Going Local to Win the Nation:
Political Boosting in Mayoral Politics

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Abstract

In federal democracies, parties often invest in local politics to win nationally on forthcoming elections. This strategy is crucial, particularly in noisy democracies where politicians need to find information shortcuts to attract inattentive voters. I define this strategy as political boosting and investigate its dynamics in Brazil, a textbook example of a fragmented party system. Using a regression discontinuity, I show that parties in Brazil boost their national performance earning more votes on House elections in districts where their members control the local office. I discuss how information gains from local incumbency and access to pork controlled by House members explain the effects. Using a Bayesian LASSO algorithm to address data sparsity in RD designs, I further show the existence of pro-large party bias on boosting. By disentangling the effects of boosting after winning local elections, the paper contributes our understanding about how parties build electoral strength in fragmented democracies.

Keyword: subnational politics, information shortcuts, political parties, Brazil.

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Introduction

In politics, the exchange of information between parties and voters is an inherently noisy process (Manin et al., 1999). In more fragmented environments, information demands on voters abounds, adding more noise to an already complicated relationship. To remedy such a dilemma, parties often invest in local politics with a focus on acquiring critical advantages in national elections. Winning local elections allows parties to increase their repertoire of policy and non-policy local endowments, and use the local support to increase their electoral presence nationally. I call this process political boosting, and explore its dynamics and mechanisms for the Brazilian case.

Brazil is a typical example of a young democracy in which the importance of partisanship, at least as commonly depicted by the specialized scholarship on advanced democracies (Campbell et al., 1960; Lipset and Rokkan, 1967; Fiorina, 1981), is considered a weak predictor of the voters' preferences. The Brazilian party system is frequently described as *weakly institutionalized* (Mainwaring, 1991, 1999), with candidate-centered incentives driving politicians' electoral behavior (Samuels, 2003; Ames, 2001). Although recent scholarship challenges some of these preconceptions, showing that partisan and anti-partisan sentiments do matter for candidate evaluation and policy preferences among voters (Samuels and Zucco, 2018; Power and Rodrigues-Silveira, 2018; Baker et al., 2016), information demands for the voter are still recognized as being well above other democracies that elect politicians in single-member districts, closed-list PR, and mixed members rules. In advancing a theory of political boosting, this paper describes how controlling the local helps parties to overcome such informational demands when competing nationally to gain the support of voters.

In this paper, I analyze the electoral benefits political parties gain from electing mayors on

forthcoming upper-level legislative elections in Brazil. I analyze all the mayoral polls between 2000 and 2012, with a regression discontinuity design (RD) to identify the effect of political boosting. I show that winning the local executive, even by a small margin, increases the vote share of the incumbent's party in the forthcoming legislative election. On average, the vote share of the incumbent's party on the forthcoming House Election increases by 2% compared to the runner up party. I estimate how boosting vary across the wide range of parties in Brazil. The results indicate that political boosting is most successful for large parties in Brazil, while small parties do not extract substantive national electoral gains from winning local offices. To estimate the effect of parties, I implement a novel methodological strategy by applying a Bayesian estimator, developed to deal with data sparsity across subgroups, in the context of regression discontinuity designs (Anastasopoulos, 2018; Ratkovic and Tingley, 2017).

After showing the main results of boosting from local to national, I tease out some the mechanisms. I first show how informational gains act as crucial mechanism behind boosting. I demonstrate that winning local elections work as an information shortcut for inattentive voters improving within coalition coordination for the mayors' party. I measure information gains using the concentration of votes for the incumbent and runner up's top candidates within each coalition. If winning local increases the strength of partisan cues, one should expect a higher concentration of votes for the local incumbents' party top candidate running in the forthcoming legislative elections. More information leads voters to pay more attention to the top candidates of the incumbent's party, therefore, improving the electoral gains at the national level.

In addition, I discuss how access to pork works as a second mechanism making boosting more effective. Some studies have consistently shown that partisan alignment means more access to a variety of federal grants in Brazil (Brollo and Nannicini, 2012; Bueno, 2017; Firpo et al.,

2015), but the importance of access to pork on the intra-partisan dynamics in Brazil are still underexplored. I show that mayors compensate the costs of using their local capital for national elections by extracting benefits controlled by their copartisans on upper-level positions. I find a substantial increase of 10 percentage points in the probability of local incumbents to receive pork controlled by copartisans in the House compared to the runner up party in the local race. I further show how these gains in pork increase the effects of boosting on upper-ticket elections.

This paper is not the first to analyze the importance of mayors in party-building in Brazil. Several scholars have already highlighted different aspects about how mayors matter for upper-level elections in Brazil (Novaes, 2017; Ames, 1994; Avelino et al., 2012; Baião and Couto, 2017), and I bring more data and a diverse set of statistical methods to corroborate with this general finding. However, some new perspectives are brought here, which I highlight in the sequence.

First, I present some novel mechanisms explaining how winning local elections helps political parties in Brazil. Extant work has mainly depicted mayors as *brokers* for politically oriented national elites, acting in the local to negotiate votes and somewhat forced to, due to institutional constraints, help their co-partisans (Novaes, 2017; Baião and Couto, 2017). Although I do show that pork controlled by upper-level politicians indeed mater, I provide evidence that the effects of the mayor are also drawn from mechanical informational benefits. More information brought by winning local render a higher coordination capacity for the incumbent party when competing for upper-level seats increasing the attention to its top candidates, and reducing the number of effective candidates in each municipality. This explanation goes in the direction suggestion by the pioneering work of Avelino et al. (2012), but until now had not being empirically tested.

Second, I fully explore how the effects of the mayors vary across the party families in Brazil. While previous literature is silent about these heterogeneous effects (Novaes, 2017; Baião and

Couto, 2017; Avelino et al., 2012; Firpo et al., 2015), I provide robust evidence of how large parties, with a strong presence in upper-level legislative and executive positions, perform better at the municipalities controlled by their co-partisans than smaller parties. Such a pattern presents an important contribution to the literature on political parties in Brazil. Several works converge to the conclusion about the uniqueness of PT in the Brazilian hostile environment (Keck, 1992; Samuels and Zucco Jr, 2014; Hunter, 2010; Feierherd, 2018; Samuels and Zucco, 2018), and my results show that, even though the PT exhibits consistent positive effects in our models, other political parties also have a remarkable capacity to articulate local politicians to work towards their national interests.

Finally, I discuss two extensions for the importance of mayors on national politics. I analyze boosting effects conditional on the institutional strength of the incumbents' party and on career incentives at the local level. I show that state-level partisan alignment and holding a House seat in the district substantially increase the effect of political boosting. After that, I analyze the conditional effect of career incentives on political boosting, which thus far has been primarily used to explain local politics and incumbency effects in Brazil (Titiunik et al., 2015), and find null effects for this explanation.

The article proceeds as follows: In the first section, I expand on the theory of political boosting. Then, I introduce the reader to the institutional environment in Brazil. The following section presents the identification strategy– and the research design employed in the paper. I then discuss the results for political boosting in federal democracies, the heterogeneous effects of parties, and the mechanisms. To conclude, I present a set of robustness checks for the paper, and then I end by considering the broader contributions of this paper.

Political Boosting in Multilevel Democracies

Does winning local elections make parties more competitive in national elections? Do the effects hold even when elections are non-concurrent, and coattails effects are not present? Scholars on federal democracies have long investigated how elections of different scales produce electoral incentives on voters and parties. Under the concept of coattails, much of the literature supports that horizontal forces from executive races shape the performance and fragmentation levels of legislative parties (Golder, 2006; Magar, 2012; Meredith, 2013; Samuels, 2000). In contrast, others argued that vertical effects between multilevel executive positions make presidents a key player in gubernatorial races (Borges and Lloyd, 2016; Rodden and Wibbels, 2010), with some mixed findings on how the reverse effects of local politics impacts national electoral competition in particular when elections are non-concurrent (Golder, 2006; Borges and Lloyd, 2016; Samuels, 2000; Ames, 1994; Broockman, 2009). In this paper, I discuss these questions for the Brazilian case. I propose a theory to explain how parties boost their national results after winning local elections and further discuss the extent to which information gains, pork-barrel from upper-level politicians and party strength drives the results.

National candidates battling for votes have incentives to structure their campaigns around local intermediaries. In particular, in democracies with low levels of partisanship, competing candidates must do more than putting forth a party label to attract the support of inattentive voters. One way to patch information gaps is by using powerful local allies and the resources at their disposal to convince voters to support the incumbents' co-partisans. Local incumbents have a variety of tools to deploy to help a co-partisan running in an upper-level election. Winning control over the local executive gives the local party leader access to non-clientelistic goods (information and reputation) and to clientelistic (jobs and pork) that can be crucial to help

co-partisans running for upper-level legislative positions. In federal democracies with high decentralization, as in Brazil, mayors usually control both types of goods, and voters see these local politicians as their closest bridge to the electoral market.

Open List Proportional Representation (OLPR) is commonly recognized as a source of major information challenges for voters, who are required to chose among thousands of individual candidates within dozens of lists. These information demands have been given a central role when explaining the non-ideological and unstable coalitions that populate the menu of electoral options in Brazil (Amorim Neto et al., 2003; Zucco, 2009). Information demands are also central to explain pro-small party bias in legislative seats (Calvo et al., 2015) as well as frequent party-switching in Congress (Desposato, 2006). Survey data has consistently shown how Brazilian voters have low memory about their recent voting choices for legislative elections (Ames et al., 2008), and although such fact is almost a common knowledge among experts in Brazilian politics, we still know little about the informational shortcuts voters use when going to the polls to choose their House representatives.

I argue that winning a local election makes political signals by parties more reliable, therefore producing information gains for the incumbents' party even when elections are non-concurrent. Voters, needing to make a decision in a noisy environment, observe the party of the mayor as a cue for upper-ballot candidates. This information shortcut results in gains for the party during non-concurrent elections. Information makes party efforts to winning voter more effective, a process I identify by showing a higher concentration of votes on the incumbent party top candidates for upper-level elections within its coalition. More information from local scale up by increasing the attention voters give to the incumbents' party top candidates.

I show how winning a local election, even by a small margin, make within-list coordination

more effective for the candidates of the incumbent party in the forthcoming House election. To measure information gains, I use as an outcome the effective number of candidates for the list of the incumbent's party compared to the party of the runner up candidate at the mayoral race. This parameter identifies the concentration of votes on the top candidates in the incumbents' party-list compared to the runner-up; a decrease in the number of effective candidates represents better information flow relative to incumbents' party top candidates. This measure teases out the information gains from winning local elections and the effect on upper-level legislative elections.

However, beyond the more mechanical effect of information shortcuts, mayors can also decide when to engage on a more partisan endeavor, and help their co-partisans running for upper-level positions. While the previous literature on mayors' behavior in Brazil has mostly focused on the constraints imposed over these local politicians (Novaes, 2017), here, I focus more on benefits parties might provide in exchange for local support.

National legislators in Brazil have a variety of tools to convince local politicians to engage in national partisan efforts. These tools vary from more direct benefits, such as introducing local incumbents to a national network of bureaucrats, to more direct benefits like access to pork under their control. Scholars have called attention to the intertwined use of these intergovernmental resources to advance political interests (Brollo and Nannicini, 2012; Bueno, 2017; Baião and Couto, 2017). I show in this paper how partisan alignment and pork-barrel, together with information gains, explains political boosting from local no national.

The power to allocated individual amendments to the federal budget toward the local governments is the most crucial form of pork under the direct control of House members. Even though the payment depends on the political interests of the President and Cabinet Members (Luz and Dantas, 2017; Vasselai and Mignozzetti, 2014; Raile et al., 2011; Limongi and Figueiredo, 2005),

legislative proposals of pork (amendments to the federal budget) are under full control of House members. More Previous research using survey data show voters' do see such pork-barrel dynamics, and the capacity of upper-level politicians to bring resources to their municipality, as important for their vote choice (Ames et al., 2008).

I use data on individual budgetary amendments proposed by legislators to the local level to measure how pork influences boosting. If boosting matters for access to resources, local executives should receive more resources from the party of the mayor than from the party of the runner-up candidate. Consistent with this hypothesis, I find positive treatment effects using a regression discontinuity design of close races. Second, to examine the effects by party, I show how differences in the allocation of pork from individual amendments after winning a local election increases for stronger parties. For small parties, winning and losing make no difference in the pork proposals edited by a national legislator to their local incumbent relative to the local runner up party, while large parties more faithfully redistribute goods to their local members.

Institutional Background

Brazil is administratively divided into 26 states and one federal district, which are further subdivided into 5,570 municipalities. The political structure at the local level mirrors the presidential arrangement of the central government, except that states and cities have a unicameral legislature while the national level has an Upper and Lower level chamber. The chief executive in all three federal levels are directly elected using a runoff majority rule, although, for mayors of municipalities with under 200,000 eligible voters who represent the absolute majority of the towns, mayors are chosen through plurality rule. Brazil has used the same electoral rules for electing its legislative representatives since the democratization of the country, including the

period discussed here. Legislators are selected in an open-list proportional system in which coalition-building occurs at extraordinary levels (Calvo et al., 2015; Amorim Neto et al., 2003; Figueiredo and Limongi, 2000). Municipal governments answer for a relevant share of the provision of public goods and services, mainly those related to education, health, and infrastructure projects. Elections for all national and state-level offices take place at the same time every four years, whereas all municipal elections occur by two years and also take place every four years.

The Brazilian party system is famous for exhibiting high levels of fragmentation. After the most recent 2018 national election, the largest party in the House, the Worker's Party, holds only slightly more than 10% of the seats, whereas thirty parties won at least one seat for the House. Even though the Legislative Branch has approved some minor changes over time to reduce the partisan fragmentation, the trend of the number of effective parties has consistently moved upward in the last two decades. Based on the Laakso-Taagepera index (Laakso and Taagepera, 1979) which uses vote share as the unit of analysis, Brazil had a total of 8.16 effective parties in the Lower Chamber in 1998. In 2014, the last year under scrutiny here, the total number of effective parties almost doubled, achieving the impressive mark of 14.1 effective parties. Yet, party fragmentation is not limited to the national level. Not surprisingly, the local level of party fragmentation resembles the findings depicted above for the House composition. In 2000, the number of effective parties winning local executive offices was 7.38, while in 2012, the value jumped to 11.

Figure 1 depicts the parties' vote share for the House elections aggregated at the municipal level. The left figure plots the evolution of the number of effective parties using the vote share of the parties for the Lower Chamber, while the right plot shows the average vote share of the parties in each municipality [1]. The figures reveal a worrisome indication of the growing partisan

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[1]The Superior Electoral Court does not provide information of the parties who had zero votes for the years of

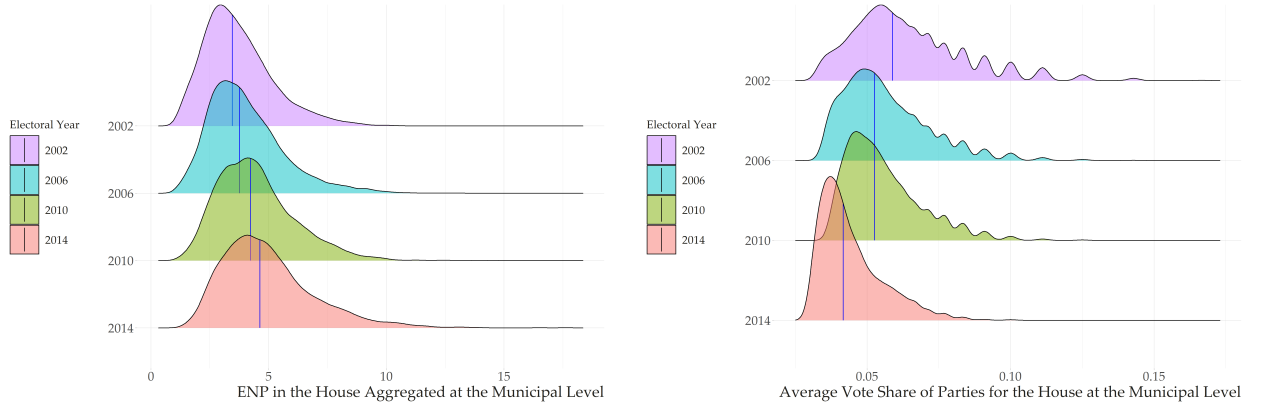fragmentation in Brazil over the years.

Figure 1: Distribution for the Effective Number of Parties and the average vote share for the House by municipality. The vertical blue line indicates the median for each distribution. The mean over the years and the standard deviation for the number of Effective Parties are 4.29 and 1.74, respectively. Whereas, the mean and the standard deviation for the vote share are 5.5% and 1.1%

Brazil offers a unique opportunity for a thorough investigation of strategies of parties in fragmented polities. First, Brazilian political system produce low incentives for intra-partisan cooperation. Second, due to the non-coincidence of the local and national elections, I can disentangle without further problems the boosting effect of local politicians on upper-level elections, therefore filling a critical gap in the literature on party building in multilevel democracies.

Methods

I assess mayors' political boosting by measuring at what degree electing a local executive chief affects the party performance for the subsequent Lower Chamber (national) election. I analyze all the elections between 2000 and 2014. The years of 2000, 2004, 2008, and 2012 represent years with local elections (t), while 2002, 2006, 2010, and 2014 ($t+2$) are years with state and national elections. Therefore, the analysis covers a total of four electoral cycles. The data is available from the Superior Electoral Court in Brazil. All the other variables related to the

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2002, 2006 and 2010; therefore, I exclude these cases to calculate the average

electoral dynamics are extracted from the same source.

The pressing empirical challenge for this paper relates to the chance of omitted or reverse bias affecting the party vote share for the House (y) and the election of the copartisan mayor (T) simultaneously. In other words, in municipalities where the mayor for party j is elected, the level of support for the same party is likely to be higher; therefore, party j has, from the beginning, a distinct baseline in its likelihood of being better off in the upcoming legislative race in this particular district. Thus, positive results might be spurious due to this different baseline propensity instead of related to the effort of the mayor on delivering support for their copartisans. To overcome this empirical challenge, I use a regression discontinuity design. This design has become one of the most credible and accessible strategies in political science to deal with causal effects using observational data and has been extensively applied on close elections in Brazil (Avelino et al., 2012; Klašnja and Titiunik, 2017; Novaes, 2017; Boas and Hidalgo, 2011; Brollo and Nannicini, 2012), as well as other countries (Lee, 2008; Eggers et al., 2015; Broockman, 2009). The model provides a clear identification for political boosting, which I operationalize as the effect of electing the mayor on the vote share of the incumbents' copartisans for upper-level legislative elections .

A variety of methods have been proposed to estimate regression discontinuity designs. I follow the recommended setting of using non-parametric local linear regression (LLR) to approximate the treatment effect at the cutoff point (De la Cuesta and Imai, 2016; Skovron and Titiunik, 2015; Gelman and Imbens, 2018). I employ a local polynomial with one degree to fit two separate regression functions above and below the cutoff of zero margin of victory in the mayoral dispute, with the treatment effect being the difference in the limits of the cutoff, or in other words, the intercepts from each direction. To smooth the local regression function, I employ triangular

kernel weights as a function to the distance between each observation's score and the cutoff. Therefore, observations far away from the cutoff are under-weighted by the estimation strategy, allowing for a better approximation of the treatment effect. I use a data-driven search to select an optimal bandwidth for the estimation which minimizes the Mean Square Error (MSE) of the model. To address bias on the treatment effects due to approximation errors, I report the robust treatment effects and confidence intervals developed by Calonico, Cattaneo, and Titiunik (2014). To ensure robustness, I report results using different bandwidths for the average treatment boosting effects.

Estimation Strategy

For the baseline setup of the paper, I estimate the effects when party j barely wins (loses) the mayoral election at t on the vote share of the party j co-partisan candidates to the congressional race at t_{+2}. I cover the last four electoral cycles in Brazil; hence, t represents the local election, and t_{+2} represents the national elections that occur two years later. The dependent variable employed is the vote share of the two top candidates (the mayor and the runner up) from party j for the House election at t_{+2} in the municipality i. Therefore, the causal effect indicates the increase/decrease in the vote share of the incumbents' party at t_{+2} *vis-a-vis* the vote share of the runner up candidate's party.

To capture the informational mechanisms from winning a local office,I estimate the effect of incumbency on the concentration of top candidates for House elections. As before, the treatment group and control conditions are the same; the outcome is now the effective number of candidates on each legislative list in which the party j runs at t_{+2}. The outcome variable is weighted by the average number of effective candidates within the list the party is registered – these denominators

control for the heterogeneity of list composition in Brazil [2]. The treatment effect is estimated using a regression discontinuity design. The parameter approximates the vote concentration of the top candidates within the list of the incumbent party j compared to the runner-up's party.

In the sequence, I show how access to pork also drives how partisan alignment makes boosting more effective. I estimate boosting effect when the party j barely wins (loses) the mayoral election at t on the access to pork allocations proposed by House members of party j. I restrict the analyses only to the individual budgetary amendments proposed by the party j legislators in the following two years after the local election. This quantity provides a well-identified effect of electing a mayor on promises of pork from one's national co-partisans. Results using individual amendments that were indeed payed by the executive hold similar results. I then use a Bayesian LASSO model to estimate the heterogeneous treatment effects by party - the advantages of this modelling strategy receives a proper introduction in the following section. The estimator allows the identification of partisan variation on how effectively these political parties reward their local incumbents with promises of pork after a local victory. In the supplemental files, I provide a detailed description of the subgroups and the estimation strategy for the mechanisms.

Subgroup effects using Bayesian Lasso for Regression Discontinuity Designs

To estimate the heterogeneous effect of political boosting by parties, I use a novel methodological strategy applying a Bayesian sparse estimator to a regression discontinuity design. Previous work on heterogeneous partisan effects relying on RDD as an identification strategy commonly handpicks the largest parties for their analyzes (Boas et al., 2014; Klašnja and Titiunik, 2017;

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[2]The formula for the outcome is the following $ln(\frac{ENP_{ijm}}{/}E\hat{N}Pjm)$, where ENP represents the classic measure of effective number of parties by Laakso and Taagepera (1979) using the vote share of each party i, in the proportional list j for the House election aggregated at the municipality i, and $E\hat{N}P$ captures the average number of effective parties in the list j and municipality m. Results are the same without using the logarithmic scale, however, the presentation of the results using such transformation is more straightforward

Novaes, 2017), which renders statistical and theoretical problems. First, ad-hoc decisions about subgroup effects can generate false discoveries when no true relationship exists, notably under the condition of sparsity on the data (Pocock et al., 2002; Imai and Strauss, 2011). Second, throwing out part of the data might render inefficient estimators, as the literature on multilevel modeling has commonly argued (Gelman and Hill, 2016). Third, local linear models with sparse data, as in Boas et al. (2014)'s example in which some models have less than 50 observations, are likely to render instability in the asymptotic properties of the treatment effect and raises warranted suspicion about the findings.

To overcome this limitation, I employ the LASSOplus method developed by Ratkovic and Tingley (2017) to identify the subgroup effects in the case of close-races in Brazil. A simple LASSO model works by zeroing out non-relevant parameters when dealing with high-dimensional data (Tibshirani, 1996; Tibshirani et al., 2015). In the Bayesian setup, the LASSO estimator uses some form of prior distribution over the parameters for the regularization process [3]. Anastasopoulos (2018) shows that when data is sparse, the Bayesian LASSO estimation of treatment effects has superior performance compared to local linear models minimizing false negative and false positive rates under small sample sizes [4]. To estimate the model, I estimate the LASSOplus model using the Gibbs sampler with 1,000 burn-in iterations, 1,000 posterior samples, and thinning every 30 samples, which yields 1,000 draws. I use the same bandwidth calculated by the data-driven approach for the general model (Calonico et al., 2014). The implementation of sparse modeling to regression discontinuity designs is a methodological contribution of this

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[3]The Bayesian version of the estimator has been proved to exhibit better performance compared to its frequentist counterparts. First, the broad family of Bayesian methods has been shown to work better when groups have few observations (Stegmueller, 2013). Second, it deals appropriately with the estimation of standard errors in the LASSO setting; in particular, it may provide measures of uncertainty for the parameters in which the penalty term shrinks to zero (Kyung et al., 2010)

[4]I refer the reader to (Anastasopoulos, 2018) simulations to show the superior performance of the LASSO regularization to minimize false negative when dealing with sparse data in regression discontinuity designs.

paper to the emerging literature combining machine learning methods to improve the causal identification of statistical parameters (Grimmer et al., 2017; Athey and Imbens, 2015; Imai and Ratkovic, 2013; Ratkovic and Tingley, 2017; Green and Kern, 2012; Hainmueller and Hazlett, 2014).

Results

I start by providing evidence for the effects of winning the local executive on the party vote share for House seats. Figure 2 presents the results for the RD estimation, pooling all of the years together. Analyzing all electoral years, the average effect of controlling the local executive leads to an increase of two percentage points in the vote share of the incumbent's party for the House. The results are aggregated at the municipal level; therefore, it should be understood as an increase on average at the local level.

Figure 2: Smoothed Regression Discontinuity of the Treatment Effect (Red lines represent the optimal bandwidth decision)
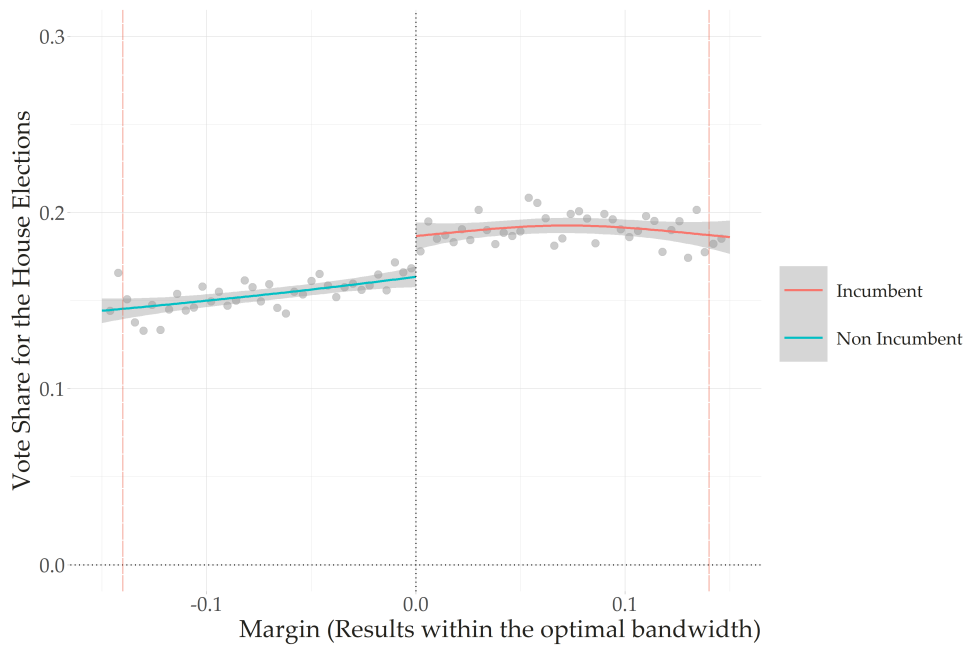
Table 1: Political Boosting: Local Average Treatment Effects

Outcome: Vote Share Co-partisans for the House Election				
Bandwidth (Margin of Victory)	Estimate	Lower Bound CI	Upper Bound CI	Number of Pairs
Optimal Bandwidth (14.4%)	0.022	0.011	0.032	12768
1%	0.019	-0.024	0.086	1080
5%	0.018	-0.006	0.036	5374
10%	0.019	0.001	0.031	9962
25%	0.024	0.012	0.032	17482
100%	0.025	0.017	0.030	21384

Figure 2 visually presents the treatment effect of winning a local election on the vote share of the incumbent's copartisans for the House election. The numerical results for the treatment effect are displayed in table 1. Electing the mayor (t) increases the vote share for the mayors' copartisan candidates for the House election (t_{+2}) by 2.2 percentage points, compared to the runner-up party vote share. Under different specifications for the bandwidth, the results remain positive, although with some variation on statistical significance within very narrow windows.

The average vote-share per party for the House across all the electoral years is 5.5%, with a standard deviation of 1.1% in each city (See figure 1). Therefore, electing the mayor increases, on average, two standard deviations in the vote share of the parties for the Brazilian House election in each municipality. Undoubtedly, an increase of two standard deviations is a substantial effect on elections. More important, considering how competitive House Seats are in Brazil, (Calvo et al., 2015), a two standard deviation increase in the party vote share might be the difference between winning or losing a seat.

The Effects of Political Boosting by Parties

Figure 3 presents the Bayesian LASSO non-zero coefficients for the party effects. The results indicate five parties have treatment effects different from zero: the *Partido do Movimento*

Democrático Brasileiro (PMDB), the *Democratas* (DEM, formerly Partido da Frente Liberal), the *Partido da Social Democracia Brasileira* (PSDB), and the *Partido Progressista* (PP), and the *Partido dos Trabalhadores* (PT). The effects are positive, statistically distinct from zero, and the PP has the largest conditional effect.

These five parties are the largest in the Brazilian system considering the number of seats in the House and the number of elected mayors over the last three decades, which suggests that party size matters notably for the successful alignment between local-national politicians. The PP, a non-programmatic, clientelistic party, appears in the results as having the largest effect, suggesting that the treatment is hardly related to the strength of party labels, as the literature supposes when analyzing incumbency effects (Titiunik et al., 2015).

Second, programmatic preferences and coattail-presidential effects also seem to have no impact on boosting. These five parties represent a fair amount of variation regarding policy preferences, and with the exception of the PT and PSDB, none of the other three parties have had competitive presidential candidates in the recent Brazilian elections. To test for presidential coattails, I provide models for robustness checks in the supplemental files. The results show no consistent effects of having a competitive presidential candidate on the treatment effect.

Finally, the existence of partisan bias on boosting in favor of larger parties validates theories on party strength, moderating the effect of boosting. Larger parties in Congress have more representatives spread throughout the districts as well as governors elected, therefore exhibiting a higher ability to coordinate the mayors' behaviors. The next section provides empirical evidence for this.
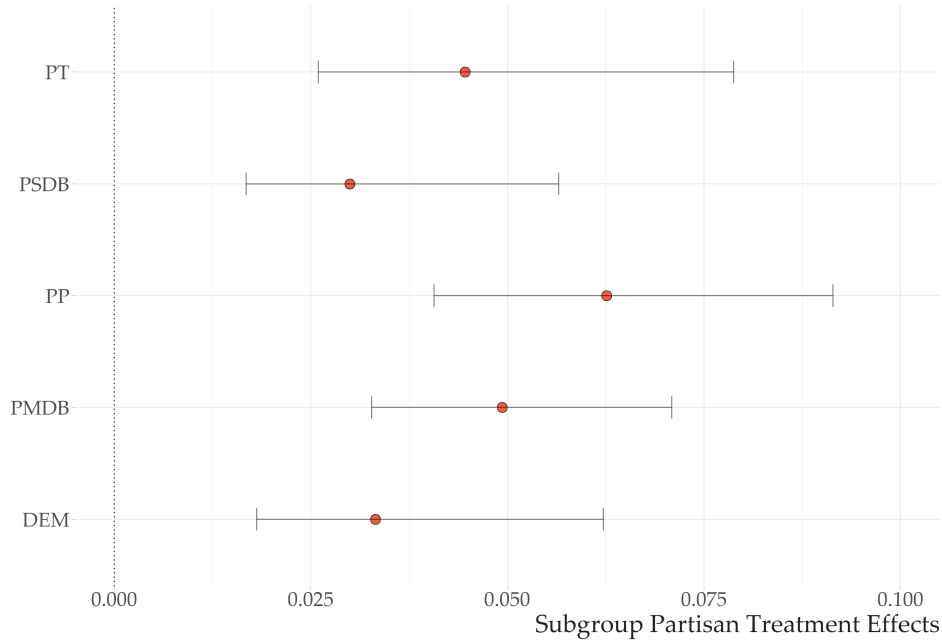
Figure 3: Nonzero conditional treatment effects by parties using the Bayesian Sparse LASSO algorithm. The estimation uses a data-driven bandwidth selection and presents the median point estimates with 95% confidence intervals.

Mechanism: Information gains and Party Coordination

Figure 4 presents the information gains parties extract from winning a local election. I estimate two distinct models to ensure robustness. First, I show the effect of incumbency on the effective number of candidates, considering the entire sample. Second, I isolate the effects only for the cases where the parties of the mayor and the runner up's are competing for House seats in the list. The latter case provides strong evidence for the information gains provided by local offices; even running in the same coalition, incumbency has a stronger negative effect - an increase in coordination - on the number of effective candidates running for upper-level legislative elections. Both parameters are statistically distinct from zero using 95% confidence intervals.

The results show that the top candidates from the incumbent's party gain higher attention

vis-a-vis the runner-up's party, which renders a more efficient allocation of votes for the party as a consequence of information gains. Greater attention for the top candidates emerges from voters observing the party of the mayor, and rewarding their more competitive candidates within each list. The results remain positive under more restrict bandwidths, although statistical significance decreases.
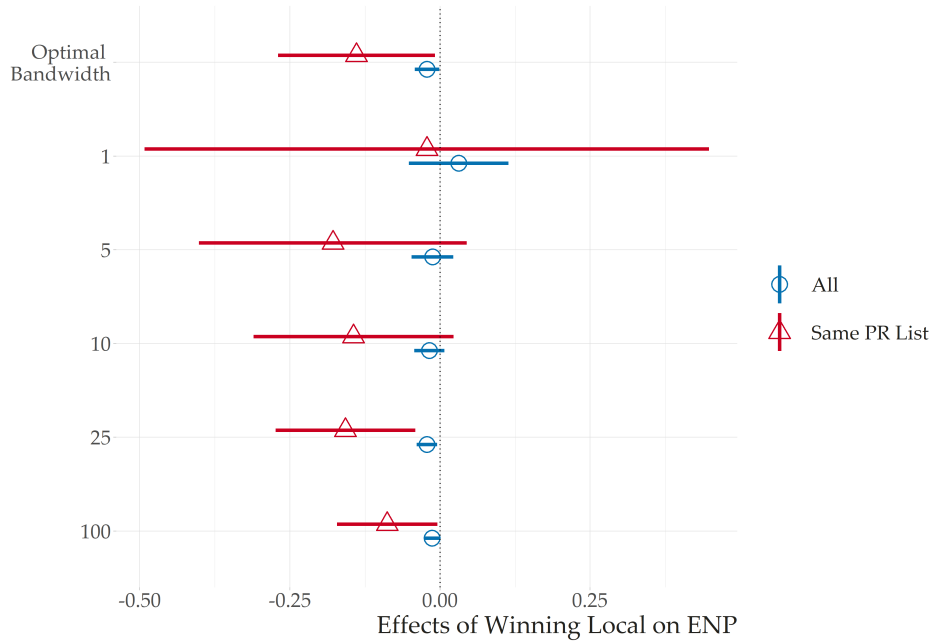

Figure 4: Information Gains from Boosting: effects on winning local the effective number of candidates by list. The estimation uses a data-driven bandwidth selection and presents point estimates with 95% confidence intervals.

Pork-Barrel and Partisan Alignment

Figure 5 presents the effect of winning a local on access to the allocation of pork from the House by the incumbents' copartisans. After a local election, a municipality increases the probability of having an allocation of pork by the party of the incumbent by 12 percentage points, compared to the runner-up. In other words, House members send more money to municipalities that their party wins, versus the places where the parties were barely defeated. To connect this

finding with political boosting, I estimate the mediated effect of pork on boosting; I separate

the data according to the access pork for the incumbent and the runner up local candidate. In

the sequence, I estimate the political boosting effect conditional on the subgroups. The results

demonstrates how promises of pork works affects how successfully local incumbents improve their

copartisans performance on upper-ticket legislative elections. Incumbents who have promises of

pork from copartisans increase their party vote share by 10%, while those with no promises in

the next two years after being elected exhibit null results. In addition, when incumbents do

not have promises of pork from House Members, but the runner up does, the vote-share of the

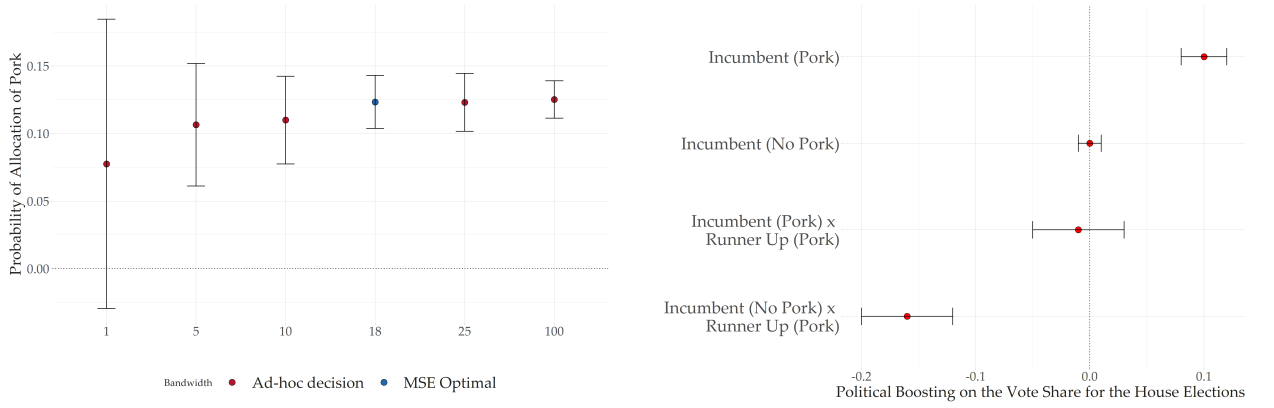incumbents party is abruptly reduced.

Figure 5: Political Boosting and Access to Pork. The left figure shows the treatment effect of winning a local election on the allocation of pork by House Members from the same party. The right plot shows the effect of Political Boosting mediates by access to Pork and report only coefficients using the optimal bandwidth. Both plots use the robust 95% confidence intervals and point estimates.

Figure 6 presents the conditional effect of access to pork by parties using the Bayesian LASSO

estimator. For the theory of boosting, the existence of differential effects on the allocation of

pork explains how the benefits provided by boosting varies by parties. In the same direction

of the partisan effects of boosting, the results indicate that the four largest parties in Brazil

are more efficient in rewarding their local incumbents that win election. The effects by parties

is roughly similar to the average effect, except for the case of the PT; large parties increase,

21

on average, the chances that their local incumbent will receive an individual amendment in the following two years after being elected by 15 percentage points . On the other side, smaller parties show no substantial effects. When a large party wins the local executive, their copartisans bring 'home the bacon' by sending resources under their control to the municipalities controlled by their copartisans. Meanwhile, smaller parties, even when successful in electing a mayor, do not receive the support of their copartisans in the House. From the perspective of the local incumbent therefore, boosting, or using her local capital to help a copartisan running for an upper-level election, is more efficient for only a few major parties in the Brazilian system [5]
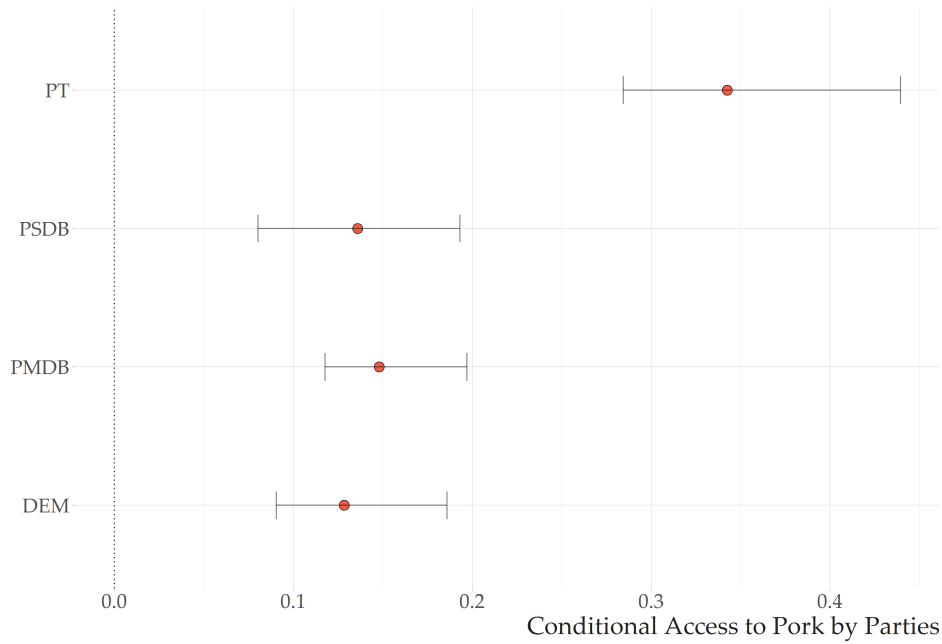

Figure 6: Nonzero conditional effects by parties on access to pork using the Bayesian Sparse LASSO algorithm. The estimation uses a data-driven bandwidth selection and presents the median point estimates with 95% confidence intervals.

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[5]The supplemental files show similar results when estimating a single model for each party using the local linear estimator (Titiunik et al., 2015). Although more positive cases appear when using a local modeling strategy, the general findings about a large party bias do not change.

Extensions: Party Institutional Strength and Incumbents' Career Incentives

In this section, I present two extensions to the theory of political boosting [6]. I estimate whether the boosting effects are conditional on partisan institutional strength and the mayor's career incentives. Specifically, I measure whether the effects of electing the local incumbent changes if i) the state governor is from the same party of the barely elected mayor; ii) the party of the incumbent has a House Representative running for reelection on t_{+2}. For the career-centered incentives, I split the data into three subgroups: i) Incumbent; when the mayor runs for reelection at t_{+4} ii) Lame-duck, when the mayor hits term limits and cannot run for reelection; iii) Open Seat, when mayor could but decided not to run for reelection. This research design closely replicates the model in Titiunik et al. (2015).

I first present evidence for the importance of party strength on political boosting. The results in figure 7 show that conditional on being from the same party of the governor, winning the mayoral race increases the party vote share for the House election by 13.5% percentage points. This conditional effect on the governor subsample is six times larger than the average treatment effect, indicating the importance of vertical alignment for political boosting. This substantial effect confirms previous research about the relevance of governors for electoral dynamics in Brazil (Samuels, 2003; Abrucio, 1998). Figure 7 shows a similar effect for the mayors who have at least one elected House representative at the time of the election in t_{+2}. The effect is twice the size of the average treatment effect.

These results align with the theory of political boosting. In an economy of scale, political

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[6]In the supplemental files, I provide a detailed description of the research design, the treatment and control groups, and the outcome variable for the subgroup analysis discussed in this section

elites have more loyal allies at the local level when party strength in the district is higher. In the case of larger parties, the costs for an incumbent to help her copartisans running in upper-level elections decreases, rendering the incumbent's effort to help her copartisans more effective. The increase in efficiency might come from both mechanisms we discussed before: stronger informational gains and greater capacity to promise resources.
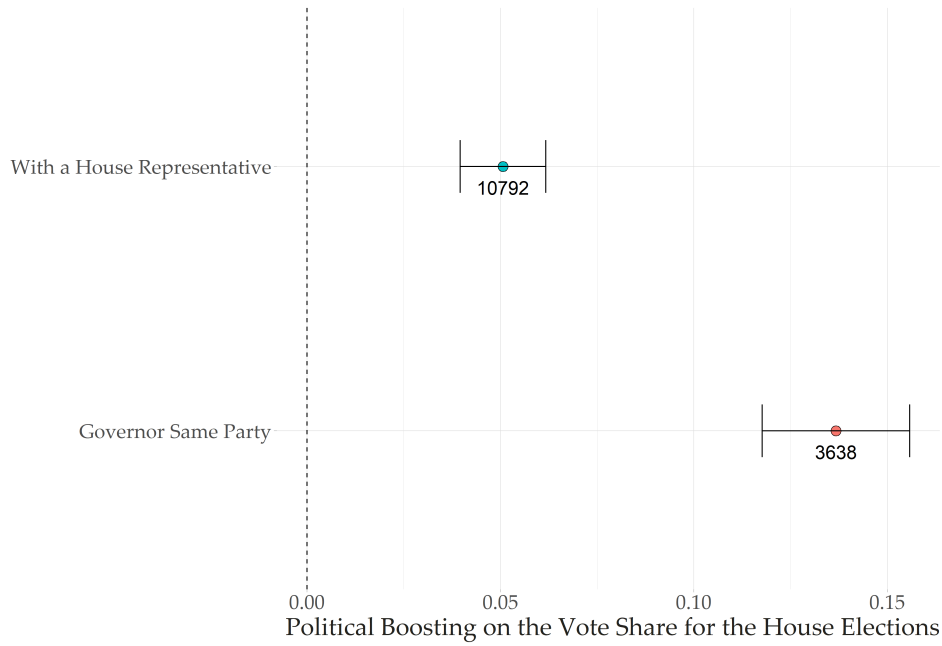

Figure 7: Conditional Treatment effect for the Party Coordination mediator on Political Boosting. The figures plot robust 95% confidence intervals. The number of cases is printed above each point estimate.

Following the literature on incumbency effects (Titiunik et al., 2015), I estimate the effect of career incentives of local incumbents on boosting. Figure 8 indicates no consistent difference between career paths and the effect of winning local elections in the House results. Across the three subsamples - incumbents, open-seat, and lame-duck mayors - the effects are similar in magnitude to the average treatment effect of a 2% increase in the vote share for the House elections. However, in the Lame-Duck sample, the effect is not statistically different from zero using the robust 95% confidence intervals, which is a consequence of sparsity in this subgroup.

24

To summarize, political boosting does not depend on the mayors' career ambition. Party institutional strength has stronger conditional effects on political boosting in federal democracies. A plausible explanation for the effects of party strength on boosting relates precisely with the access to pork and information gains. First, stronger parties have more access to intergovernamental transfers in Brazil (Brollo and Nannicini, 2012; Bueno, 2017). Additionally, since the effects of boosting also come from reducing noise in a fragmented political environment, the null effect of career ambition indicates voters do not discount the perspectives of the mayor when using the political offices as an informational device to decide on upper-ticket elections.
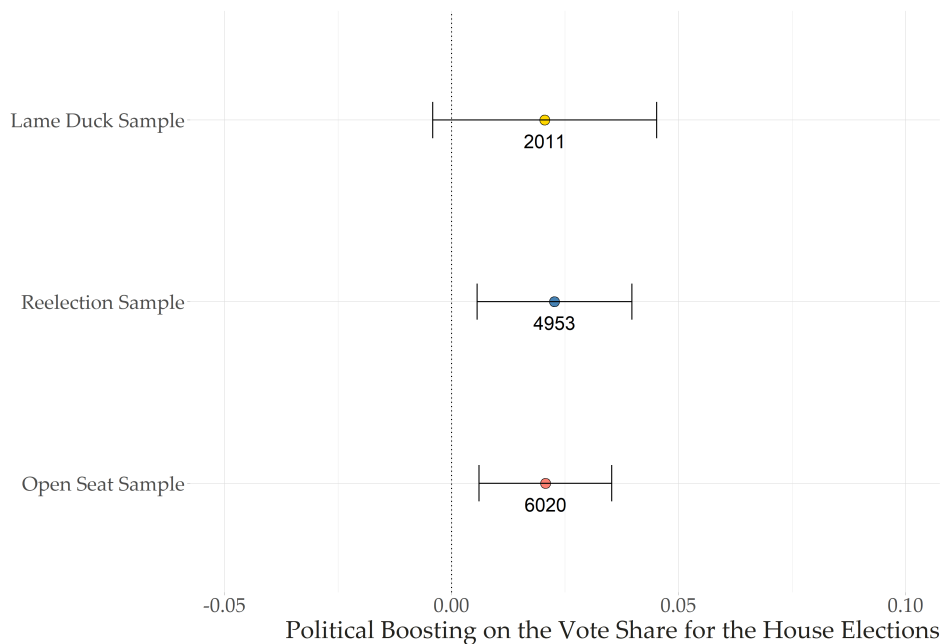

Figure 8: Conditional Treatment effect for Mayors' career ambition on political boosting. The figures plot robust 95% confidence intervals. The number of cases is printed above each point estimate.

Robustness Checks

For the discontinuity design to be internally valid, the continuity assumption must hold (De la Cuesta and Imai, 2016; Skovron and Titiunik, 2015; Imbens and Lemieux, 2008). Although

the continuity assumption is untestable, best practices suggest looking carefully for signs of violations. I perform two sorts of tests for the validity of the RD design. In the supplemental files, I first show no evidence of sorting on the margin of victory in the pooled data, the data by year, the subsamples, and the five parties with positive conditional effects; none of the cases have robust p-values for the null hypothesis of sorting smaller than .11 using the test developed by Cattaneo, Jansson, and Ma (2018). I also run a "placebo" test regressing the treatment on lagged values for the vote share for House Election (t_{-2}) for the pooled data, for the year subsamples, and the five parties. The results using the lagged vote share are particularly reassuring regarding the validity of the RD setup, as it implies that predetermined electoral outcomes are not related to close races. Except for the case of the PMDB, with a negative coefficient which is statistically distinct from zero, I find no evidence of spurious correlation with the pre-treatment vote share.

To further test the robustness of the results, I re-estimate the treatment effect in the supplemental files using the rate of change of party support for House elections before and after electing the mayor and the vote share of state legislators as the dependent variables. If winning locally matters to explain different electoral gains between the incumbent and the runner up in the upcoming elections, it is reasonable to expect the incumbent's vote share *vis-a-vis*, as well as the runner-up candidate's vote share, to increase over time. Therefore, in the supplemental files, I re-estimate the models using the rate of change of the barely elected (loser) mayor's vote share from the previous to the next election as explanatory variables. The logic applies correspondingly for state legislators who win elections on the same day of House members in Brazil; if informational shortcuts run from below, I should expect that winning locally also matters to copartisans state legislators. I direct the reader to the Supplemental Files for a more extended discussion, where I report more detailed results.

In brief, the findings converge for change of electoral support over time; indeed, the treatment effect is more substantial when the baseline vote share in previous elections is included in the model. However, the effects on state legislators do not seem as strong. In the latter case, boosting is more dependent on party strength than in the general case of House elections . The findings for state-level elections speak to the fact that state deputies usually are closer to local political dynamics than their copartisans in the House but also institutionally weaker, therefore both relying less upon, but also having less to offer local incumbents. I also test in the supplemental files if having nationally competitive candidates for the presidency works as a mediator for political boosting. The effects do not provide evidence for this argument.

Conclusion

In this paper, I propose a theory to understand if and how parties invest in local political capital, and whether that action renders substantial national gains. I label the process of aligning local capital to national gains as political boosting, and I test this theory in Brazil–a noisy, fragmented political environment. I find strong evidence that electing a mayor increases the incumbents' party vote share for future House elections. However, not all parties win on the same proportion. Large parties are more efficient when using their local incumbents for national gains compared to their smaller contenders.

I discuss different mechanisms behind boosting. Winning local - even in a close-race and when the incumbent and the runner up party belongs to the same list - generates information gains for top candidates and reduces the number of effective candidates in upper-ticket elections. Besides, I show incumbency renders greater access to pork from national co-partisans, as others had already discussed (Baião and Couto, 2017; Luz and Dantas, 2017), how the effect is greater

for larger parties – mayors from strong parties receive more resources upon winning than do incumbents from small parties, and the importance of pork for the support received later from local Mayors. Both mechanisms explain the effectiveness of aligning local capital to national elections, and show how winning local improves party performance on upper-level forthcoming elections.

My findings are consistent with Avelino et al. (2012) and Novaes (2017): mayors are crucial for upper-ticket electoral performance in Brazil. In their previous work, macro-level institutional changes and intra-partisan coordination appears as explanations. Here, I expand the findings in a few different directions by i) showing the importance of information gains and party coordination at the local level, ii) estimating how pork turn boosting from local allies more effective, iii) adding to this scholarship a discussion about pro-large party bias, and how these parties benefit to a greater degree from the political coordination with their mayors.

The theory of political boosting speaks highly to the literature on information shortcuts in democratic regimes. In the opposite direction of Rodden and Wibbels' (2010) argument, when elections are non-concurrent, I argue that information runs from below, from the local to the upper level. In this sense, controlling the local information becomes key for party building in fragmented polities. Voters seem to pay attention to local politics, in our case, affiliation with the mayor, to reward her copartisans running for House election. In the specific case of Brazil, some have argued that party labels in the local level might actually hurt presidential candidates when voters are dissatisfied with the local government (Feierherd, 2018). The findings for political boosting go in the opposite direction; when voting for upper-level legislative elections, in which information is more scarce than in presidential elections, local incumbency helps parties.

In addition, the paper also detects that the heterogeneous effects of winning local are mostly

independent of the mayors' decisions about their career; partisan institutional strength seems to dominate the career ambition incentives at the local level. Therefore, the causes of political boosting diverge from the argument behind incumbency effects in Brazil (Titiunik et al., 2015), which explains why although incumbency has a negative effect on local elections, national elites still fiercely fight to control the local offices in Brazil.

The theory of political boosting offers a road map to understand how parties utilize different strategies to pursue national goals. In no sense is political boosting restricted to the case of Brazil. Future research needs to explore further how politicians invest in local politics to advance national gains on non-concurrent elections for other cases of federal democracies, as the literature in American Politics has consistently shown for the use of redistricting. For the case of Brazil, political boosting shows how access to pork and information gains explain gains on upper-level elections. While previous research has identified the presence of small-party bias for House elections in Brazil, due to mechanical effects of coalition' rules (Calvo et al., 2015), this paper indicate how large parties have a distinctively dominant strategy when building their national stand: to boost their political performance, large parties in Brazil go local to win the nation.

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