

National or Sub-National Parties: Does Party Geographic Scope Matter?*

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Abstract

In many developing countries, sub-national parties have emerged as dominant forces in local elections. This denationalization of local politics has raised concerns of increasing regional populism, weaker accountability, and worsening political selection. This paper examines whether the geographic scope of a party (national, regional or local) affects policy outcomes, such as budget size and expenditure allocation. Using a regression discontinuity design and rich data from Peruvian municipalities, we find negligible differences in policy outcomes between national and sub-national parties. We also document small impact on mayor's education and future corruption charges. The lack of stronger effects appears to reflect policy convergence driven by political competition. Overall, our results challenge the view that sub-national parties are detrimental to local governance.

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1 Introduction

In recent years, there has been an emerging trend towards denationalization of local politics: in many countries, national parties are being displaced by those with a regional or local scope.¹ For instance, European national parties are facing increased competition from regional and independent lists (Reiser and Holtmann, 2008). India has recently experienced a rise of strong regional parties (Ziegfeld, 2016), while sub-national parties proliferate throughout the Andean region of Latin America (Sabatini, 2003; Seawright, 2012).

This transformation of local politics has raised several concerns. Local parties may be more prone to regional populism, less accountable, or less capable to elect competent politicians (Sabatini, 2003; Gibson, 2005). If this is the case, the rise of sub-national parties could be damaging to local governance. Given this context, a relevant question is whether the geographic scope of a party² matters for local policies and government outcomes.³

Theoretically, the effect of a party's geographic scope is, however, ambiguous. On the one hand, the standard Downsian model of electoral competition would predict policy convergence (Downs, 1957). In that case, there would be no policy differences between national and sub-national parties. On the other hand, some arguments suggest that party geographic scope may matter. First, sub-national parties may attract politicians with better knowledge of local needs (Oates, 1999) and implement policies closer to the local median voter (Bhattacharya, 2018). In turn, national parties should be better at internalizing the geographical spillovers of local policies (Riker, 1964; Enikolopov and Zhuravskaya, 2007; Lipscomb and Mobarak, 2017). Moreover, national parties may be better suited to select and discipline politicians, for instance, by offering prospects of a political career (Hall and Van Houweling, 1995). These features would imply policy differences across party types.

In this paper, we provide the first estimates for the causal effect of party geographic scope on local government outcomes. We do so by studying Peruvian district municipalities in the post-

¹This rise of sub-national parties is viewed as an unintended consequence of decentralization reforms which increased the power of regional and local governments (Chhibber and Kollman, 1998; Bardhan, 2002; Brancati, 2008; Harbers, 2010; Dargent and Munoz, 2011).

²By party geographic scope, we mean the extent of a country's territory where a party presents candidates for office and where its interests lie (i.e., national, regional or local).

³For instance, Hopkin (2003) called for more studies on the consequences of the rise of non-statewide parties and nudges scholars to research the 'territorial dimension' of party politics.

decentralization period (2002 onwards). The Peruvian local context is well-suited for our study as it is one of the best examples of economic decentralization accompanied by a dramatic denationalization of local politics: the share of national-party mayors dropped from 100% in the 1980s to 30% by 2014. Moreover, the country boasts several levels of sub-national parties (regional, provincial and district political movements), allowing for a detailed study of party geographic scope. Finally, there are no strong ideological differences across most parties in Peru (Dalton, 2008), particularly in relation to local politics. Hence, our estimates would not be confounded by party ideology.

We obtain causal estimates of the effect of party geographic scope by comparing municipalities where a candidate affiliated to a party of certain type barely won the local election versus those in which the candidate barely lost. This quasi-experimental strategy addresses relevant concerns regarding omitted variable bias and allows us to interpret our findings as causal effects (Lee, 2008).

The main contribution of this paper is to show that the geographic scope of a party has, in fact, *negligible* effects on observable policy outcomes. In particular, there are no significant effects of national-party rule on municipalities' total revenue, local tax revenue, total spending, nor public investment, nor on other outcomes over which mayors have substantial discretion, such as composition of public spending and implementation rates of public investment projects. We also find negligible effects on indicators of accountability, such as number of corruption complains and electoral recall, and mixed evidence on political selection: national parties lead to mayors being slightly more experienced, but not better educated, nor less likely to have a judicial sentence before assuming office.

Our findings do not stem from a lack of statistical power nor model misspecification. First, regardless of statistical significance, the magnitude of the coefficients is small. In most cases, they imply an effect of less than 0.1 standard deviations. Second, we confirm the lack of sizable effects using a novel permutation test proposed by Canay and Kamat (2018). This test evaluates discontinuities in the distribution of outcomes and has more power than standard mean comparison tests. Finally, our results are robust to using different polynomials of the running variable, and to including a rich set of covariates, such as population, socio-economic indicators, and past realizations of the outcome variable.

Theoretically, our null results could be masking significant heterogeneity across different types

of sub-national parties. For example, policy outcomes of local parties may be systematically different than national parties, but their effect could be attenuated when bundled together with regional parties. To address this concern, we also examine the effect of regional and local-party rule separately. As with the case of national-party rule, we find negligible effects of party type on policy outcomes.

We hypothesize that the similarity of policy outcomes may reflect policy convergence due to electoral competition. Consistent with this interpretation, we provide suggestive evidence that in municipalities with high average levels of political competition, party type does not affect policy outcomes. In contrast, in municipalities with low average levels of political competition, there are significant differences in policies implement by national and sub-national parties.

The rest of the paper is divided as follows. In the next section, we provide an overview of the literature on national parties and the effect of party attributes on local outcomes. In Section 3, we summarize the key aspects of the Peruvian context. Section 4 discusses data sources and lays out the empirical strategy. Section 5 presents the results. Finally, Section 6 provides some concluding remarks.

2 Literature Review

National parties are thought to contribute to better local outcomes. The literature has consistently argued that these offer stronger career incentives, face higher reputation costs and internalize the nation-wide effects of their policies. Hence, theoretically, national parties should reduce local populism, improve accountability, and elect better candidates.

Riker (1964) famously suggested that the strength of national parties reinforces economic decentralization by aligning politicians' incentives and preventing regional populism. A regional or local focus can lead to negative externalities. Lipscomb and Mobarak (2017) provides indirect evidence on this by showing that a mismatch in party affiliations between mayors in neighboring districts in Brazil is associated with an increase in pollution of the shared river by the upstream municipality. Enikolopov and Zhuravskaya (2007) found empirical support for the general benefits of a national-party based system at the cross-country level. In particular, strength of national parties is associated with better central government quality and higher levels of national economic growth.

The argument that national parties outperform their sub-national counterparts extends to contexts where parties are not particularly cohesive and well-established political organizations. In a study of denationalization of local politics in the Andean Region, [Sabatini \(2003\)](#) states that even though sub-national parties may better represent local interests, they have “weakened governability and national-level democratic accountability” ([Sabatini, 2003](#),138).

Our paper complements the above literature in several key respects. First, it provides the first causal micro-level estimates of the effect of party geographic scope on local outcomes in a recently decentralized country. Second, contrary to the literature’s expectations, we show that national and sub-national parties tend to have similar performance across a wide range of outcomes. Finally, we show that these differences are particularly small in a highly competitive political environment. This suggests that the role of national parties may not be as important insofar as parties face stiff competition.

Our findings also contribute to the literature on the impact of various political party attributes on local economic policies and outcomes. Most of this literature uses the regression discontinuity approach similar to the one adopted in this study, but focuses on ideological differences. Using the case of U.S. cities, [Ferreira and Gyourko \(2009\)](#) finds little differences between Democrat and Republican mayors in terms of government size and budget allocation. [Gerber and Hopkins \(2011\)](#) show that the lack of stronger effects at the local level can be due to limited discretionary authority.⁴ The effects of ideology and partisanship have also been explored outside of the United States. For example, [Pettersson-Lidbom \(2008\)](#) finds that partisanship has economically significant effects in Swedish local governments: left wing parties spend and tax more than their right-wing counterparts. [Folke \(2014\)](#) shows that, despite small representation in local councils, green and nationalist parties in Sweden are able to shift the environmental and immigration policies in their jurisdictions. Perhaps surprisingly, [Meyersson \(2014\)](#) documents that Islamic-party rule in Turkey has a positive impact on female education enrollment.

Recent work has also studied the impact of non-ideological party attributes. [Primo and Snyder Jr \(2010\)](#) found that states with stronger party organizations have lower spending per capita.

⁴At the more aggregate level of U.S. states, [Reed \(2006\)](#) documents that a Democrat majority in the U.S. state legislature leads to an increase in the tax burden and the size of government. [Beland \(2015\)](#) finds that the party affiliation of the governor has an effect on labor market outcomes. However, [Leigh \(2008\)](#) found no significant differences between Democrat and Republican governors.

Using the case of Colombian municipalities, [Galindo-Silva \(2015\)](#) finds that new parties, defined as those that had never won an election in a given municipality, increase public spending and tax revenue relative to traditional, older, parties. In a related study, [Gamalerio \(2017\)](#) compares party-affiliated mayors with those running under independent lists and their impact on fiscal outcomes in Italian municipalities. He finds that party-affiliated mayors run smaller deficits than independents, especially among small municipalities not subject to constraining fiscal rules. These results are different from those of [Koethenbuerger \(2012\)](#) who finds that party-affiliated and party-independent municipal council members in Germany have similar levels of pork-barrel spending.⁵

Our paper complements these studies by providing the first systematic evidence on an important yet understudied party attribute: geographic scope. In contrast to [Gamalerio \(2017\)](#) and [Koethenbuerger \(2012\)](#), we compare national parties with their sub-national counterparts rather than party-affiliated candidates with independents.⁶ Moreover, our context allows multiple comparisons between parties with various degrees of geographic scope (i.e. national versus sub-national, regional versus others, local versus others). Finally, we study a developing country with similar characteristics to the nations that have experienced party system denationalization and where one would expect the consequences of this process to be most salient ([Seawright, 2012](#)).

⁵A less related line of research looks at the effects of politicians' individual characteristics on various government outcomes. For instance, several studies have looked into the importance of gender. [Chattopadhyay and Duflo \(2004\)](#) document that female politicians in India tend to invest in infrastructure that is more relevant to their gender. [Ferreira and Gyourko \(2014\)](#) find no policy differences between male and female U.S. mayors. In the context of Brazil, [Brollo and Troiano \(2016\)](#) show that female mayors tend to be less corrupt but also have lower re-election probabilities. Note that these findings are unlikely to affect our estimates as we do not find differences in candidate's gender across party types (these results are available upon request). [Alesina, Troiano and Cassidy \(2015\)](#) find that young politicians tend to engage in higher levels of spending and attract more federal and regional transfers. Although we do observe an effect of party geographic scope on mayors' age, it does not translate into the spending patterns as predicted by [Alesina, Troiano and Cassidy \(2015\)](#).

⁶In our context, only district-level local political organizations, which account for only 3% of candidates during our period of analysis, could be categorized as independent candidates.

3 Context

3.1 Peruvian Local Governments

This paper focuses on district municipalities, the lowest tier of autonomous sub-national government in Peru.⁷ Municipal government is composed of a mayoral office and a municipal council. The mayor is the main administrative authority. Among other duties, mayors are in charge of designing and implementing the municipal budget and development plans. The municipal council is the legislative branch. Council members known as “regidores” can propose amendments to the budget and are in charge of approving local laws.

Mayors are elected for a four-year term using a simple majority rule. Local council seats are allocated based on the number of votes obtained by each mayoral candidate. The mayor’s party receives at least a simple majority in the council independent of the vote share won. Voting in Peru is mandatory for citizens and penalties apply for failing to cast a ballot. Municipal elections are organized and overseen by several central government offices, such as the National Electoral Processes Office (ONPE) and the National Jury of Elections (JNE). Throughout almost all the period of our analysis, there were no term limits, so mayors were able to run for reelection indefinitely. This changed in 2015 when the Peruvian Congress forbade the immediate reelection of regional presidents and municipal mayors. However, it should be noted that a mayor’s term can end in their second or third year due to a recall vote.⁸

Municipalities had a subsidiary role during most of the country’s history. That role changed in early 2002 when the country engaged in a decentralization process. Municipalities received additional competences. Their budgets substantially increased due to higher central government transfers.⁹ Local governments also receive a percentage of corporate tax revenues and royalties from extractive companies operating in their region. This source of revenue increased dramatically in mid 2000s driven by a commodity boom. Due to these resources, municipalities now play a key

⁷The two other levels are regional governments and provincial municipalities. At the time of the last local election, there were 25 regional governments, 196 provinces, and 1,646 district municipalities.

⁸Recalls, which can be initiated by the local population, can take place during the second and third years of the mayor’s term.

⁹The main transfer scheme is the Municipal Compensation Fund (FONCOMUN). This redistributes a percentage of sales tax revenues to local governments. Municipalities can also collect property taxes but cannot alter the tax rate. Moreover, their ability to incur debt is limited.

role in local development, particularly in public investment. Currently, municipalities represent more than 20% of the government budget and around 40% of national public investment.

3.2 Political Parties in Municipal Elections

In Peru, political parties participating in municipal elections are classified according to their geographical scope into national and sub-national parties. The latter can be further split into regional, provincial and district political organizations.¹⁰ National parties can participate in all elections: national, including presidential and parliamentary elections, regional and local. In contrast, sub-national parties can present candidates only in their own locality, i.e., their region, province or district, respectively.

There are differences in entry costs across party types. To be recognized, national parties need to collect a minimum number of voter signatures based on the turnout in the last national election.¹¹ In addition, they must have party committees in at least one third of the country's provinces located in at least two thirds of the country's regions. Sub-national parties also need to obtain voter signatures but the number is significantly smaller, since it is based on the turnout in their jurisdiction.¹² Similarly, they need to establish committees only in the region, province or district in which they operate.

The relative dominance of national parties has changed drastically over time. After the return to democracy in 1980, the political landscape was dominated by three traditional national parties. These were the center-right "Partido Popular Cristiano" (PPC), the centrist "Accion Popular" (AP) and the center-left "Alianza Popular Revolucionaria Americana" (APRA). However, their control of national and local politics started to change in the early 1990s. At that time, the country was undergoing a severe economic and security crisis. The AP and APRA presidencies of the 1980s were not able to contain the threat posed by terrorist organizations Shining Path and MRTA. Moreover, in the last two years of the APRA government, the economy shrunk by around 20%. This situa-

¹⁰The 2003 Law of Political Parties identifies and defines these types but uses a slightly different nomenclature. Organizations with national scope are simply called 'political parties', while organizations with regional or provincial/district scope are called 'regional movements' and 'local political organizations', respectively. For simplicity, we group these last two groups under the banner of sub-national parties. See Table A.1 for a list of national parties and alliances that include national parties.

¹¹The Law of Political Parties set this number at 3% of votes cast, but it has recently been reduced to 1% or around 160,000.

¹²For example, in 2002, parties needed signatures equivalent to 2.5% of turnout.

tion, together with a series of corruption scandals, contributed to a loss of confidence in traditional parties.

New national parties emerged. In most cases, they were the product of a single political leader.¹³ At the regional and local level, sub-national parties started to displace national organizations and are now the dominant force in local politics. For instance, in the early 1980s, almost all mayors belonged to national parties. By 2002, the share of mayors from national parties dropped to around 60%. In the last municipal elections in 2014, that share was only 30%.

4 Method

4.1 Data

The empirical analysis combines several sources of information that relate to electoral results, local policies, economic performance of municipalities, and politician's quality at the local level. Data on electoral results cover four municipal elections in the years 2002, 2006, 2010 and 2014. These data were provided by the National Jury of Elections (JNE) and contain information on electoral population, turnout, candidates' vote share, political party affiliation, and the corresponding political party type (i.e., national, regional, provincial, district or alliance), among other information.¹⁴ We use this information to construct our treatment and running variables.

We use data from annual municipal accounts to obtain information on local policy outcomes, such as local revenue and spending, investment, local tax collection, and budget allocation. The data, provided by the Ministry of Economy and Finance (MEF) include both budgeted and actual expenditures at the account level. It also provides the source of funding for each expenditure. The accounts are prepared by local governments and sent to the MEF for national accounting and auditing. The data span from 1998 to 2015. This means that, for the last electoral cycle, data are only available for the first year of the mayor's mandate. However, our results are robust to the exclusion of this last cycle.

¹³In 1990, Alberto Fujimori was elected president running under his own party. Other important politicians like Javier Perez de Cuellar, who was the runner-up in the 1995 elections, and Alejandro Toledo, who became president in 2001, followed a similar path.

¹⁴We define as sub-national parties political organizations classified by the JNE as having a regional or local (provincial/district) scope. We define an alliance among national parties as a national party. The same holds for alliances among sub-national parties.

We also construct indicators of government performance and accountability. First, we use implementation rates of the public investment budget, i.e., the share of the investment budget actually spent. Second, we use data from the Peruvian Anti-Corruption Office to construct the number of corruption complaints and an indicator of whether a mayor has been accused of corruption.

As measures of politician’s quality, we use several characteristics such as age, education level, and public sector experience. These data come from candidates’ curriculum vitae. The CV information is self-reported but there are sizable penalties for misrepresentation.¹⁵ Data are available for all elections except the 2002 electoral process.¹⁶ We complement this dataset with information on sociodemographic characteristics, such as population, poverty rates, and access to public services from the 2007 Population Census.

Table 1 presents the summary statistics of our main variables.¹⁷ In our sample, the share of national party mayors is around 46%, followed by the regional party mayors with almost 40%. On average, 7 parties take part in each election, the winning margin is around 9%, and turnout is almost 85%. The average mayor is 44 years old and has 6 years of public service. An average municipality implements only 74% of its investment budget, spends 35% of its total budget on administrative duties, 17% on health related expenditures and around 12.5% on education.

4.2 Empirical Strategy

The aim of our empirical analysis is to identify the effect of the ruling party’s geographic scope on local outcomes. The primary identification challenge is that municipalities electing mayors from national parties may be systematically different from municipalities choosing sub-national parties, and vice versa. Such unobserved heterogeneity can potentially confound the naive OLS estimates.

To address this concern, this paper uses a sharp regression discontinuity design (RDD). Following the classic RDD framework in close elections by Lee (2008), we define the running variable as the winning margin WM_{pit} of party type p in municipality i and electoral period t . This variable is equal to the vote share of the most popular candidate of party type p minus the vote share of the most popular candidate of any other party type. By definition, a municipality is treated (i.e., has

¹⁵For example, a candidate can be potentially excluded from the electoral contest.

¹⁶Candidates were only mandated to submit a curriculum vitae from 2006 onward.

¹⁷The sample excludes municipalities in which the election results were nullified and a secondary election had to take place the year after.

Table 1: Summary Statistics

Variables	Nr. Obs.	Mean	S.D.	Min	Max
Mayor is from a national party	6,460	0.462	0.499	0	1
Mayor is from a regional party	6,460	0.398	0.490	0	1
Mayor is from a local party	6,460	0.110	0.313	0	1
Winning margin of a national party candidate	5,926	-1.897	19.66	-97.65	66.32
Winning margin of a regional party candidate	4,997	-0.527	19.27	-64.48	97.65
Winning margin of a local party candidate	2,392	-9.168	18.11	-66.32	57.30
Log of municipal revenue p.c.	6,452	6.707	0.916	4.072	11.26
Log of local tax revenue p.c.	6,452	1.450	1.504	0	8.051
Log of municipal spending p.c.	6,452	6.436	0.858	3.916	10.72
Log of municipal investment p.c.	6,452	5.879	1.094	1.726	10.55
Investment execution rate %	6,452	73.69	16.49	1.027	100
Administrative spending, %	6,451	35.20	13.86	3.561	96.65
Agriculture spending, %	6,451	5.444	8.578	0	85.65
Education spending, %	6,451	12.49	12.03	0	93.30
Health spending, %	6,451	16.84	14.68	0	92.49
Social services spending, %	6,451	10.15	7.875	0.124	82.47
Transportation spending, %	6,451	12.91	11.12	0	89.72
Turnout	6,460	84.56	5.952	17.11	98.81
Number of Parties	6,460	7.217	2.830	2	20
Margin of Victory	6,460	9.197	8.738	0	97.65
Vote Share of National Parties	6,460	48.83	28.00	0	100
Vote Share of Regional Parties	6,460	36.96	30.63	0	100
Vote Share of Local Parties	6,460	9.812	17.81	0	100
Mayor Recalled	4,842	0.182	0.386	0	1
Mayor's Age	4,808	44.34	8.802	21.43	82.50
Mayor Has University Degree	4,792	0.368	0.482	0	1
Mayor Completed Tertiary Education	4,792	0.567	0.495	0	1
Mayor's Years of Public Service	3,198	6.295	8.777	0	65.42
Mayor's Number of Corruption Complaints	1,605	0.719	1.611	0	28
Mayor Has a Sentence	3,198	0.074	0.261	0	1
Human development index, 2003	6,439	0.278	0.095	0.088	0.699
Life expectancy, 2003	6,439	67.41	3.737	53.33	74.01
% with high school diplomas, 2003	6,439	44.65	22.71	0.132	99.93
Average years of education, 2003	6,439	6.024	2.104	1.907	13.94
Family income per capita, 2003	6,439	269.5	137.8	76.45	1219

Notes: Monetary variables, such as revenue or investment per capita, are measured in Nuevos Soles (PEN).

elected a mayor from a party type p) if $WM_{pit} > 0$.

The RD estimand for the effect of having a mayor of party type p is defined as:

$$\tau_p^{RD} = \lim_{WM_{pit} \downarrow 0} E[Y_{it}|WM_{pit} > 0] - \lim_{WM_{pit} \uparrow 0} E[Y_{it}|WM_{pit} < 0] \quad (1)$$

where Y_{it} is the observed outcome. That is, the estimand is the difference in expected outcomes between municipalities in which party type p barely won and municipalities in which party p barely lost. Under the assumption of no precise control of the winning margin by parties of certain type, one can treat the outcomes in close elections as local randomized experiments and, thus, treat τ_p^{RD} as the causal effect of party type p coming to power (Lee and Lemieux, 2010).¹⁸

To estimate τ_p^{RD} , we use local polynomial regressions. We implement this procedure using the robust bias-corrected estimator with a data-driven bandwidth selector proposed by Calonico, Cattaneo and Titiunik (2014a).¹⁹ Following Calonico, Cattaneo and Titiunik (2014b), in all tables, we report the conventional estimates of τ_p^{RD} with conventional standard errors, but present robust bias-corrected p-value levels (per definitions in Calonico, Cattaneo and Titiunik (2014a)).

The validity of the sharp RDD relies on the assumption that the conditional expectation of the outcomes, $E(Y(0)|X)$ and $E(Y(1)|X)$, are continuous in X . This continuity assumption could be violated if mayors had precise control over the vote share they obtain when running for re-election or if there were confounding treatments whose assignment also depended on the same threshold. We examine the validity of this assumption in Appendix A.1 using a conventional test by McCrary (2008) and by checking for balance of covariates. We find that there are no discontinuities in the density of municipalities around the cut-off, implying no manipulation of the votes, and that past realizations of relevant outcomes as well as municipal characteristics are balanced.²⁰

An important concern is that we may find null results due to a lack of statistical power. We address this issue in two ways. First, to increase the precision of our estimates, we include past outcomes as covariates.²¹ Second, we use a novel permutation test proposed by Canay and Kamat

¹⁸In the limit, in case of a tie, election outcome is literally random and is decided by a coin toss. Note that, in our sample, this scenario is very rare. For example, there only 10 cases in which a top national party had the same vote share as the top sub-national party. We account for this technicality by assigning a negligible winning margin of 0.0001. Results are robust to the exclusion of these observations.

¹⁹We apply this estimator using the STATA package *rdrobust*.

²⁰For the case of national versus sub-national parties, we only find a significant difference at the 10% for 1 of 12 variables. However, even this small difference is not confirmed by a permutation test.

²¹The theoretical justification for this exercise can be found in Calonico et al. (2018).

(2018). This test evaluates the continuity of the distribution of a variable at the cut-off using permutations of a fixed, small number of observations. It is more powerful than commonly used tests based on the difference of means. Following [Canay and Kamat \(2018\)](#), we use the rule-of-thumb formula to determine the number of observations taken from both sides of the cut-off and report the corresponding p-values for both separate and joint distributions of outcome variables.

5 Results

5.1 Effects on Policy Outcomes

Table 2 presents the effects of party geographic scope using our preferred non-parametric approach.²² The results in Panel A suggest a negligible effect on budget size. There is no significant effect on per capita municipal revenue, spending, local tax collection or public investment. The coefficients are also small in magnitude. For all measures, the impact of a national-party rule is less than 10% of a standard deviation. A similar pattern is observed when we examine the effect of different types of sub-national parties. Mayors affiliated with regional and local parties also do not produce significant changes in the aforementioned measures (columns 3 and 5). Again, with one exception, the magnitudes tend to be smaller than 0.1 standard deviations.

Given the importance of central government transfers, the lack of effects may be reflecting mayors inability to alter their budget size. To examine this issue, we explore the effect of party geographic scope on investment implementation rates and on budget allocation (including the share of expenditures allocated to administrative duties, education, health, and transport). These are the policy outcomes over which mayors have significant discretion.²³

²² Figure A.2 in the Appendix displays the results using a parametric fit.

²³ Investment implementation rates are used to measure municipal performance under a central government run performance plan for local governments. For examples of academic use of this measure, see [Loayza, Rigolini and Calvo-González \(2014\)](#)).

Table 2: Effect of Party Geographic Scope on Policy Outcomes

	Type of Party in Power						Dep. Var.	
	National		Regional		Local			
	RD Estimate (1)	N (2)	RD Estimate (3)	N (4)	RD Estimate (5)	N (6)	Mean (7)	SD (8)
A. Local Budget Size								
Log of municipal revenue p.c.	0.048 (0.068)	5,919	0.022 (0.072)	4,994	-0.011 (0.110)	2,387	6.707	0.916
Log of local tax revenue p.c.	-0.065 (0.096)	5,919	-0.031 (0.110)	4,994	0.287 (0.199)	2,387	1.450	1.504
Log of municipal spending p.c.	0.050 (0.063)	5,919	0.019 (0.067)	4,994	-0.015 (0.102)	2,387	6.436	0.858
Log of municipal investment p.c.	0.053 (0.076)	5,919	0.049 (0.086)	4,994	-0.027 (0.123)	2,387	5.879	1.094
B. Spending Patterns								
% of investment budget implemented	0.334 (1.135)	5,919	0.340 (1.369)	4,994	-1.205 (1.825)	2,387	73.69	16.49
Administrative spending, %	0.644 (0.947)	5,918	-0.741 (1.148)	4,993	0.345 (1.558)	2,386	35.20	13.86
Agriculture spending, %	0.784 (0.696)	5,918	0.278 (0.807)	4,993	-1.448 (0.880)	2,386	5.444	8.578
Education spending, %	0.155 (0.903)	5,918	0.477 (0.993)	4,993	-0.472 (1.221)	2,386	12.49	12.03
Health spending, %	-0.481 (1.071)	5,918	0.053 (1.226)	4,993	-0.575 (1.322)	2,386	16.84	14.68
Social services spending, %	0.605 (0.564)	5,918	-0.605 (0.552)	4,993	-1.106 (1.030)	2,386	10.15	7.875
Transportation spending, %	-1.374 (0.872)	5,918	0.617 (1.032)	4,993	2.342 (1.392)	2,386	12.91	11.12
Average Standardized Effect (jointly for A and B)	0.055		0.036		0.086			
Average Standardized Effect (jointly for B)	0.058		0.040		0.099			

Notes: * denotes significance at 10%, ** significance at 5% and *** significance at 1%. Standard errors in brackets are calculated using a heteroskedasticity-robust nearest neighbor variance estimator with the minimum number of neighbors equal to three. The table reports conventional RD estimates, calculated based on a 1st order polynomial and no baseline covariates, and significance levels based on robust standard errors following [Calonico, Cattaneo and Titiunik \(2014a\)](#). Column 1 corresponds to the effect of national-party rule versus sub-national party rule. Columns 3 and 5 refer to the effect of regional and local-party rule versus all other parties, respectively. Columns 7 and 8 report the mean and standard deviation for the outcome variable based on all municipality-years in our sample, as in Table 1.

The results are shown in Panel B of Table 2. Again, across all variables of budget allocation, we find small and insignificant effects for all party types. Moreover, the magnitudes of the coefficients remain small.²⁴ For instance, with respect to investment implementation, the coefficient for national-party rule is equivalent to less than 0.02 standard deviations. To further examine the lack of sizable differences, we calculate the average absolute standardized treatment effect for the previous policy measures.²⁵ The results, shown in the lower part of Table 2, are similar to our baseline estimates. The average effects of national- and regional-party rule on the joint measure of outcomes (both for all the outcomes or only in panel B) are quite small, i.e., around 0.03-0.05 standard deviations.

A concern with our analysis is that the lack of statistically significant effects may be due to insufficient statistical power or model mis-specification. We address these concerns by performing a series of additional tests (see Tables A.3-A.6 in Appendix A.3).

First, we assess whether our results hold under different specifications (Columns 1-4 of Tables A.3-A.6). We show that the results are robust to changes in the order of the local regression polynomial, and the inclusion of additional covariates, such as lagged values of the outcome variable, human development index, life expectancy, schooling, and household income. This last check is particularly important because, as suggested by Calonico et al. (2018) and Lee and Lemieux (2010), inclusion of relevant covariates can substantially reduce the variance of the RD estimator and, thus, address concerns of low statistical power. In our case, adding these additional covariates indeed reduces standard errors (by almost 50% in some cases) but the effects remain statistically insignificant.

Second, we evaluate the statistical significance of the impact of party geographic scope using a novel permutation test proposed by Canay and Kamat (2018) (column 5). This test evaluates the null hypothesis of no significant discontinuity in the outcome distribution, and is more powerful than the mean comparison tests. Our results, however, remain similar using this alternative test.

Finally, we narrow the definition of a national-party to include only large political parties. This responds to concerns that our baseline definition of a national party may be too broad and include

²⁴The only exception is the negative effect of ruling national parties on transportation spending which becomes statistically significant in other specifications (see Table A.3).

²⁵This is obtained by averaging the absolute value of each individual treatment effect divided by the standard deviation of its respective outcome variable.

organizations that, in practice, have a more local scope.²⁶ This would bias our estimates towards zero. To examine this explanation, we replicate our baseline analysis focusing on “traditional” national parties, i.e., large national parties with a long history in Peruvian politics. These parties include the “Partido Popular Cristiano” (PPC), “Accion Popular” (AP), “Alianza Popular Revolucionaria Americana” (APRA), and “Unidad Nacional”, an electoral coalition of the PPC and other right-wing parties.²⁷ The results, shown in Table A.6, are similar to our baseline findings.

Overall, the results do not support the concern that denationalization of local politics would lead to poor governance due to low quality performance of sub-national parties. In fact, these first micro-level causal estimates suggest that party geographic scope has no effect on local outcomes in the context of a country with highly decentralized municipal government.

5.2 Effect on Politician Attributes and Political Accountability

One of the arguments in favor of parties with greater geographical scope is that they provide stronger career incentives and face higher reputation costs. These features could give them an advantage over smaller parties to improve politician selection and accountability (Gibson, 2005; Enikolopov and Zhuravskaya, 2007).

We examine these potential effects of party geographic scope using indicators of politicians’ characteristics, such as age, education, experience, and the presence of a pre-term judicial sentence.²⁸ As measures of accountability, we use the number of corruption complaints filed against mayors in the 2011-2014 electoral term.²⁹ In addition, we analyze the effect on whether the mayor is recalled before the term ends, as recall voting is a commonly used accountability mechanism in Peru.

Unlike the results for policy outcomes, we document several statistically and economically significant effects of party geographic scope on mayors’ attributes (Panel A in Table 3). First, a national-party win leads to more experienced local mayors. Specifically, they are about 1.3 years

²⁶For example, it is possible that a party collects signatures from various regions and registers itself as a national party in order to run candidates at the national level. However, it might draw most of its support from a specific region.

²⁷In the period of analysis, these obtained around 20% of all mayoral positions.

²⁸Other characteristics are not particularly relevant in this setting. For example, gender is not a relevant dimension as more than 90% of mayors are men. For other characteristics, information is not available. For example, there is no reliable information on the specific work position the candidate held in a firm or public institution.

²⁹Data for previous terms are not available as the information was collected as part of a recent effort to compile cases filed at decentralized offices.

older and have 2.8 more years of public service than their sub-national counterparts. However, the level of education attainment is similar.

Second, the quality of local-party mayors tends to be quite low. A local party win leads to substantially older mayors - about 4 years older, on average. However, their higher age does not translate into greater public sector experience. Moreover, they are 21.7% less likely to have completed tertiary education and 17.8% more likely to have a pre-election judicial sentence, though this last effect is not statistically significant.

Finally, the effect of regional-party rule is mixed. On the one hand, a regional party victory leads to mayors being 2.5 years younger and having 2.1 fewer years of public sector experience relative to their counterparts. On the other hand, a regional-party win leads to mayors that are 10% more likely to have completed tertiary education and 5.8% less likely to have a judicial sentence. Therefore, regional parties appear to elect better candidates relative to their local rivals, but their comparison to national parties is less clear.³⁰

Regarding political accountability, we find no significant effects of party geographic scope (panel B in Table 3). There is some evidence that regional-party mayors may lead to fewer corruption complaints, although this result is not robust.

These above results cast doubt on the claim that national parties provide greater accountability, but suggest that there might be some differences in effects on politician quality. In particular, national and regional party wins lead to more experienced mayors relative to local parties. These differences in attributes, however, do not translate into different policy outcomes. What could explain this insignificant result? We examine a possible explanation in the next subsection.

³⁰Note that these differences in politician selection are part of the national-party rule treatment. Our identification assumption is that municipalities on both sides of the treatment cut-off have similar characteristics, not that parties of different geographic scope select similar politicians.

Table 3: Effect of Party Geographic Scope on Political Selection and Accountability

	Type of Party in Power						Dep. Var.	
	National		Regional		Local			
	RD Estimate (1)	N (2)	RD Estimate (3)	N (4)	RD Estimate (5)	N (6)	Mean (7)	SD (8)
A. Politician Selection								
Mayor's Age	1.279* (0.751)	4,354	-2.465*** (0.826)	4,102	4.026** (1.864)	1,071	44.34	8.802
Mayor Completed Tertiary Education	-0.052 (0.044)	4,339	0.100** (0.048)	4,087	-0.217* (0.119)	1,063	0.567	0.495
Mayor's Years of Public Service	2.788** (1.147)	2,858	-2.080** (1.092)	2,794	-0.226 (2.305)	537	6.295	8.777
Mayor Has a Sentence	0.023 (0.030)	2,858	-0.058** (0.030)	2,794	0.178 (0.110)	537	0.074	0.261
B. Accountability								
Mayor's Number of Corruption Complaints	0.102 (0.215)	1,479	-0.407* (0.248)	1,435	0.763 (0.617)	319	0.719	1.611
Mayor Recalled	-0.044 (0.034)	4,527	0.043 (0.038)	3,617	0.013 (0.050)	2,173	0.182	0.386
C. Political Landscape and Voting Behavior								
Vote Share of National Parties in the Next Election	-8.082*** (2.249)	4,441	9.354*** (2.734)	3,548	-2.171 (3.313)	2,168	44.69	28.47
Vote Share of Regional Parties in the Next Election	9.187*** (2.410)	4,441	-8.563*** (2.690)	3,548	-1.404 (2.940)	2,168	46.45	29.60
Vote Share of Local Parties in the Next Election	-1.567 (1.120)	4,441	-0.466 (1.083)	3,548	2.246 (2.794)	2,168	5.065	13.44
Turnout in the Next Election	-0.126 (0.436)	4,441	-0.228 (0.468)	3,548	0.382 (0.525)	2,168	85.80	4.792
Number of Parties in the Next Election	-0.082 (0.245)	4,441	-0.417 (0.234)	3,548	0.619 (0.420)	2,168	6.923	2.733

Notes: * denotes significance at 10%, ** significance at 5% and *** significance at 1%. Standard errors in brackets are calculated using a heteroskedasticity-robust nearest neighbor variance estimator with the minimum number of neighbors equal to three. The table reports conventional RD estimates, calculated based on a 1st order polynomial and no baseline covariates, and significance levels based on robust standard errors following [Calonico, Cattaneo and Titiunik \(2014a\)](#). Column 1 corresponds to the effect of national-party rule versus sub-national party rule. Columns 3 and 5 refer to the effect of regional and local-party rule versus all other parties, respectively. Columns 7 and 8 report the mean and standard deviation for the outcome variable based on all municipality-years in our sample, as in Table 1.

5.3 Effect on Political Competition

A victory by a sub-national party may change voter behavior in subsequent elections. Panel C of Table 3 presents the effects of party geographic scope on the local political landscape. We observe that there are no significant effects on turnout and number of parties in the next local election. However, a national-party victory in the current election has a *negative* and highly statistically significant effect of more than 8 p.p. on the total vote share of national parties in the following election. Those votes migrate to regional parties whose vote share *increases* by more than 9 p.p. These changes are meaningful as these are almost equivalent to the average margin of victory in local elections. The corollary of this result is the effect of a regional-party victory on future vote shares. When a regional party wins the current election, the future vote share of national parties increases by 9.3 p.p. while that of regional parties decreases by 8.6 p.p. No significant variations are observed in the vote share of local parties.

This voting pattern motivates an analysis on whether strong political competition between national and regional parties smooths the differences in mayoral attributes, observed in Section 5.2, leads to policy convergence, documented in Section 5.1. To provide suggestive evidence on this explanation, we divide the sample into two parts based on the commonly used indicators of political competition, and carry out an RD analysis in each sub-sample. We first split the sample depending on whether the average municipal margin of victory across the 2002-2014 period is above or below the median.³¹ We then do the same for the effective number of parties, i.e. the inverse of the Herfindahl–Hirschman Index for party vote shares. To focus on the comparison between national and regional parties, we use the winning margin between national and regional parties as a running variable and restrict the analysis to marginal elections between these party types (for details, see Section A.2 of the Appendix).

The results are shown in Table 4. Our findings suggest that political competition may indeed be driving our null results on economic policy. We find that, in municipalities with levels of political competition above the median, national-party mayors tend to behave surprisingly similar to their regional-party counterparts. For instance, with the exception of local tax revenue, the effects of national-party rule on budget size indicators are less than 3% of a standard deviation. Relatively

³¹Note that we are using the margin of victory and not the difference between the highest voted national party and the highest voted regional or local party. In addition, note that there can be close elections between national and regional parties in districts which, on average, are not very competitive.

small effects are also observed for measures of budget allocation. The average absolute standardized treatment effect for all outcomes is between 5.3% and 5.8% of a standard deviation. To check the relative magnitude of these effects, we carry out a simulation exercise in which we randomly split the sample in half 1000 times and compute the same statistic in the corresponding sub-samples. The average absolute standardized treatment effect for highly competitive municipalities falls in the bottom 20% of the simulated distribution.

The above results contrast with those in municipalities with low average levels of political competition. For example, in Columns (1) and (3) 15 out of 22 estimates exceed 10% of a standard deviation, which contrasts to the only 3 out of 22 estimates which satisfy this restriction in high competition municipalities. The average absolute standardized treatment effect in these municipalities was found to be between 12.6% and 14.3% of a standard deviation. These values are in top 10% and top 5% of the simulated distribution, respectively.

In addition, the results in Panel C of Table 4 provide suggestive evidence that the heterogeneous effects can be related to the voting pattern. In particular, we find that, in highly competitive municipalities, the drop in the total future vote share of national parties after a national-party victory is between 13.7 p.p. and 16 p.p. On the other hand, in low competition municipalities, the switching pattern is either less pronounced or disappears entirely, depending on the indicator of political competition.

We interpret these findings as suggestive evidence that political competition plays an important role in explaining the lack of stronger effects of party geographic scope. The results suggest that the recent proliferation of sub-national parties may not have the anticipated detrimental effect on local governance. Instead, potential differences across parties of different geographic scope may be smoothed by high levels of political competition and the electoral incentives offered by voters in those contexts.³²

³²Alternative explanations can also play a role. For example, it could be that there are no major differences in relevant unobservable politician characteristics or preferences. However, the magnitude of the differences between high and low politically competitive municipalities point to political competition being one of the main drivers of the results.

Table 4: Effects of National vs Regional Party Rule by Degree of Political Competition

	1 = National Party is in Power; 0 = Regional Party is in Power			
	Mean margin of victory greater than median	Mean margin of victory lower than median	Mean effective # of parties lower than median	Mean effective # of parties greater than median
	(1)	(2)	(3)	(4)
A. Local Budget Size				
Log of municipal revenue p.c.	-0.145 (0.151)	0.006 (0.102)	-0.079 (0.132)	0.021 (0.109)
Log of local tax revenue p.c.	-0.024 (0.177)	0.117 (0.154)	-0.186 (0.160)	0.173 (0.169)
Log of municipal spending p.c.	-0.098 (0.142)	0.013 (0.094)	-0.055 (0.125)	0.024 (0.101)
Log of municipal investment p.c.	-0.153 (0.180)	0.007 (0.118)	-0.097 (0.152)	0.014 (0.131)
B. Spending Patterns				
% of investment budget implemented	2.126 (2.528)	-0.257 (1.872)	2.175 (2.204)	-0.543 (1.925)
Administrative spending, %	1.810 (2.199)	0.876 (1.724)	3.050 (2.128)	0.600 (1.665)
Agriculture spending, %	1.368 (1.486)	-0.152 (1.192)	-0.155 (1.425)	0.840 (1.175)
Education spending, %	-0.868 (1.988)	-0.904 (1.338)	-0.046 (1.831)	-1.604 (1.594)
Health spending, %	-3.374 (2.337)	0.837 (1.533)	-2.345 (2.010)	0.769 (1.726)
Social services spending, %	1.877* (1.068)	1.285 (1.007)	1.311 (0.948)	0.497 (1.101)
Transportation spending, %	-1.557 (1.677)	-0.944 (1.427)	-3.532* (2.060)	0.234 (1.539)
C. Electoral Punishment				
Vote Share of National Parties in the Next Election	0.278 (4.693)	-16.004*** (3.431)	-7.507* (3.998)	-13.784*** (3.646)
Vote Share of Regional Parties in the Next Election	1.146 (4.427)	12.734*** (3.107)	7.874* (4.201)	11.485*** (3.777)
Average Standardized Effect (jointly for vars in A and B)	0.143	0.053	0.126	0.058
Simulation p-value (1,000 Random Splits)	0.033	0.932	0.078	0.879
Average Standardized Effect (jointly for vars in B)	0.156	0.067	0.140	0.063
Simulation p-value (1,000 Random Splits)	0.016	0.809	0.055	0.845
Observations	2,443	2,523	2,422	2,544

Notes: * denotes significance at 10%, ** significance at 5% and *** significance at 1%. Standard errors in brackets are calculated using a heteroskedasticity-robust nearest neighbor variance estimator with the minimum number of neighbors equal to three. Each cell contains an RD estimate obtained by using the margin between national and regional parties as a running variable and excluding all elections for which a top local party gained more votes than the top national party or the top regional party. The table reports these RD estimates, calculated based on a 1st order polynomial and no baseline covariates, and significance levels based on robust standard errors following [Calonico, Cattaneo and Titiunik \(2014a\)](#).

6 Conclusion

This paper provides the first causal estimates of whether the geographic scope of a ruling party matters for local government outcomes. We use the case of Peruvian district municipalities and a quasi-experimental regression discontinuity design.

Our main finding is that party geographic scope does not have a significant effect on measures of local budget size and its allocation. In addition, we find that there is no heterogeneity in this null result across sub-national party types. These results are robust to several empirical concerns, and do not seem to be driven by low statistical power or model mis-specification. In addition, we find that there are no sizable effects on political accountability while the evidence of the effects on politician's experience and education is mixed.

We find suggestive evidence that our results may reflect policy convergence due to political competition. We show that in highly competitive municipalities, national and regional-party mayors behave in a similar manner. In those areas, voter switching across elections is strong. On the contrary, in low competition municipalities, the difference in outcomes between the two party types is substantial and the switching voting pattern is weaker or disappears altogether.

Our results suggest that national-party rule need not lead to different outcomes. These challenge the view that the displacement of national parties, fueled in part by decentralization reforms, is detrimental for local governance, and weaken the economic case for subsidizing national parties. These subsidies are usually justified by the belief that national parties may lead to better policies and governance. Our findings suggest that such benefits might only exist in jurisdictions with low levels of political competition.

Admittedly, there are some caveats when interpreting our results. First, our analysis focuses on the geographic dimension of party attributes and does not necessarily imply that parties with strong capabilities have a weak impact on governance. Second, this study uses a developing country context and the effects may be different in developed countries. Finally, our estimates are not informative of the effect of national-party rule on central government outcomes, long-term variables, or on unobserved aspects of local policies.

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Online Appendix

A.1 RDD diagnostics

Following [Lee and Lemieux \(2010\)](#), we check the validity of the RD design in two ways. First, we perform a conventional [McCrary \(2008\)](#) test to look for discontinuities in the density of the running variable around the cut-off. This could be indicative of vote manipulation or electoral fraud.³³ Second, we explore the effect of party geographic scope on pseudo outcomes which should not be affected by the treatment.

Figure [A.1](#) presents the results of the [McCrary \(2008\)](#) test. There are no substantial jumps in the density for neither party type and the differences are not significant.³⁴ The results concur with the lack of qualitative evidence on electoral fraud. For instance, only 70 incidents were reported during the 2009 municipal elections for over 1,800 municipalities.³⁵ There is no indication that either incident was directly related to a particular party type.

Table [A.2](#) displays the effects of party geographic scope on placebo outcomes. In particular, we focus on lagged values of our main outcomes and local socio-economic characteristics. Consistent with a valid identification assumption, we observe a smooth relation between almost all pseudo outcomes and the assignment variables for all party types. Only 2 out of 36 estimates are significant at the 10% level and none at the 5% level. Moreover, the permutation test by [Canay and Kamat \(2018\)](#) does not reject the hypothesis that the outcomes are jointly continuous around the winning margin threshold, except for 2 out of 36 outcomes.

Taken together, the above results suggest that the central identifying assumption of the RDD holds in our setting.

³³For instance, while studying US House Elections from 1926 to 1996, [Snyder \(2005\)](#) find that incumbents were systematically more likely to be on the winning side of the cut-off in close races. Similarly, [Enikolopov et al. \(2013\)](#) document non-trivial amount of electoral fraud in Russian parliamentary elections in favor of the incumbent party.

³⁴Additionally, we ran the [McCrary \(2008\)](#) test for 200 placebo cut-offs from -50% to +50% with 0.5% increments excluding zero. Using this method, we show that the t-stats found for the true 0% cut-off are not large relative to the placebo distribution of possible coefficients, confirming results of the conventional [McCrary \(2008\)](#) method.

³⁵<http://archive.peruthisweek.com/news-10778-politics-election-fraud-reported-peru>

A.2 Pairwise Comparison of National and Regional Parties

One potential drawback of our baseline approach is that it compares one party type to the rest and does not allow for a comparison only between two party types simultaneously. For instance, we may ask whether the effect of national-party mayors on some outcome is driven primarily by close elections between national and regional or between national and local parties. Similarly, it could be that a lack of effects masks substantial heterogeneity across multiple pairs of party types.

In our main analysis, we address this issue by reporting three sets of results: national party mayors versus the rest, regional party mayors versus the rest, and local party mayors versus the rest. If party type p_1 is better than party type p_2 and worse than p_3 according to some outcome, then, by transitivity, this difference in performance will likely be revealed in the sets of results for the party types p_2 and p_3 . Conversely, if all three sets of results show no significant or economically meaningful differences, then it is unlikely that they are present in pairwise comparisons between party types. For the political competition analysis, we also adopt an alternative method of comparing national and regional parties pairwise which we describe below.

Define a winning margin between the most voted party of type p and the most voted party of type j in municipality i during election t as WM_{pjit} . Thus, a mayor of party type p wins a given election if and only if $WM_{pjit} > 0$ for all $j \neq p$.³⁶ For a given party type p , we estimate:

$$\tau_{pj}^{RD} = \lim_{WM_{pjit} \downarrow 0} E[Y_{it} | WM_{pjit} > 0, WM_{jk it} > 0] - \lim_{WM_{pjit} \uparrow 0} E[Y_{it} | WM_{pjit} < 0, WM_{pk it} > 0], \forall k \neq p, j \quad (2)$$

Under this set-up, we will identify the effect of having a mayor of party type p over one of party type j in municipalities where the two most voted party types are p and j . Insofar as the standard regression discontinuity design assumptions hold along this dimension, τ_{pj}^{RD} will estimate a causal impact of electing a mayor of party type p relative to electing a mayor of party type j .

Note that this set-up is akin to the regression discontinuity design with multiple forcing variables (Imbens and Zajonc, 2011; Wong, Steiner and Cook, 2013) in which treatment is assigned whenever two variables jointly cross a certain threshold. As shown by Wong, Steiner and Cook (2013), equation (1) then identifies a weighted sum of two effects: the effect of party type p_1 win-

³⁶Note that this object is different from WM_{pit} defined above as it compares vote shares of different party types in a pairwise manner. In fact, $WM_{pit} = \min\{WM_{pjit}\}, \forall j \neq p$.

ning against party type p_2 and the effect of party type p_1 winning against p_3 .³⁷ In the case of national parties, it consists of a weighted average of the effect in marginal elections between national and regional parties and that in marginal elections between national and local parties. Thus, our approach in Equation 2 is similar to the approach in [Wong, Steiner and Cook \(2013\)](#) which focuses only on one of the running variables.

³⁷Note that the estimation procedure in Section 4 collapses a two-dimensional RDD into one dimension by defining $WM_{pit} = \min\{WM_{pjt}\}, \forall j \neq p$. This approach is identical to the centering approach of analyzing a regression discontinuity with multiple forcing variables described in [Wong, Steiner and Cook \(2013\)](#) and used, for example, by [Hinnerich and Pettersson-Lidbom \(2014\)](#).

A.3 Additional Tables and Figures

Table A.1: List of National Parties and Alliances of National Parties with at least One Mayoral Victory

Nr.	Name of National Party or Alliance of National Parties	Nr of Mayors
1	ACCION POPULAR	329
2	AGRUPACION INDEPENDIENTE SI CUMPLE	20
3	AGRUPACION INDEPENDIENTE UNION POR EL..	35
4	ALIANZA ELECTORAL UNIDAD NACIONAL	203
5	ALIANZA ELECTORAL VAMOS VECINO	4
6	ALIANZA PARA EL PROGRESO	262
7	ALIANZA PERU POSIBLE	3
8	ALIANZA POPULAR	4
9	ALIANZA REGIONAL ANCASH	17
10	CAMBIO RADICAL	7
11	CON FUERZA PERU	6
12	COORDINADORA NACIONAL DE INDEPENDIENTES	3
13	DEMOCRACIA DIRECTA	15
14	DESPERTAR NACIONAL	1
15	EL FRENTE AMPLIO POR JUSTICIA, VIDA Y LIBERTAD	2
16	FONAVISTAS DEL PERU	2
17	FRENTE AMPLIO REGIONAL	12
18	FRENTE INDEPENDIENTE MORALIZADOR	21
19	FRENTE POPULAR AGRICOLA FIA DEL PERU	4
20	FRENTE POPULAR DEMOCRATICO	2
21	FUERZA 2011	52
22	FUERZA DEMOCRATICA	86
23	FUERZA NACIONAL	2
24	FUERZA POPULAR	75
25	MOVIMIENTO AMPLIO PAIS UNIDO - MAPU	5
26	MOVIMIENTO NUEVA IZQUIERDA	46
27	PARTIDO APRISTA PERUANO	606
28	PARTIDO DEMOCRATICO SOMOS PERU	324
29	PARTIDO HUMANISTA PERUANO	17
30	PARTIDO JUSTICIA NACIONAL	1
31	PARTIDO MOVIMIENTO HUMANISTA PERUANO	1
32	PARTIDO NACIONALISTA PERUANO	76
33	PARTIDO POLITICO NACIONAL PRIMERO PERU	14
34	PARTIDO POPULAR CRISTIANO - PPC	14
35	PARTIDO POPULAR CRISTIANO - PPC - UNIDAD NACIONAL	30
36	PARTIDO POR LA DEMOCRACIA SOCIAL - COMPROMISO PERU	1
37	PARTIDO RECONSTRUCCION DEMOCRATICA	15
38	PARTIDO RENACIMIENTO ANDINO	37
39	PARTIDO SOCIALISTA	9
40	PERU PATRIA SEGURA	4
41	PERU POSIBLE	250
42	PROGRESEMOS PERU	2
43	RENOVACION NACIONAL	1
44	RESTAURACION NACIONAL	86
45	RESURGIMIENTO PERUANO	1
46	SIEMPRE UNIDOS	47
47	SOLIDARIDAD NACIONAL	25
48	TODOS POR EL PERU	1
49	UNION POR EL PERU	201
50	VAMOS PERU	6

Figure A.1: Estimated Density Function of Assignment Variables.

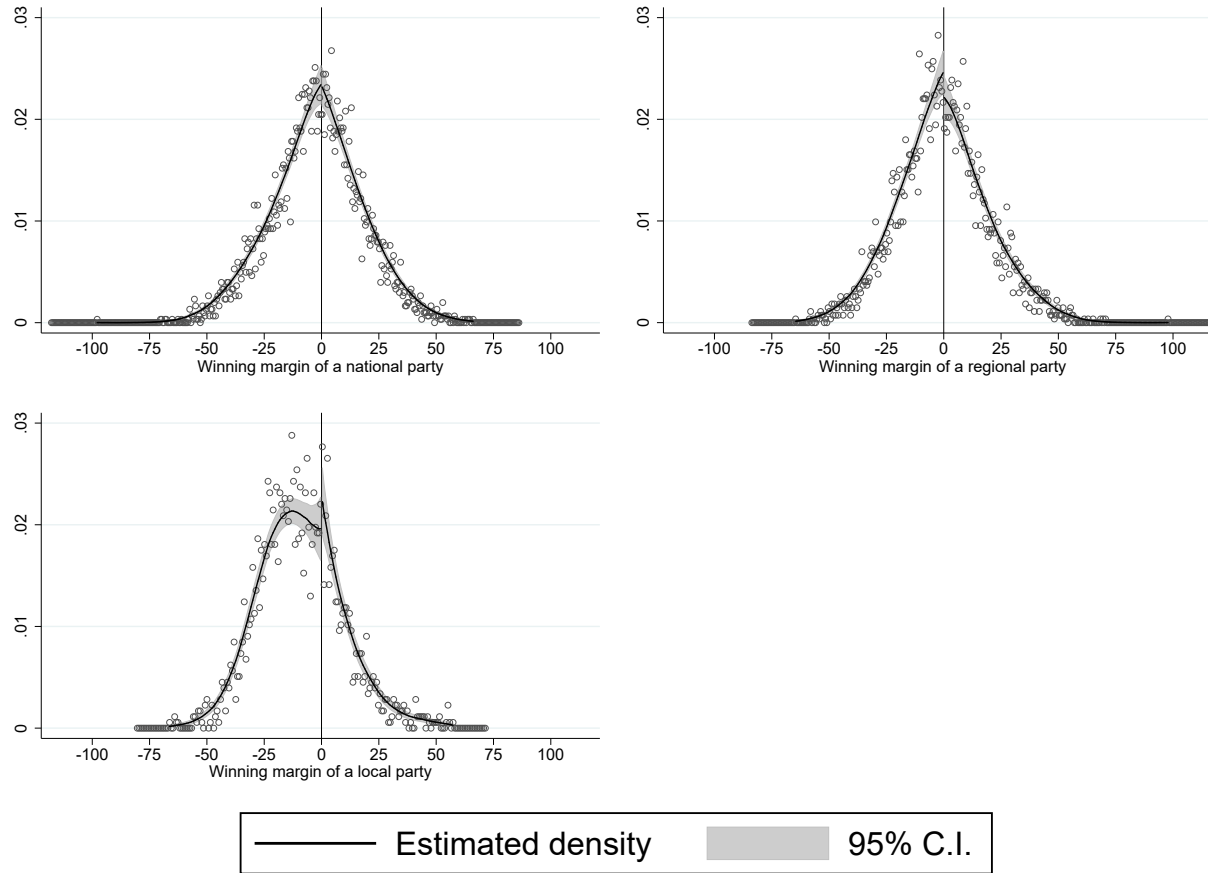


Figure A.2: Relationship between National Party Rule and Indicators of Government Size.

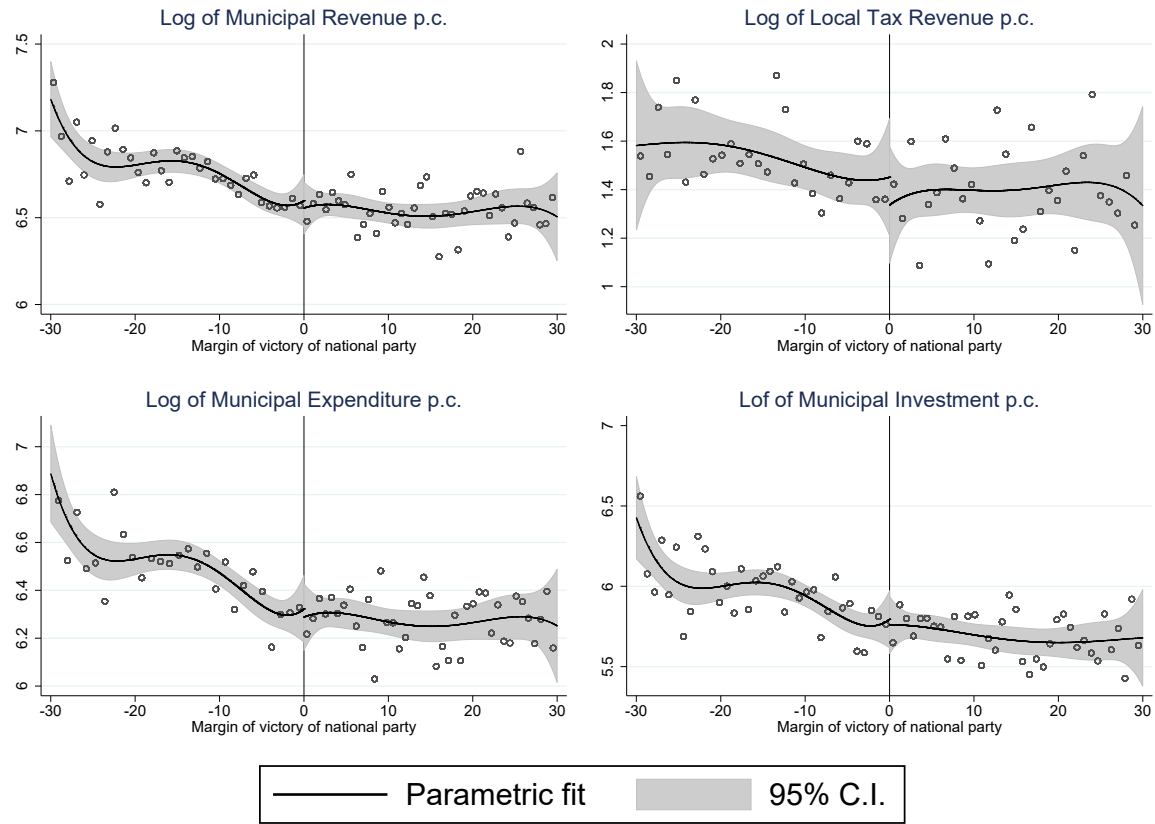


Table A.2: Balance on Covariates and Falsification Tests

	Type of Party in Power							
	National Party Rule		Regional Party Rule		Local Party Rule		Dep. Var.	
	RD	Permutation	RD	Permutation	RD	Permutation	Mean	SD
	Estimate (1)	p-value (2)	Estimate (3)	p-value (4)	Estimate (5)	p-value (6)	(7)	(8)
A. Economic Development								
Human development index, 2003	-0.009 (0.007)	0.656	0.002 (0.007)	0.664	0.007 (0.013)	0.793	0.278	0.095
Life expectancy, 2003	-0.105 (0.280)	0.967	-0.012 (0.310)	0.903	-0.337 (0.488)	0.908	67.41	3.737
% with high school diplomas, 2003	-2.004 (1.539)	0.397	0.409 (1.812)	0.484	2.728 (3.018)	0.382	44.65	22.71
Years of education, 2003	-0.202 (0.157)	0.140	0.015 (0.165)	0.740	0.245 (0.290)	0.307	6.024	2.104
Family income per capita, 2003	-9.595 (9.617)	0.680	1.592 (9.168)	0.367	3.075 (17.235)	0.893	269.5	137.8
H_0 : Outcomes are Jointly Balanced		0.782		0.665		0.665		
B. Public Finance								
Log of municipal revenue p.c. in t-1	0.086 (0.079)	0.796	-0.006 (0.077)	0.714	0.006 (0.113)	0.561	6.100	1.095
Log of local tax revenue p.c. in t-1	-0.166* (0.096)	0.684	0.037 (0.103)	0.921	0.204 (0.180)	0.969	1.347	1.366
Log of municipal spending p.c. in t-1	0.082 (0.073)	1.000	-0.014 (0.071)	0.512	0.025 (0.105)	0.835	5.870	1.029
Log of municipal investment p.c. in t-1	0.131 (0.089)	0.676	-0.044 (0.087)	0.861	0.030 (0.125)	0.657	5.271	1.247
H_0 : Outcomes are Jointly Balanced		0.657		0.539		0.411		
C. Electoral system								
Turnout in t	-0.206 (0.462)	0.889	0.475 (0.473)	0.775	0.265 (0.767)	0.695	84.56	5.952
Number of Parties in t	-0.286 (0.211)	0.774	-0.094 (0.219)	0.026	0.706* (0.391)	0.051	7.217	2.830
HHI of Parties in t	50.479 (54.898)	0.852	58.917 (63.715)	0.159	-117.47 (95.70)	0.426	2421	882.5
H_0 : Outcomes are Jointly Balanced		0.936		0.104		0.116		

Notes: * denotes significance at 10%, ** significance at 5% and *** significance at 1%. Standard errors in brackets are calculated using a heteroskedasticity-robust nearest neighbor variance estimator with the minimum number of neighbors equal to three. Columns 1, 3, 5, and 7 report conventional RD estimates calculated based on a 1st order polynomial and no baseline covariates, with significance levels based on robust standard errors following [Calonico, Cattaneo and Titiunik \(2014a\)](#). Column 1 corresponds to the effect of national-party rule versus sub-national party rule. Columns 3 and 7 refer to the effect of regional and local-party rule versus all other parties, respectively. Columns 2, 4, and 6 display the p-values for the [Canay and Kamat \(2018\)](#) permutation test which evaluates whether the distribution of an outcome (or several outcomes jointly) changes around the threshold. Columns 8 and 9 report the mean and standard deviation for the outcome variable based on all municipality-years in our sample, as in Table 1.

Table A.3: Effect of National-Party Rule on Government Outcomes under Different Specifications

	RD Estimates				Permutation p-value (5)	Observations		Dep. Var.	
	(1)	(2)	(3)	(4)		Total (6)	Effective (7)	Mean (8)	SD (9)
Polynomial order	1st	2nd	1st	2nd		1st	1st		
Baseline Covariates	No	No	Yes	Yes		No	No		
A. Local Budget Size									
Log of municipal revenue p.c.	0.048 (0.068)	0.051 (0.082)	-0.012 (0.036)	-0.002 (0.045)	0.820	5,919	3,285	6.707	0.916
Log of local tax revenue p.c.	-0.065 (0.096)	-0.104 (0.133)	0.076 (0.051)	0.088 (0.058)	0.762	5,919	3,571	1.450	1.504
Log of municipal spending p.c.	0.050 (0.063)	0.045 (0.077)	-0.007 (0.032)	0.001 (0.041)	0.483	5,919	3,246	6.436	0.858
Log of municipal investment p.c.	0.053 (0.076)	0.058 (0.090)	-0.025 (0.045)	-0.026 (0.061)	0.466	5,919	3,411	5.879	1.094
B. Spending Patterns									
% of investment budget implemented	0.334 (1.135)	0.243 (1.388)	0.183 (1.147)	0.237 (1.724)	0.947	5,919	3,651	73.69	16.49
Administrative spending, %	0.644 (0.947)	0.670 (1.180)	1.209 (0.910)	1.412 (1.167)	0.998	5,918	3,457	35.20	13.86
Agriculture spending, %	0.784 (0.696)	0.702 (0.844)	0.678 (0.641)	0.563 (0.790)	0.967	5,918	3,221	5.444	8.578
Education spending, %	0.155 (0.903)	0.628 (1.196)	0.150 (0.878)	0.496 (1.085)	0.992	5,918	2,885	12.49	12.03
Health spending, %	-0.481 (1.071)	-0.481 (1.274)	-0.745 (1.035)	-1.026 (1.272)	0.800	5,918	2,925	16.84	14.68
Social services spending, %	0.605 (0.564)	0.717 (0.683)	0.340 (0.528)	0.386 (0.649)	0.244	5,918	3,687	10.15	7.875
Transportation spending, %	-1.374 (0.872)	-1.490 (1.077)	-1.749* (0.836)	-1.894* (1.019)	0.405	5,918	3,109	12.91	11.12
Average Standardized Effect (jointly for A and B)	0.055	0.062	0.049	0.054					
Average Standardized Effect (jointly for B)	0.058	0.065	0.063	0.073					

Notes: * denotes significance at 10%, ** significance at 5% and *** significance at 1%. Standard errors in brackets are calculated using a heteroskedasticity-robust nearest neighbor variance estimator with the minimum number of neighbors equal to three. Significance levels are calculated based on robust standard errors following [Calonico, Cattaneo and Titiunik \(2014a\)](#). Column 1 corresponds to the effect of national-party rule under our baseline specification. Column 2 to 4 report conventional RD estimates under a 2nd order polynomial with no covariates, a 1st order polynomial with covariates and a 2nd order polynomial with covariates, respectively. Covariates include past value of the outcome, as well as 2003 values of human development index, life expectancy, % with high school diplomas, average years of education, and household income per capita. Column 5 presents the p-value from the permutation test as in [Canay and Kamat \(2018\)](#), with a null hypothesis of no discontinuous change in the outcome distribution around the cut-off. Column 7 displays the number of observations chosen by the bandwidth-selection algorithm in Column 1. Columns 8 and 9 report the mean and standard deviation for the outcome variable based on all municipality-years in our sample, as in [Table 1](#).

Table A.4: Effect of Regional-Party Rule on Government Outcomes under Different Specifications

	RD Estimates				Permutation p-value (5)	Observations		Dep. Var.	
	(1)	(2)	(3)	(4)		Total (6)	Effective (7)	Mean (8)	SD (9)
Polynomial order	1st	2nd	1st	2nd		1st	1st		
Baseline Covariates	No	No	Yes	Yes		No	No		
A. Local Budget Size									
Log of municipal revenue p.c.	0.022 (0.072)	0.051 (0.099)	0.020 (0.046)	0.023 (0.054)	0.628	4,994	2,729	6.707	0.916
Log of local tax revenue p.c.	-0.031 (0.110)	-0.071 (0.135)	-0.070 (0.050)	-0.091 (0.060)	0.960	4,994	2,625	1.450	1.504
Log of municipal spending p.c.	0.019 (0.067)	0.056 (0.093)	0.020 (0.042)	0.027 (0.051)	0.647	4,994	2,739	6.436	0.858
Log of municipal investment p.c.	0.049 (0.086)	0.097 (0.115)	0.063 (0.060)	0.082 (0.075)	0.478	4,994	2,633	5.879	1.094
B. Spending Patterns									
% of investment budget implemented	0.340 (1.369)	0.580 (1.640)	0.631 (1.324)	1.066 (1.931)	0.854	4,994	2,856	73.69	16.49
Administrative spending, %	-0.741 (1.148)	-0.070 (1.595)	-1.267 (1.063)	-1.047 (1.384)	0.990	4,993	2,782	35.20	13.86
Agriculture spending, %	0.278 (0.807)	0.779 (1.167)	0.092 (0.762)	0.466 (1.046)	0.395	4,993	3,052	5.444	8.578
Education spending, %	0.477 (0.993)	-0.372 (1.407)	0.246 (1.013)	-0.454 (1.324)	0.358	4,993	2,735	12.49	12.03
Health spending, %	0.053 (1.226)	0.049 (1.519)	0.260 (1.184)	0.273 (1.469)	0.692	4,993	2,664	16.84	14.68
Social services spending, %	-0.605 (0.552)	-2.073** (0.892)	-0.303 (0.509)	-0.882 (0.729)	0.146	4,993	3,250	10.15	7.875
Transportation spending, %	0.617 (1.032)	0.884 (1.321)	0.801 (0.976)	0.955 (1.225)	0.553	4,993	2,575	12.91	11.12
Average Standardized Effect (jointly for A and B)	0.036	0.069	0.040	0.058					
Average Standardized Effect (jointly for B)	0.040	0.073	0.041	0.064					

Notes: * denotes significance at 10%, ** significance at 5% and *** significance at 1%. Standard errors in brackets are calculated using a heteroskedasticity-robust nearest neighbor variance estimator with the minimum number of neighbors equal to three. Significance levels are calculated based on robust standard errors following [Calonico, Cattaneo and Titiunik \(2014a\)](#). Column 1 corresponds to the effect of regional-party rule under our baseline specification. Column 2 to 4 report conventional RD estimates under a 2nd order polynomial with no covariates, a 1st order polynomial with covariates and a 2nd order polynomial with covariates, respectively. Covariates include past value of the outcome, as well as 2003 values of human development index, life expectancy, % with high school diplomas, average years of education, and household income per capita. Column 5 presents the p-value from the permutation test as in [Canay and Kamat \(2018\)](#), with a null hypothesis of no discontinuous change in the outcome distribution around the cut-off. Column 7 displays the number of observations chosen by the bandwidth-selection algorithm in Column 1. Columns 8 and 9 report the mean and standard deviation for the outcome variable based on all municipality-years in our sample, as in Table 1.

Table A.5: Effect of Local-Party Rule on Government Outcomes under Different Specifications

	RD Estimates				Permutation p-value (5)	Observations		Dep. Var.	
	(1)	(2)	(3)	(4)		Total (6)	Effective (7)	Mean (8)	SD (9)
	Polynomial order Baseline Covariates	1st No	2nd No	1st Yes	2nd Yes	1st No	1st No		
A. Local Budget Size									
Log of municipal revenue p.c.	-0.011 (0.110)	-0.000 (0.159)	-0.010 (0.053)	-0.090 (0.088)	0.498	2,387	1,225	6.707	0.916
Log of local tax revenue p.c.	0.287 (0.199)	0.346 (0.244)	0.015 (0.108)	-0.002 (0.139)	0.713	2,387	955	1.450	1.504
Log of municipal spending p.c.	-0.015 (0.102)	0.003 (0.151)	-0.054 (0.054)	-0.106 (0.081)	0.815	2,387	1,265	6.436	0.858
Log of municipal investment p.c.	-0.027 (0.123)	-0.031 (0.184)	-0.072 (0.076)	-0.131 (0.115)	0.773	2,387	1,368	5.879	1.094
B. Spending Patterns									
% of investment budget implemented	-1.205 (1.825)	-1.244 (2.284)	-1.826 (1.719)	-1.524 (2.225)	0.845	2,387	1,204	73.69	16.49
Administrative spending, %	0.345 (1.558)	-0.715 (2.106)	-0.034 (1.526)	-0.701 (1.930)	0.734	2,386	1,133	35.20	13.86
Agriculture spending, %	-1.448 (0.880)	-1.395 (1.111)	-0.767 (0.759)	-0.732 (0.906)	0.578	2,386	990	5.444	8.578
Education spending, %	-0.472 (1.221)	-0.248 (1.501)	-0.968 (1.149)	-0.849 (1.313)	0.054	2,386	995	12.49	12.03
Health spending, %	-0.575 (1.322)	0.089 (1.822)	-0.484 (1.144)	0.684 (1.780)	0.383	2,386	1,133	16.84	14.68
Social services spending, %	-1.106 (1.030)	-1.232 (1.330)	-0.579 (0.885)	-0.504 (1.088)	0.859	2,386	1,127	10.15	7.875
Transportation spending, %	2.342 (1.392)	2.184 (1.738)	2.716* (1.307)	2.721 (1.615)	0.084	2,386	953	12.91	11.12
Average Standardized Effect (jointly for A and B)	0.086	0.085	0.071	0.091					
Average Standardized Effect (jointly for B)	0.099	0.096	0.091	0.093					

Notes: * denotes significance at 10%, ** significance at 5% and *** significance at 1%. Standard errors in brackets are calculated using a heteroskedasticity-robust nearest neighbor variance estimator with the minimum number of neighbors equal to three. Significance levels are calculated based on robust standard errors following [Calonico, Cattaneo and Titiunik \(2014a\)](#). Column 1 corresponds to the effect of local-party rule under our baseline specification. Column 2 to 4 report conventional RD estimates under a 2nd order polynomial with no covariates, a 1st order polynomial with covariates and a 2nd order polynomial with covariates, respectively. Covariates include past value of the outcome, as well as 2003 values of human development index, life expectancy, % with high school diplomas, average years of education, and household income per capita. Column 5 presents the p-value from the permutation test as in [Canay and Kamat \(2018\)](#), with a null hypothesis of no discontinuous change in the outcome distribution around the cut-off. Column 7 displays the number of observations chosen by the bandwidth-selection algorithm in Column 1. Columns 8 and 9 report the mean and standard deviation for the outcome variable based on all municipality-years in our sample, as in Table 1.

Table A.6: Effect of Traditional-Party Rule on Government Outcomes under Different Specifications

	RD Estimates				Permutation	Observations		Dep. Var.	
	(1)	(2)	(3)	(4)	p-value (5)	Total (6)	Effective (7)	Mean (8)	SD (9)
Polynomial order	1st	2nd	1st	2nd		1st	1st		
Baseline Covariates	No	No	Yes	Yes		No	No		
A. Local Budget Size									
Log of municipal revenue p.c.	0.036 (0.085)	0.029 (0.097)	-0.030 (0.049)	-0.040 (0.054)	0.258	5,108	2,080	6.707	0.916
Log of local tax revenue p.c.	-0.173 (0.149)	-0.187 (0.184)	0.047 (0.061)	0.039 (0.070)	0.415	5,108	1,908	1.450	1.504
Log of municipal spending p.c.	0.045 (0.078)	0.038 (0.088)	-0.010 (0.047)	-0.019 (0.052)	0.384	5,108	2,159	6.436	0.858
Log of municipal investment p.c.	0.083 (0.096)	0.085 (0.113)	-0.017 (0.067)	-0.047 (0.079)	0.264	5,108	2,275	5.879	1.094
B. Spending Patterns									
% of investment budget implemented	1.912 (1.472)	1.980 (1.810)	1.527 (1.386)	1.402 (1.774)	0.037	5,107	1,905	73.69	16.49
Administrative spending, %	0.043 (1.333)	0.139 (1.403)	0.509 (1.285)	0.690 (1.409)	0.611	5,107	1,756	35.20	13.86
Agriculture spending, %	0.979 (0.792)	0.923 (0.869)	0.726 (0.696)	0.691 (0.766)	0.806	5,107	2,155	5.444	8.578
Education spending, %	1.131 (0.990)	1.436 (1.174)	0.809 (0.905)	1.034 (1.094)	0.650	5,107	1,717	12.49	12.03
Health spending, %	0.231 (1.145)	-1.162 (1.592)	0.457 (0.963)	-0.846 (1.478)	0.849	5,107	2,260	16.84	14.68
Social services spending, %	-0.333 (0.752)	-0.263 (0.887)	0.125 (0.647)	0.307 (0.780)	0.390	5,107	1,913	10.15	7.875
Transportation spending, %	-0.516 (1.017)	-0.548 (1.254)	-0.625 (0.949)	-0.834 (1.083)	0.189	5,107	2,032	12.91	11.12
Average Standardized Effect (jointly for A and B)	0.065	0.072	0.043	0.055					
Average Standardized Effect (jointly for B)	0.062	0.074	0.055	0.068					

Notes: * denotes significance at 10%, ** significance at 5% and *** significance at 1%. Standard errors in brackets are calculated using a heteroskedasticity-robust nearest neighbor variance estimator with the minimum number of neighbors equal to three. Significance levels are calculated based on robust standard errors following [Calonico, Cattaneo and Titiunik \(2014a\)](#). Column 1 corresponds to the effect of traditional-party rule under our baseline specification. Column 2 to 4 report conventional RD estimates under a 2nd order polynomial with no covariates, a 1st order polynomial with covariates and a 2nd order polynomial with covariates, respectively. Covariates include past value of the outcome, as well as 2003 values of human development index, life expectancy, % with high school diplomas, average years of education, and household income per capita. Column 5 presents the p-value from the permutation test as in [Canay and Kamat \(2018\)](#), with a null hypothesis of no discontinuous change in the outcome distribution around the cut-off. Column 7 displays the number of observations chosen by the bandwidth-selection algorithm in Column 1. Columns 8 and 9 report the mean and standard deviation for the outcome variable based on all municipality-years in our sample, as in Table 1.