parties in the candidate's pre-electoral coalition.

Coalition Membership: Number of members in all parties in the candidate's pre-electoral coalition, in the municipality (as pct of total voters in the municipality).

Table B.3: RD Effects on Membership and Candidacy (Alternative specifications)

	MEMBERSHIP			CANDIDACY		
	CadUnico Interviewers (A1)	Other Bureaucracy (A2)	Voting Population (A3)	CadUnico Interviewers (B1)	Other Bureaucracy (B2)	Voting Population (B3)
Dependent Variable includes only the Candidate's Party						
Incumbency Effect	2.808* (0.518)	1.168* (0.105)	-0.032 (0.040)	0.774* (0.356)	0.361* (0.037)	-0.016* (0.005)
Bandwidth	9.99	11.21	10.24	8.94	8.37	9.43
Observations	4732	5192	4828	4322	4064	4432
Quadratic Polynomial, optimal bandwidth						
Incumbency Effect	3.629* (0.715)	1.396* (0.135)	0.006 (0.057)	0.837† (0.459)	0.531* (0.041)	-0.032* (0.008)
Bandwidth	21.15	18.72	20.22	23.40	29.43	20.35
Observations	7744	7270	7600	8086	8626	7510
Cubic Polynomial, optimal bandwidth						
Incumbency Effect	3.655* (0.787)	1.394* (0.152)	0.006 (0.064)	0.805 (0.539)	0.529* (0.054)	-0.033* (0.010)
Bandwidth	30.21	25.98	28.01	30.56	30.04	26.64
Observations	8830	8436	8628	8854	8680	8374
Linear Polynomial, optimal bandwidth divided by 2						
Incumbency Effect	3.214* (0.941)	1.420* (0.193)	0.003 (0.071)	1.185† (0.647)	0.518* (0.058)	-0.036* (0.011)
Bandwidth	4.69	3.85	4.69	5.29	6.55	4.86
Observations	2390	1968	2390	2702	3282	2466
Linear Polynomial, optimal bandwidth divided by 3						
Incumbency Effect	3.592* (1.117)	1.533* (0.241)	-0.035 (0.085)	1.408† (0.754)	0.526* (0.074)	-0.031* (0.014)
Bandwidth	3.12	2.56	3.13	3.52	4.37	3.24
Observations	1596	1264	1598	1816	2208	1646

†p<0.1, *p<0.05. Standard errors (parenthesis) are clustered by municipality. *Membership* and *Candidacy* are described in the main text. The incumbency effect is the difference in the outcome between the winning and losing coalitions.

Table B.4: RD Effects on Membership and Candidacy (Includes Covariates)

	MEMBERSHIP			CANDIDACY		
	CadUnico	Other	Voting	CadUnico	Other	Voting
	Interviewers	Bureaucracy	Population	Interviewers	Bureaucracy	Population
	(A1)	(A2)	(A3)	(B1)	(B2)	(B3)
Incumbency Effect	3.776*	1.392*	-0.019	0.857*	0.504*	-0.037*
	(0.688)	(0.138)	(0.055)	(0.437)	(0.040)	(0.008)
Mayor's Age	-0.042*	-0.003	-0.005*	-0.027*	-0.003*	0.000
	(0.020)	(0.004)	(0.001)	(0.011)	(0.001)	(0.000)
Mayor's Gender (1=female)	0.509	-0.206*	-0.048	-0.382	-0.024	-0.005
	(0.687)	(0.101)	(0.044)	(0.294)	(0.035)	(0.008)
Mayor's Education (1=secondary)	0.072	-0.163†	-0.097*	-0.243	-0.078*	-0.024*
	(0.470)	(0.094)	(0.039)	(0.281)	(0.030)	(0.006)
Mayor's Job (1=public servant)	0.433	0.229	0.011	0.103	0.204*	0.021†
	(0.912)	(0.174)	(0.066)	(0.645)	(0.060)	(0.012)
Mayor's Job (1=teacher)	0.335	0.210	0.063	0.306	0.030	-0.011
	(0.936)	(0.204)	(0.093)	(0.509)	(0.052)	(0.013)
Mayor's Party (PT)	1.368	0.156	0.091	0.833	0.018	0.003
	(1.041)	(0.138)	(0.062)	(0.591)	(0.040)	(0.010)
PT in coalition (1=Yes)	1.339*	0.359*	0.163*	0.300	0.072*	0.039*
	(0.500)	(0.088)	(0.036)	(0.250)	(0.028)	(0.006)
Mayor's Party (PSDB,DEM)	-0.329	0.051	0.102*	0.317	0.049	0.021*
	(0.514)	(0.101)	(0.050)	(0.313)	(0.032)	(0.007)
PSDB/DEM in coal. (1=Yes)	0.187	-0.213*	-0.093*	-0.013	-0.059*	-0.006
	(0.512)	(0.082)	(0.033)	(0.241)	(0.027)	(0.006)
Coalition Size (Number of parties)	-0.100	-0.022†	0.006	-0.031	-0.006	-0.001
	(0.070)	(0.013)	(0.006)	(0.039)	(0.004)	(0.001)
Coal. Membership (pct of voters)	0.204*	0.140*	0.091*	0.095*	0.085*	0.020*
	(0.044)	(0.012)	(0.007)	(0.031)	(0.004)	(0.001)
Bandwith	9.37	7.69	9.38	10.57	13.10	9.73
Observations	4478	3822	4480	4924	5762	4564

†p<0.1, *p<0.05. Standard errors (parenthesis) are clustered by municipality. Bandwidths are optimal. *Membership* and *Candidacy* are described in the main text, all other covariates are described in Table B.2 of this appendix. The incumbency effect is the difference in the outcome between the winning and losing coalitions.

Table B.5: Heterogeneity of the Effects by Potential CadUnico Enrollment

	MEMBERSHIP			CANDIDACY		
	CadUnico	Other	Voting	CadUnico	Other	Voting
	Interviewers	Bureaucracy	Population	Interviewers	Bureaucracy	Population
	(A1)	(A2)	(A3)	(B1)	(B2)	(B3)
Incumbency Effect	3.346*	1.377*	0.023	0.598	0.514*	-0.030
	(0.679)	(0.143)	(0.058)	(0.493)	(0.043)	(0.008)
Potential Enrollment	-0.223	0.016	0.026*	-0.221	0.004	0.008*
	(0.087)	(0.019)	(0.012)	(0.117)	(0.008)	(0.002)
I. Effect x P. Enroll.	0.513*	0.040	-0.019	0.342†	0.013	-0.003
	(0.202)	(0.036)	(0.015)	(0.188)	(0.012)	(0.002)
Bandwidth	9.37	7.69	9.38	10.57	13.10	9.78
Observations	4478	3822	4480	4924	5858	4656

†p<0.1, *p<0.05. Standard errors (parenthesis) are clustered by municipality. Bandwidths are optimal. *Membership*, *Candidacy*, and *Potential Enrollment* are described in the main text. The incumbency effect is the difference in the outcome between the winning and losing coalitions.

Table B.6: Incumbency Advantage for Different Samples

	MEMBERSHIP			CANDIDACY		
	Sample I (A1)	Sample II (A2)	Sample III (A3)	Sample I (B1)	Sample II (B2)	Sample III (B3)
Interviewers	3.839* (0.683)	2.957* (0.635)	5.496* (1.083)	0.912† (0.465)	1.028* (0.498)	1.056* (0.457)
Other Bureaucrats	1.407* (0.123)	1.407* (0.123)	2.364* (0.889)	0.521* (0.046)	0.520* (0.046)	-0.107 (0.461)
Difference	2.432* (0.654)	1.550* (0.612)	3.132* (1.321)	0.391 (0.460)	0.508 (0.494)	1.163* (0.568)
Total Munis.	2368	2368	2368	2368	2332	2332

†p<0.1, *p<0.05. Standard errors (parenthesis) are clustered by municipality. Bandwidths are optimal. *Membership* and *Candidacy* are described in the main text. The incumbency effect is the difference in the outcome between the winning and losing coalitions. The label *Difference* shows the difference between the incumbency effect for *Interviewers* and *Other Bureaucrats*. Samples are defined as follows: (i) all interviewers vs. all other bureaucrats (sample I); (ii) only interviewers with RAIS data vs. all other bureaucrats (sample II); and (iii) the matched sample (sample III). All coefficients are estimated using a single regression where a dummy that indicates whether or not the bureaucrats are interviewers is interacted with t_{ic} , r_{ic} , and $t_{ic}r_{ic}$ from equation 1.

Table B.7: Balance of Characteristics of Bureaucrats and Interviewers

	FULL SAMPLE		MATCHED SAMPLE	
	Interviewers	Bureau - Inter	Interviewers	Bureau - Inter
Low-skill Clerical	0.379	-0.211*	0.415	-
High-skill SS	0.130	-0.121*	0.110	-
High Management	0.110	-0.035*	0.117	-
Middle Management	0.047	-0.028*	0.046	-
Low-skill Health	0.044	0.000	0.044	-
Teacher	0.040	0.098*	0.042	-
Other Occupation	0.251	0.297*	0.225	-
Gender	0.753	-0.121*	0.768	-
Partisan of Incumbent	0.120	-0.026*	0.070	-
New Hire	0.604	-0.135*	0.620	-
Education	0.319	-0.012*	0.279	-
Age	34.843	5.995*	34.299	0.081
Wage	6.926	-0.156*	7.016	-0.008
Observations	30517	6750815	23128	-

† $p < 0.1$, * $p < 0.05$. The first seven rows show the individual's occupation. In each sample, the first column shows the average for the group of interviewers, the second shows the difference in averages between other bureaucrats and interviewers. The matching is described in the text. For variables that were used for an exact match, differences are non-existent.

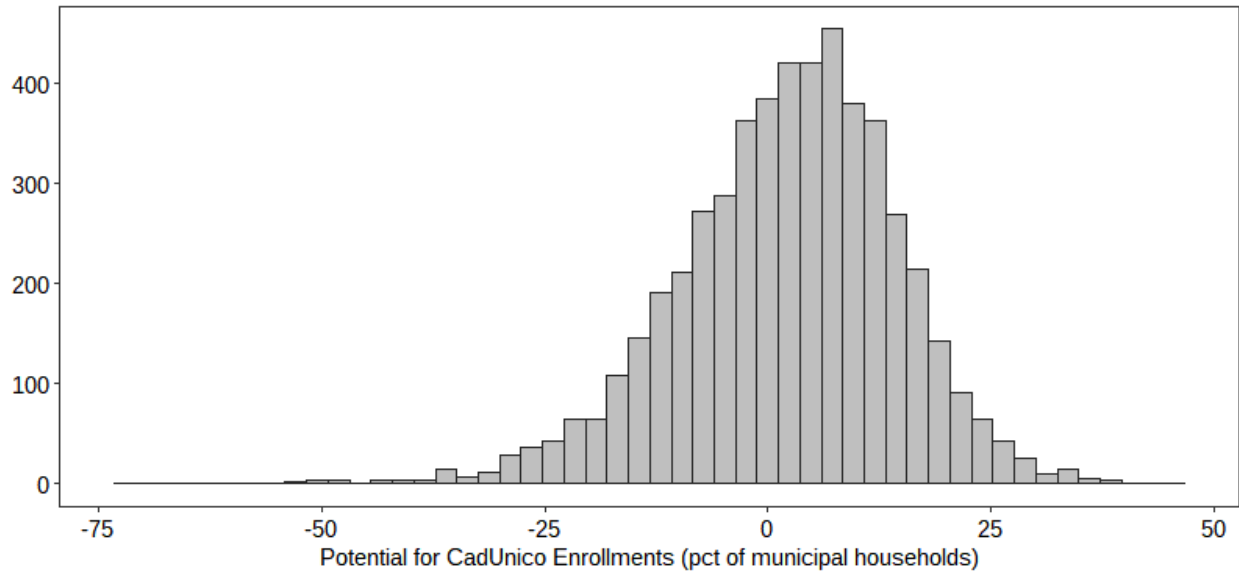
All measures, with the exception of *Age* and *Wage*, are binary variables. *Wage* is measured in log of R\$/month. The *Job* variables assume value of 1 for individuals that have that type of occupation. *Gender*=1 for females. *Partisan of Incumbent*=1 for individuals that were already members in 2008 of any party in the incumbent coalition in 2009-12. *New Hire*=1 for individuals hired during the current mayoral tenure (2009-12). *Education*=1 for individuals with a Bachelor's degree.

Table B.8: Incumbency Advantage in Patronage

	RD EFFECT			RD EFFECT & INTERACTION		
	(A1)	(A2)	(A3)	(B1)	(B2)	(B3)
Incumbency Effect	4.847* (1.034)	5.527* (1.529)	4.950* (1.913)	4.824* (1.085)	5.578* (1.679)	4.947* (2.140)
Potential Enroll.				-0.057 (0.057)	-0.070 (0.094)	-0.117 (0.128)
I. Effect x P. Enroll.				0.009 (0.094)	-0.017 (0.150)	0.003 (0.195)
Bandwidth	10.71	5.35	3.57	10.71	5.35	3.57
Observations	4988	2754	1834	4988	2754	1834
Bandwidth Rules	Optimal	Optimal/2	Optimal/3	Optimal	Optimal/2	Optimal/3

†p<0.1, *p<0.05. Standard errors (parenthesis) are clustered by municipality. The Patronage variable is the percentage of old partisans (members in 2008) among CadUnico interviewers. The incumbency effect is the difference in the outcome between the winning and losing coalitions. Potential enrollment is the difference between the 2009 CadUnico target and the actual enrollment at the end of the previous mayoral tenure (2008), as a percentage of local households. Estimates in A1-A3 come from equation 1, and estimates in B1-B3 come from 2.

Figure B.1: Distribution of the Potential Enrollment Variable



The x-axis shows the count of municipalities in each bin.