

Voting Systems and Fiscal Policy: Evidence from Runoff and Plurality Elections

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Abstract

This paper compares policy outcomes under the runoff voting system and the plurality rule by exploiting the assignment of municipalities in Italy to different voting systems based on a population threshold. Mayors, who are the head of the local political power, are elected using a plurality rule in municipalities having less than 15,000 residents while they are elected using a runoff system in municipalities above the threshold. Regression-discontinuity estimates show that municipalities under the runoff system spend 12 percent more than those under the plurality rule and that additional expenditures are not financed via higher taxation.

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I Introduction

Why do fiscal policies differ substantially across countries? A prominent explanation refers to differences in political institutions, which determine the selection of politicians with different preferences and characteristics, and which endows elected officials with different incentives once in office. Constitutions, and voting systems in particular, determine how individual preferences are transformed into a probability that each candidate wins the electoral competition. For instance, some systems require candidates to receive more than half of the votes in a nationwide competition, while others demand a simple majority or to be the candidate receiving the plurality of votes in a sufficient number of districts. Theoretical predictions (e.g., Persson and Tabellini, 1999; Austen-Smith, 2000) and correlation studies (e.g., Milesi-Ferretti, Perotti, and Rostagno, 1999; Persson and Tabellini, 2003) show that countries subject to parliamentary forms of government and proportional voting rules supply more public good and redistribute more than presidential democracies and countries subject to majoritarian voting systems.

The empirical knowledge about the link between voting systems and fiscal policy is, however, limited for at least two reasons. First, existing results rely on cross-country correlations. Cross-country studies lack exogenous variation since the constitutional features of a country might be determined by omitted factors influencing both policy choices and economic outcomes, as discussed in Acemoglu (2005). Second, most of the existing evidence focuses on the comparison between systems in place to select members of national parliaments. In contrast, a formal comparison of fiscal policy outcomes implemented under alternative voting systems for the election of executives is lacking, despite a substantial cross-country variation. In particular, political leaders are elected using a runoff (or dual-ballot) voting system in 87 — mainly developing — presidential countries and using the single-ballot plurality (or first-past-the-post) rule in 21 of them including the United States (see Figure 1).

In this paper, I investigate how selecting the head of the political power under the runoff system, compared to the single-ballot plurality rule, affects the size of government and the composition of spending and revenues. I exploit the variation in the voting system in Italian municipalities, which are assigned to either the plurality or the runoff based on a population threshold. In municipalities below 15,000 inhabitants, the mayor is elected under a single-ballot

plurality rule, whereas the mayor is elected under a runoff system in municipalities above the population threshold. Under the plurality rule, the candidate who receives the largest vote share is announced as the winner. Under the runoff system, if none of the candidates surpasses a predetermined share of the votes, the top two vote recipients compete again in a second round, typically occurring a couple of weeks later, to determine the winner.¹

I find that the runoff system causes an increase in municipal expenditures and revenues of 12 percent compared to the plurality rule. This effect is primarily driven by an increase in current spending, which, on the one hand, should be the type of spending to which voters react faster and, on the other hand, is more under the direct control of local policymakers in the short run. Municipalities under the runoff system spend more on administration and for the provision of services to citizens. On the contrary, current spending targeting specific economic agents in sectors like tourism, commerce, agriculture and production, and welfare spending do not change as a function of the voting rule. I also find that revenues from taxation do not vary with the electoral system. Instead, municipalities under the runoff system levy additional revenues from the provision of services and receive much larger transfers from the national and the regional governments.

The effect of the runoff system on policy outcomes is likely to operate through two main channels. First, by inducing political candidates to seek a broader support in the population, the runoff provides additional electoral incentives compared to the plurality system, in which a minority of the votes is sufficient to be elected (e.g., Chin, 2019). Electoral incentives impact fiscal policy outcomes if they induce politicians to exert extra effort in attracting external resources to boost the provision of public good. Second, voting systems can affect political selection both in terms of the individual decision to compete for an elective office and in terms of the identity of elected officials. Osborne and Slivinski (1996) show that the identity of individuals who run for office and the identity of candidates who win an election is different under the plurality rule and under the runoff system.² In particular, the results of this paper are con-

¹The exception is France, where a third candidate is admitted to the runoff if she surpasses 12.5 percent of votes (Pons and Tricaud, 2018), even if the law allows her to step out and support one of the others.

²Different selection of politicians under the two voting systems is also a consequence of strategic voting. Bouton and Gratton (2015) show that a positive fraction of voters always vote strategically in the first round of a runoff and that the Condorcet winner may not reach the second round.

sistent with the possibility that the runoff system selects better politicians who attract external resources to finance the provision of more public good.

This paper contributes to the existing literature that investigates how voting rules shape the size and composition of the government. First, it provides rigorous causal evidence on the relationship between voting systems and fiscal policy while existing research (e.g., Persson and Tabellini, 2003) prevalently rely on a cross-country correlation approach. Second, this paper looks into the black box of voting systems used worldwide for the direct election of executives. More specifically, while voting systems used to select members of national parliaments differ in the number and size of districts, the allocation of rents among candidates, and the electoral formula, Presidents are elected based on alternative rules in which only the latter feature varies. Italian municipalities are an ideal setting because they share many institutional features with presidential democracies, and mayors in Italy have a substantial power because they are always politically aligned with the municipality council. Moreover, the institutional variation generates a natural experiment and high-quality and uniform balance sheet data from official sources are available. Lastly, the relatively large number of municipalities (approximately 8,100) allows to draw reliable conclusions by only comparing the ones which are close to the population threshold.³ However, it remains an open question whether the results of this paper can be generalized to the national level since they document that the runoff system translates in additional spending among institutions that can increase revenues without levying additional taxes.

Using the variation in the voting system that the institutional framework generates in Italian towns, Bordignon, Nannicini, and Tabellini (2016) find that the extreme-leftist party is less likely to join the center-left coalition during the first round and that local tax rates vary less in the presence of the runoff system compared to municipalities subject to the plurality rule. Barone and Blasio (2013) find a moderate increase in turnout as well as older and better-educated politicians under the runoff system, although their findings are not robust to different specifications; Ferraresi, Rizzo, and Zanardi (2015) find that when a municipality crosses the population threshold, current expenditure and per capita taxes are lower if the mayor does not need a broad coalition of parties for support. Similar results are also obtained by Bracco and

³Brazilian towns, used in Chamon et al. (2019), entail a similar natural experiment, but the number of municipalities close to the population threshold used to assign the reform is very low.

Brugnoli (2012), who additionally find that municipalities subject to a change in their voting system from the plurality rule to the runoff system are favored by upper-tier levels of government.⁴

The results presented in this paper are not in line with the existing estimates of policy effects of the runoff voting system obtained under different identifying assumptions. More specifically, my empirical strategy differs substantially from those of Bracco and Brugnoli (2012), Barone and Blasio (2013), and Ferraresi, Rizzo, and Zanardi (2015). On the one hand, Barone and Blasio (2013) consider only polynomial approximations using all municipalities, hence obtaining estimates biased by the policy changes in place at other population thresholds (Eggers et al., 2018). On the other hand, Bracco and Brugnoli (2012) and Ferraresi, Rizzo, and Zanardi (2015) include municipality fixed-effects to the RD specification. Therefore, the authors exploit municipalities that changed the voting system between different censuses instead of a quasi-experimental variation across municipalities that randomly lie to opposite sides of the population threshold. If, for instance, the demand for public good is different in municipalities growing or shrinking over time, a within-municipality comparison yields biased estimates of the causal effect of the runoff voting system on fiscal policy.⁵

II Institutional Details

II.A Municipalities

Italy is divided into three within-country administrative levels (from top to bottom: 20 Regions, of which 5 have a special autonomy guaranteed by the constitution; 110 Provinces and approximately 8,100 Municipalities) with a high degree of financial autonomy and several competencies delegated by the central government. The number of municipalities is high in relation to the national population and the total surface, and there is a predominance of small towns (70.5

⁴In Brazilian towns, Chamon et al. (2019) find that the runoff system is associated with greater investment and lower current spending.

⁵The empirical strategy in Bracco and Brugnoli (2012) and in Ferraresi, Rizzo, and Zanardi (2015) rests on the strong assumption that a municipality just below the population threshold in the 1991 census is a good comparison for itself if it is assigned to the other voting rule ten years later. Moreover, it relies on a variation that is identified for only thirty towns that changed from the plurality rule to the runoff system and for five towns that changed from the runoff system to the plurality rule (e.g., Bracco and Brugnoli, 2012).

percent have less than 5,000 residents). The political authority is shared between the mayor (Sindaco), who is elected by the citizens every fifth year, the executive board (Giunta Comunale), which is appointed and presided over by the mayor, and the municipal council (Consiglio Comunale), elected on the same day as the mayor.⁶ The mayor and the executive board propose to the council bills on fiscal policy and urban planning, including the ex-ante budget and the ex-post accounts. The council approves the budget and can approve binding motions to pledge the executive board to take specific actions. Members of the municipality council are not employed by the municipality and, apart from very large cities, only meet once a month. The mayor and the members of the executive board, instead, are part-time or full-time employees who regularly meet and are responsible for the well-functioning of the administration.

Since 1990, municipalities are free to set tax rates and levels of expenditures, although municipalities with more than 5,000 residents (as well as provinces, regions, and other public authorities) must avoid significant budget imbalances and limit their debt (Law 448/1998). This rule is known as the Domestic Stability Pact (DSP), as its aim is to make local administrations responsible for the achievement of the budget goals that the Stability and Growth Pact requires to EU members. The DSP was first introduced in 1999 and has subsequently been modified slightly by parliament.

Municipalities are responsible for education (kindergarten and school buildings), culture and tourism, housing and welfare subsidies, economic incentives, and local police. Environmental policy and local transportation are a municipal responsibility only in large towns, whereas small towns must co-operate with their neighbors to provide these services. Regions and provinces can delegate further competencies to municipalities, but such delegation must be to all municipalities, regardless of size. Each municipality has the authority to decide which complementary services to provide to citizens, commuters, and tourists. School transportation and food/beverage at school are examples of services that all municipalities provide. In principle, the number of additional services that municipalities are allowed — but not obliged — to provide is large. Examples include childcare, local transportation, public restrooms, parking

⁶Since 2012, the executive board and the municipal council have been suppressed in municipalities having less than 1,000 residents.

lots, pharmacies, museums, swimming pools, and sport facilities.⁷ The provision of additional services is among the main arguments of debate and campaign before an election, together with urban planning and local taxation. Mayoral candidates declare to voters which services they want to maintain from the previous administration, or they want to start providing, or they want to suppress.

There are four main sources of revenue. First, revenues from taxation. Municipalities have the authority to determine the rate of a real estate tax, as well as the authority to decide whether to levy a local tax on labor income (and if they do so, to decide on the tax rate, potential exemptions, and the progressivity of the tax scheme). Second, municipalities collect revenues from the provision of services by asking users to pay the price for them. Third, municipalities receive transfers from higher levels of the administrative hierarchy (province, region, government, EU). A fraction of transfers is constant over time and assigned based on socio-economic conditions and population size. Another fraction is flexible and is based on projects that municipalities present to the higher administration.⁸ Private (e.g., banking) foundations can also transfer resources to municipalities who invest in projects or infrastructures that the foundation itself deems valuable. Fourth, there is a compulsory fee that the municipality receives when new constructions are built. The municipality can affect the amount both by determining the price per square foot and by deciding which areas are available for the construction of new buildings every year.

National law (Legislative Decree 267/2000) determines the budgetary rules of all local authorities. All authorities must follow a common template established by law for both the budget plan and the ex-post balance sheet, and their own accountants must validate financial acts. Once the budget plan is approved, it can be modified at any time (with the exception of the last month of the year) under the proposal of the executive board and with a vote of the council, but extra-budget revenues or expenditures are not allowed.

⁷Some municipalities provide an even wider range of services. For instance, some coastal municipalities provide bathing facilities to their citizens and tourists. Moreover, the four casinos present on the Italian territory are run by the local municipality.

⁸Earlier research (e.g., Gagliarducci, Nannicini, and Naticchioni, 2011; Carozzi and Repetto, 2016) shows that transfers from the central administration to municipalities are assigned based on strategic electoral incentives and home bias of elected politicians.

II.B Voting systems

Since 1993, mayors have been elected using majoritarian rules. The plurality rule applies to municipalities below 15,000 inhabitants, whereas the runoff system applies to those above this threshold (Law 81/1993). Before the year 2000, legislatures lasted four years, whereas presently, the natural duration is five years. Election dates are determined by the national government. Mayors are term-limited after two consecutive terms.⁹ If the legislature ends before the natural deadline, then the government nominates an extraordinary commissioner, who remains in office until the next election day. However, early terminations are uncommon and arise only after a no-confidence vote by the council, the resignation of the mayor or more than half of the councilors, or if the mayor obtains a prominent political position at a higher level during her time in office.¹⁰ Members of the municipal council are elected using a voting system that guarantees the mayor a large majority in the council. More specifically, members of the municipality council are elected at large (i.e., the municipality is not divided in multiple electoral districts) and each list of candidates to the municipality council is paired with one candidate to the position of mayor. The list (or lists) paired with the elected mayor receives at least 60 percent of the seats, while lists paired with losing candidates who receive at least 3 percent of valid votes share the remaining seats proportionally. Voters can cast a preference vote in support of up to two candidates — of different gender — belonging to the preferred list. The most voted candidates of each list are, in turn, elected to the municipality council.

In municipalities below 15,000 residents, mayors are elected with a single-ballot plurality rule. Under the plurality rule, each competitor presents a list of candidates to the council in her support, with at most as many candidates as the number of seats in the council. Choosing one of the mayoral candidates, voters automatically support the associated list for the council. The most voted candidate is elected mayor.¹¹

⁹35 percent of mayors are term-limited. Moreover, 42 percent of incumbent mayors run for re-election, which implies that only 7 percent of all mayors are defeated when running for re-election. Among incumbent mayors who are not-term limited, 67 percent decide to run for re-election, and 52 percent are re-elected.

¹⁰In my sample, 8.4 percent of terms ended before the predetermined termination. Anecdotally, most of the cases were related to promotion of the mayor to higher levels of the hierarchy or because of the sudden death of the incumbent mayor.

¹¹See Figure B1 in the Online Appendix for an example of the voting ballot. Suppose a voter wants to vote for the top-most party on the ballot in Figure Figure B1. Then, the vote goes automatically to candidate Angelo Cosseddu.

In municipalities above 15,000 residents, mayors are elected according to the runoff system.¹² Each candidate is allowed to present one or more lists of candidates for the council, and voters can cast a disjoint vote (i.e., to support a mayoral candidate and a list that does not support her).¹³ A candidate is elected mayor only if she receives more than 50 percent of votes. If no one obtains an absolute majority, then after two weeks, a second round between the two candidates with the most votes takes place, and the winner is elected mayor. Excluded candidates are allowed to endorse one of the remaining contestants before the second round if the endorsed candidate accepts the support.¹⁴

III Empirical Strategy

III.A Setup

This paper aims to investigate the effect of the runoff voting system on the fiscal policy implemented by policymakers. A major challenge in estimating the causal effects of political institutions on economic outcomes is that countries select their institutional framework due to unobservable factors, such as cultural heritage, political experience, history, religion, and common wisdom. Hence, any methods of estimating the economic effects of institutions that do not completely consider these relations, such as traditional cross-country or within-country approaches, are likely to suffer from biases due to omitted confounders and reverse causality (Acemoglu, 2005).

The runoff system is assigned to Italian municipalities solely based on the predetermined threshold of 15,000 residents in the official population, computed every ten years by the Italian

¹²In addition, the voting rule law allows members of the municipal council to be part of the executive board only below 15,000 residents, while in municipalities under the runoff system, the members of the council cannot be chosen to serve on the executive board. Municipalities below the population threshold have autonomy in deciding whether to elect a speaker of the council or let the mayor act as speaker, while in municipalities above the threshold, it is compulsory to choose a speaker other than the mayor.

¹³See Figure B2 in the Online Appendix for examples of voting ballots for the first and second rounds. Suppose that a voter wants to vote for the top-most party in panel (a) of Figure Figure B2. If the voter wants to do so, instead of supporting candidate Mauro Turenci, she is allowed to vote any of the other candidates (e.g., Andrea Bernardini). In the second round, instead, voters cast a vote only for the mayor. Party symbols are printed on the ballot only as a reminder on the composition of each coalition.

¹⁴In the case of endorsement, the premium that guarantees 60 percent of seats to the elected mayor is shared among all lists that supported the winner on the occasion of the second round.

Statistics Bureau (ISTAT). Hence, the institutional framework is ideal for applying a sharp RD design and for consistently estimating the effect of the runoff system compared to the plurality rule. Conditional on the distance to 15,000 residents, municipalities close to and below the threshold and municipalities close to and above can be assumed to be equal in all other characteristics; hence, municipalities around the threshold are as good as randomly assigned to one of the voting rules.¹⁵

I estimate the effect of the runoff system compared to the plurality rule on fiscal policy in Italian municipalities using local-linear regressions with and without predetermined control variables and within different bandwidths for local linear regressions.¹⁶

More specifically, I estimate the following baseline model:

$$y_{i,t,e} = \beta_0 + \beta_1 \text{Above15,000}_{i,e} + \beta_2 A_{i,e} + \beta_3 A_{i,e} \times \text{Above15,000}_{i,e} + \mathbf{X}_i \Psi + \delta_t + \theta_e + \varepsilon_{i,t,e}, \quad (1)$$

where the dependent variables $y_{i,t,e}$ are the natural logarithm of the yearly municipality spending and revenues per capita, A_i is the running variable (Census population – 15,000) and $\text{Above15,000}_{i,e}$ represents the runoff treatment variable. The subscript i refers to the municipality, the subscript t refers to the calendar year, and the subscript e refers to the year of the last municipality election. The coefficient of interest measuring the effect of the runoff system compared to the plurality rule is β_1 . δ_t and θ_e represent the year-specific and election year-specific

¹⁵Municipalities are assigned to several policies according to their official population, which is computed every ten years on the occasion of national censuses by the ISTAT. As shown in Table B1 in the Online Appendix, there are numerous other rules that apply based on population thresholds. However, the closest population thresholds to that assigning the runoff are at 10,000 residents on its left and at 30,000 residents on its right; no other policies change at 15,000 residents (Source: Legislative Decree 267/2000). See also Gagliarducci and Nannicini (2013) and Eggers et al. (2018). Law 127/1997 introduced an additional policy variation at the 15,000 resident threshold. Municipalities above 15,000 residents were assigned the right to nominate a CEO at the top of the administrative bureaucracy (Direttore Generale), while municipalities below the threshold had to share the Direttore Generale with their neighbors. Law 191/2009 subsequently abolished the position of Direttore Generale in all municipalities below 100,000 residents. In Section IV, I show that this additional policy variation does not drive my results at the 15,000 resident threshold by restricting the analysis to the years following the abolition of the CEO in municipalities having less than 100,000 residents. The CEO is the head of the local bureaucracy. She is appointed – likewise all public servants in Italy – after a public exam. The CEO is required by law to sign all bills approved by local politicians that impact the budget.

¹⁶For comparability, the Calonico, Cattaneo, and Titiunik (2014) bandwidth reported in the tables is optimal for the logarithm of the yearly municipal expenditures per capita in a regression without covariates. Outcome-by-outcome Calonico, Cattaneo, and Titiunik (2014) optimal bandwidths are reported for all other variables in the robustness checks described in Section IV.C.

intercepts, respectively. I control both for standard year fixed effects and election year fixed effects because of the staggered structure of municipal elections in Italy. Municipalities vote at a different point in time due to a combination of historical and political reasons. The aim is to control for general time trends in the municipality financial constraints, for instance, due to common shocks or to national fiscal adjustment policies using year fixed effects. Election-year fixed effects, instead, account for municipalities being subject to a voting system based on different population censuses. For instance, in the year 2005, a municipality whose citizens voted in 2002 was assigned to the voting system based on the 1991 census, while a municipality in which the local election took place in 2003 was assigned to a voting system based on 2001 census. The vector \mathbf{X}_i represents a set of predetermined or time-constant municipal characteristics. In all estimations, standard errors are clustered at the municipality level.

III.B Data

The analysis builds on a yearly panel of all Italian municipalities from the 15 regions under the “Statuto Ordinario” observed between 1998 and 2015.^{17,18} The official population data are from the 1991, 2001 and 2011 censuses, which have been used to assign each municipality to one of the voting rules for elections held since the 1993 reform. In the main specification, the sample is restricted to 3,434 observations close to 15,000 residents.¹⁹ Figure 2 reports the municipalities exposed to either voting system which are included in the analysis.

The balance sheets used to construct the dependent variables come from the Statistics Office of the Ministry of Internal Affairs (Finanza Locale) and contain yearly information on the sources of revenues and the sectors of expenditures used to construct the dependent variables in (1). Expenditure items are reported according to the responsibility to which they refer, whereas revenues are classified in terms of the sources from which they derive.²⁰ The socio-economic,

¹⁷The five regions whose special autonomy is guaranteed by the national constitution (Friuli-Venezia Giulia; Sardegna; Sicilia; Trentino-Alto Adige and Valle d’Aosta) are excluded because their municipalities follow different voting rules and are subject to different competencies and accounting procedures.

¹⁸In total, the sample counts 119,685 municipality-by-year observations referring to elections held between 1994 and 2015.

¹⁹More specifically, I restrict the attention to municipalities included within the Calonic, Cattaneo, and Titunik (2014) optimal bandwidth for the main outcomes, which is equal to 2,086 residents. I lose 189 observations due to missing observations in the outcomes of interest.

²⁰Expenditures are classified according to the following competencies: the administrative bureau, the justice

demographic and geographic characteristics used as covariates are from the Statistical Municipal Atlas (*Atlante Statistico dei Comuni*) provided by the ISTAT and refer to the 1991 and 2001 population censuses, the 1990 agriculture census and the 2002 edition of the Statistics on Tourism.^{21,22}

To test the effect of the runoff on the composition of current spending, I aggregate different expenditure items into five categories. Specifically, the first group of expenditures concerns the sectors representing the bureaucratic structure of municipalities (“Administration”) and aggregates expenditures on the administrative bureau, the justice bureau and local police; the second group (“Services”) aggregates the services provided to the citizens, as described in Section II; the third group refers to the commitment of politicians to the quality of life in their town (“Culture and Education”) and aggregates expenditures on cultural activities, sports and education; the fourth considers expenditure undertaken with the aim of incentivizing economic agents with particular interests (“Economy”) and aggregates expenditures for incentives in commerce, transportation, tourism and environmental policies; and the fifth proxies for the attention paid by municipalities to disadvantaged individuals in society (“Welfare”) and is composed of only the expenditures on that item. The descriptive statistics of all outcomes are reported in Table 1, while Figure A.1 in the Appendix reports the average proportion of each group to the overall current spending in municipalities exposed to either voting rule.

administration, local police, education, culture, sports, tourism, transportation, the environment, welfare, commerce, and services. Each responsibility has a value reported as capital spending and a value reported as current spending. Revenue items are reported according to the following sources: tax revenues, transfers, other current revenues, alienation of land revenues, revenues from new debts, and revenues from the provision of services. All expenditure items used in the empirical analysis refer to ex-post accrual accounting (*Impegni*) expenditures, while all revenue items used in the empirical analysis refer to ex-post accrual accounting (*Accertamenti*) revenues. See Table B3 in the Online Appendix for details.

²¹Three groups of controls are included in the regressions: first, macro-region dummies and geographic time-invariant characteristics such as surface, altitude and mountainous surface; second, pre-treatment demographic characteristics: population density, the unemployment share, the retirement share, the share of students and the share of individuals over 65 years old in the population, and the share of employees in touristic activity; and, third, pre-treatment economic characteristics: the surface used for Denomination of Controlled and Guaranteed Origin (DOCG) wine production, the rural surface in 1990 and the touristic supply index in 1996. Touristic supply is measured in terms of the number of beds in accommodations; although computed for the first time in 1996, this measure does not vary much in the short run and is unlikely to be a potential outcome.

²²See Table B4 in the Online Appendix for details.

IV Results

IV.A Size and composition of public expenditures

In this section, I present the empirical results. Table 2 shows the results for the effect of the runoff system on the size of public expenditures. I show the results of the analysis both excluding and including covariates to show that the estimated coefficients are not sensitive to their inclusion while precision improves substantially. For simplicity, I report only the estimated coefficients and standard errors for the treatment indicator in all tables.

The results in Table 2 show that the runoff system causes an increase in the overall size of government expenditures compared to the plurality rule. I estimate a large 12 percent increase in the level of spending. In columns (3) and (4) of Table 2, I decompose the overall expenditures into current and capital spending and estimate the effect of the runoff system on each component. The results show that most of the effect on the overall size of the public sector is due to the increase in current spending. Figure 3 shows the standard RD plots relative to the outcomes presented in Table 2. The figure shows a sizable jump in total expenditures and current spending at the threshold also controlling non-parametrically for the running variable. Municipalities subject to the runoff system spend, on average, approximately 100 euros per capita more than municipalities under the plurality rule. Of these additional 100 euros per capita, 80 euros come from the increase in current spending (see Figure A.2).

These results are opposite to the ones reported in Chamon et al. (2019), who find smaller current expenditure in municipalities exposed to the runoff system than the ones under the plurality rule in Brazilian towns. One possible explanation for the divergent results is that in their study, which considers a developing country and a population threshold set at 200,000 residents, accountability of local politicians is lower under both voting systems than in my setup.

Table 3 and Figure A.3 in the Appendix show the estimated effects of the runoff voting system on the composition of current spending. First, municipalities exposed to the runoff system spend 6.7 percent more on administration than those under the plurality rule. A large proportion of the effect of the runoff system on the size of the government and on current

spending comes from an increase in current expenditures for the provision of services, which is more than 24 percent larger in municipalities under the runoff system. This result suggests that policymakers in municipalities subject to the runoff system increase the size of government by either providing services to citizens that in other municipalities are not directly supplied by the public administration or by providing the same services more intensively.

On the contrary, current spending on economic incentives, which narrowly target few voters in the society, does not vary as a function of the voting system. The estimated coefficients on culture and welfare are positive and economically sizable but not sufficiently precise to draw any conclusions.

The evidence that current spending for the provision of services changes as a function of the voting rule suggests that politicians adjust to the runoff system by strategically enlarging the areas of public interventions that are in close connection with the everyday needs of many voters. Moreover, services attract broad support in society from individuals of different political views. Politicians arguably react to the need to seek support from the absolute majority of voters under the runoff than under the plurality by investing more resources than their colleagues subject to the plurality rule. Narrow sectors of expenditures, which instead target specific groups of voters and thus may polarize the electorate, are unaffected by the change in the voting rule at the population threshold. Lastly, the evidence that the runoff system increases administrative spending may reflect the need for a more structured bureaucracy in municipalities that provide services. Yet, it might also indicate that the runoff system induces an increase in unproductive spending by privileging representativeness over elected politicians' accountability.

IV.B Revenues

The estimates presented in the previous subsection indicate that municipalities exposed to the runoff rule tend to have higher spending than the ones subject to the plurality rule. In Table 4 and Figure 4, I estimate the effect of the runoff system on municipal revenues. First, revenues increase exactly as much as expenditures, confirming that the DSP is effective and binding in Italian municipalities. Second, the effect of the runoff system compared to the plurality rule on tax revenues is not distinguishable from zero, while revenues from the provision of services

increase by 23 percent. The increase in revenues from the provision of services implies that individuals without the right to vote in local elections such as commuters and tourists finance part of the additional spending. Indeed, while tax-revenues are residence-based (e.g., the labor income tax) or property-based (e.g., the real estate tax), revenues from the provision of services are user-based. For instance, local transportation fees are paid for by all passengers.

Third, revenues from transfers received from upper-tier levels of government increase substantially when crossing the population threshold. These results are consistent with Bracco and Brugnoli (2012) and previous evidence from the literature investigating the manipulation of transfers from the central administration to targeted municipalities (e.g., Gagliarducci, Nannicini, and Naticchioni, 2011; Lizzeri and Persico, 2001; Carozzi and Repetto, 2016).

The results presented in Table 4 and Figure 4 highlight electoral incentives and positive politicians' selection as key channels behind a more expansive fiscal policy implemented in municipalities subject to the runoff system than in municipalities subject to the plurality rule. If instead the increase in municipality expenses had been accompanied by an increase in local taxation, we might have suspected the runoff to induce a poor selection of politicians or to limit the accountability of elected officials. In contrast, the empirical results show that municipalities do not levy additional taxes to finance an increase in expenditures, while they benefit from more transfers and from revenues coming from the provision of services.

IV.C Robustness checks

The validity of the RD estimator rests on two identifying assumptions. First, conditional on the running variable, all other factors should be continuous at the threshold (Continuity of potential outcomes). Second, untreated municipalities should be unaffected by the treatment (Stable Unit Treatment Value Assumption, SUTVA).²³ The institutional framework and the data at hand require a short discussion regarding some details that might, in principle, inflate or

²³The SUTVA requires that untreated municipalities are unaffected by the treatment, and concerns over the fulfillment of this assumption arise when units in different groups can communicate or share information. Bartolini and Santolini (2009) find that municipalities in Italy react to policies implemented nearby. In particular, the small average size facilitates information flow between different municipalities lying in the same economic or administrative district because of commuters and local mass media coverage. However, as shown in Figure 2, in the restricted sample that I consider, the problem is very limited, and the SUTVA is a reasonable assumption in this context because of the geographic distribution of municipalities, as the closer to the threshold of 15,000 residents, the fewer municipalities share boundaries or other relevant information.

deflate the magnitude of the estimated coefficients.

When the population is used as the running variable, the continuity of potential outcomes requires (1) the absence of precise control over the assignment variable, (2) the balancing of predetermined characteristics, and (3) no other change in policies based on population in the sample under investigation. In the Appendix, (Figure A.4), I provide the results from the McCrary (2008) test for the 1991 to 2011 population censuses. This test cannot reject the null hypothesis of smoothness of the running variable around the 15,000-resident threshold. I also present evidence of the balancing of several baseline covariates (Table A.1).

Regarding policy changes, it is worth noting that between 1998 and 2009, municipalities above 15,000 residents were allowed to appoint a *Direttore Generale* (CEO) at the top of the administrative bureaucracy. This would represent a threat to the validity of the research design if the effect of the runoff on fiscal policy could not be distinguished from the effect of having a CEO. In Table A.2 in the Appendix, I replicate the main results of the paper by restricting the sample to observations between 2010 and 2015, after the abolition of the position of CEO in all municipalities below 100,000 residents.²⁴ Despite a substantial reduction in precision due to the loss of more than 75 percent of observations, the results in Table A.2 are in line with the evidence reported in Tables 2–4.

In addition, the change in the voting rule at 15,000 residents does not only concern the introduction of a second round to elect the mayor but also marginally changes the electoral system for the council. Above the threshold, a mayoral candidate is allowed to be supported by several lists of candidates for the municipal council, and voters can cast a disjoint vote for the mayor and for the council. Below 15,000 residents, each mayoral candidate is only allowed to present one list of candidates for the council, and voters are restricted to voting for a mayoral candidate and for the list of candidates for the council in her support. Municipalities in which many disjoint votes are cast are likely to be municipalities in which either the quality traits of some mayoral candidates are considered rather weak by voters, or municipalities in which vot-

²⁴Since the CEO is the head of the local bureaucracy and receives a high wage (approx. 140,000 USD/year pre-tax), the need to hire a CEO instead of sharing the cost with other municipalities can explain a fraction of the effect on expenditures at the 15,000 residents' threshold. However, the wage of the CEO is negligible compared to the magnitude of the effect that I find in Table 2 (approx. 1,600,000 USD/year), and the effect on total and current expenditures is only partially explained by administrative spending, which includes the salary of the CEO.

ers used this tool to select the top-quality candidate independently of party affiliation. Likewise, an excessive number of parties in the coalition of the mayor may lead to low accountability.

In Table A.3 in the Appendix, I replicate the main results of the paper by including controls for the proportion of disjoint votes cast on the occasion of the last election in support or against the elected mayor, as well as for the number of lists competing. Table A.3 shows that the main results survive when controlling for the share of disjoint votes and for the number of lists competing, reassuring that my results are not driven by municipalities in which the selection and the accountability of elected politician is affected by confounders assigned on the same population threshold.²⁵ Moreover, the change in the voting rule for the council is arguably negligible compared to the change in the voting rule for the mayor in shaping the fiscal policy. Bordignon, Nannicini, and Tabellini (2016) argue that the voting reform in both groups of municipalities had the aim of reinforcing the authority of mayors in contrast to the authority of municipal councils. Supporting this argument are the direct election of mayors with majoritarian rules (which replaced a proportional representation system in which mayors were elected by the council) and the anticipated end of term also for council members in the event of a resignation of the mayor. In fact, only 2.64 percent of legislatures in municipalities of 10,000 to 20,000 residents faced an early termination after a vote of no-confidence or the resignation of the majority of members of the council.²⁶

²⁵The proportion of disjoint votes and the number of lists competing during the elections are potential outcomes of the introduction of the reform. However, their introduction as additional controls helps to address concerns about the validity of the quasi-experimental design.

²⁶I propose additional robustness checks in the appendix. First, I exclude the possibility that the results are driven by fixed bureaucratic costs attached to the organization of the second round of the electoral competition. Those costs are generally spread between the municipality and the central government, with the latter compensating the local authority at a later time. In Table B2 in the Online Appendix, I separate the effects of the runoff on fiscal policy estimated during the election year from those estimated in off-election years. The estimated coefficients show that the voting rule also shapes fiscal policy in years in which there is no additional fixed cost attached to the two-stage nature of the electoral competition. Second, Figures B3–B5 in the Online Appendix, which plot the estimated coefficients and the 95 percent confidence intervals as a function of the bandwidths used to fit local linear regressions, provide further evidence of the overall robustness of the findings. In all graphs, the estimated coefficients of the statistically significant variables are positive for any bandwidth between 500 and 3000 residents. The coefficients are sensitive to the chosen bandwidth only if the sample is small, while they are stable for larger samples and around the Calonico, Cattaneo, and Titiunik (2014) optimal bandwidth. Third, I present the results of several falsification tests. In each test, I assigned a placebo treatment to municipalities above specific population thresholds (13,000, 14,000, 16,000, and 17,000 residents) to investigate the potential presence of leaps in the outcomes driven by chance or due to large variability and to evaluate the goodness of fit of the different functional forms. The tests for the local linear regressions (Figures B6–B9 in the Online Appendix) show that the leaps in the presence of placebo thresholds are almost never statistically significant and that the coefficients are very close to zero.

V Concluding Remarks

This paper contributes to the literature investigating the economic effects of institutions by comparing the levels and composition of public expenditures and revenues under the two most widely implemented electoral systems for the selection of executives. I used a quasi-experimental variation to circumvent the potential sources of bias of cross-country comparisons in terms of reverse causality and omitted confounders. Italian municipalities represent an ideal institutional framework to implement an RD design and to credibly identify the causal effect of voting rules on the size and composition of the public sector.

Voting rules are among the major components of the democratic process and have a potential impact on economic policy by generating changes in politicians' and voters' behavior. Specifically, the difference in the electoral formula between the runoff system and the single-ballot rule changes the focus of the electoral competition to a two-stage race with different goals. Under the runoff system, the focus in the first round is share maximization for admission to the second round; by contrast, in the second round, the number of candidates is fixed at two, and a candidate needs the support of the median voter to win.

Robust quasi-experimental evidence shows that the runoff system causes an increase of 12 percent in municipal expenditures relative to the plurality rule. Higher current spending drives most of this difference. Additional spending is financed by additional revenues from the provision of services and an increase in transfers received from the regional and national governments, while revenues from taxation are equal under the two systems. Other research also finds that fiscal policy variables respond generously to changes in the voting environment, including Repetto (2018).

The results presented in this paper indicate that sub-country entities like cities, which can rely on sources of revenues different from taxation, spend more if subject to the runoff voting system than if subject to the plurality rule. It remains, however, an open question for future research how countries that raise taxes to finance additional expenditures react to the exacerbation of incentives generated by the runoff system, relative to the plurality rule. Speculatively, it may either be that the introduction of a runoff system is beneficial for voters' welfare if countries either finance additional spending via a reduction of corruption or ego-rents for politicians.

Alternatively, the results presented in this paper open up the possibility that the runoff induces politicians to increase the public deficit to finance contingent spending without increasing taxes.

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Disclaimers

Previous versions of this paper have circulated with the title “Runoff Vs. Plurality: Does it Matter for Expenditures? Evidence from Italy”.

Conflict of Interest Disclosure

The author has no financial arrangements that might give rise to conflicts of interest with respect to the research reported in this paper.

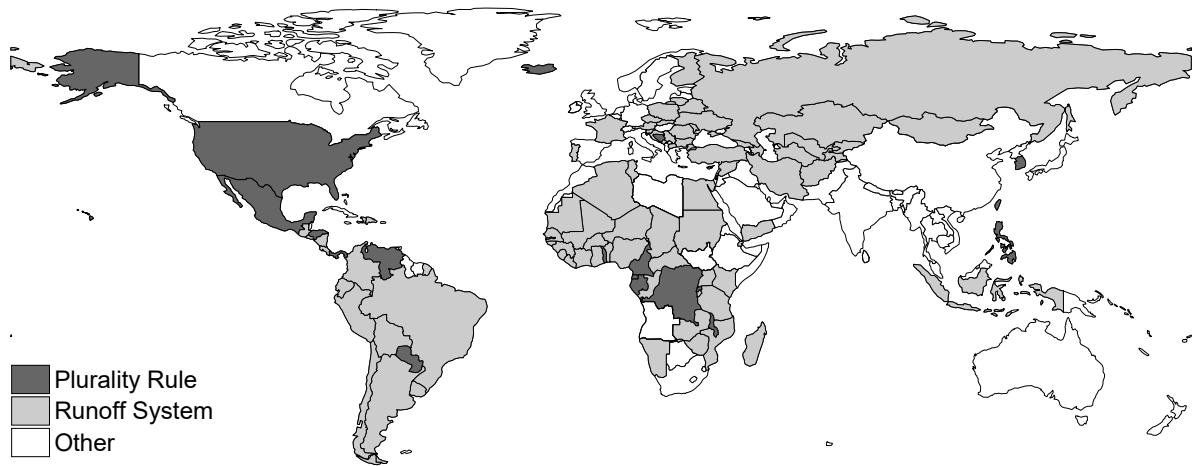
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Figures and Tables



Notes: This figure shows the presidential democracies which elect the President according the runoff system, and those using the plurality rule. Source: Author's elaboration on IDEA (2018) and on Natural Earth geodata.

Figure 1: Runoff and plurality in presidential democracies



Notes: Official population on the occasion of the 1991, 2001 and 2011 population censuses. Municipalities within the Calonico, Cattaneo, and Titiunik (2014) optimal bandwidth. The five regions with special autonomy excluded from the sample are in black. Source: Author's elaboration on ISTAT geodata.

Figure 2: Stable unit treatment value assumption

Table 1: Descriptive statistics

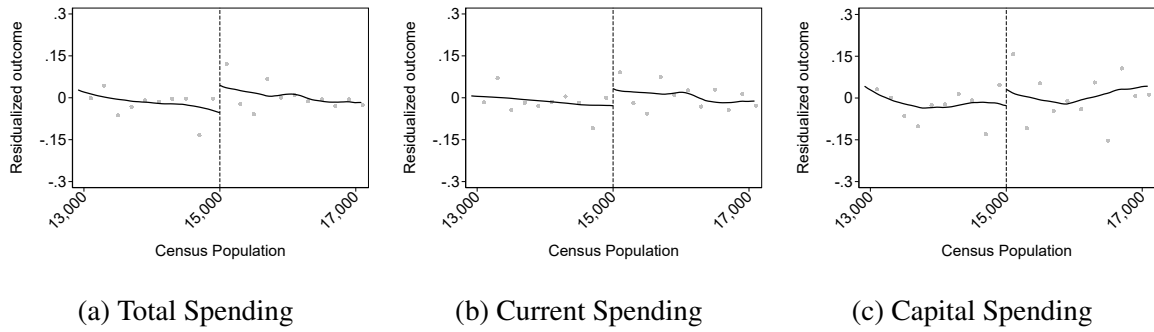
Variable	Mean	St. Dev.
Total Spending	1,059.29	461.40
Capital Spending	239.60	298.89
Current Spending	740.34	231.77
Administration	274.04	74.04
Services	130.09	120.30
Culture and Education	102.06	45.08
Economy	148.38	76.08
Welfare	98.44	55.82
Revenues	1,057.16	461.32
Tax Revenues	392.86	142.91
Revenues from Services	198.02	143.63
Transfers from Nat. Gov.	121.22	115.58
Transfers from Reg. Gov.	19.27	23.53

Notes: Election years between 1994 and 2015. Outcomes observed between 1998 and 2015. Municipalities within the Calonico, Cattaneo, and Titiunik (2014) optimal bandwidth for a total of 3,434 observations. All variables are expressed in 2005 euros per capita. See Table Table B3 in the Online Appendix for description of variables, their logarithmic transformation and data sources. Spending in other competences and revenues from other sources are excluded for brevity.

Table 2: Runoff voting system and size of the Government

	Total Spending	Total Spending	Current Spending	Capital Spending
Above 15,000	0.125**	0.120***	0.100***	0.080
	(0.052)	(0.042)	(0.037)	(0.074)
Observations	3,434	3,434	3,434	3,434
R ²	0.171	0.334	0.372	0.370
Covariates	NO	YES	YES	YES
Bandwidth Selector	CCT	CCT	CCT	CCT
Mean Dep. Var.	6.893	6.893	6.560	5.073
Bandwidth	2086	2086	2086	2086

Notes: Election years between 1994 and 2015. Outcomes observed between 1998 and 2015. The dependent variable is the natural logarithm of the yearly municipal expenditures per capita in columns (1)–(2), the natural logarithm of the yearly current expenditures per capita in column (3) and the natural logarithm of the yearly capital expenditures per capita in column (4). All specifications include the interaction terms between the runoff dummy and the function of the assignment variable, year fixed effects, macro-region and election year dummies. Estimation methods: local-linear regression as in (1), within the Calonico, Cattaneo, and Titiunik (2014) optimal bandwidth on either side of the population threshold. Standard errors robust to clustering at the municipality level are in parentheses. *, **, *** represent the 10%, 5%, 1% significance levels.



Notes: Election years between 1994 and 2015. Outcomes observed between 1998 and 2015. Municipalities between 13,000 and 17,000 residents. The dependent variables are the residuals from the regression of the natural logarithm of the yearly municipal expenditures per capita, the natural logarithm of the current spending per capita and the natural logarithm of the capital spending per capita on the set of covariates described in Section III. Estimation method: non parametric local-linear regression estimated on each side of the population threshold within the Calonico, Cattaneo, and Titiunik (2014) optimal bandwidth. Markers represent sample averages within bins of 200 residents.

Figure 3: RD plots — expenditures

Table 3: Runoff voting system and composition of current spending

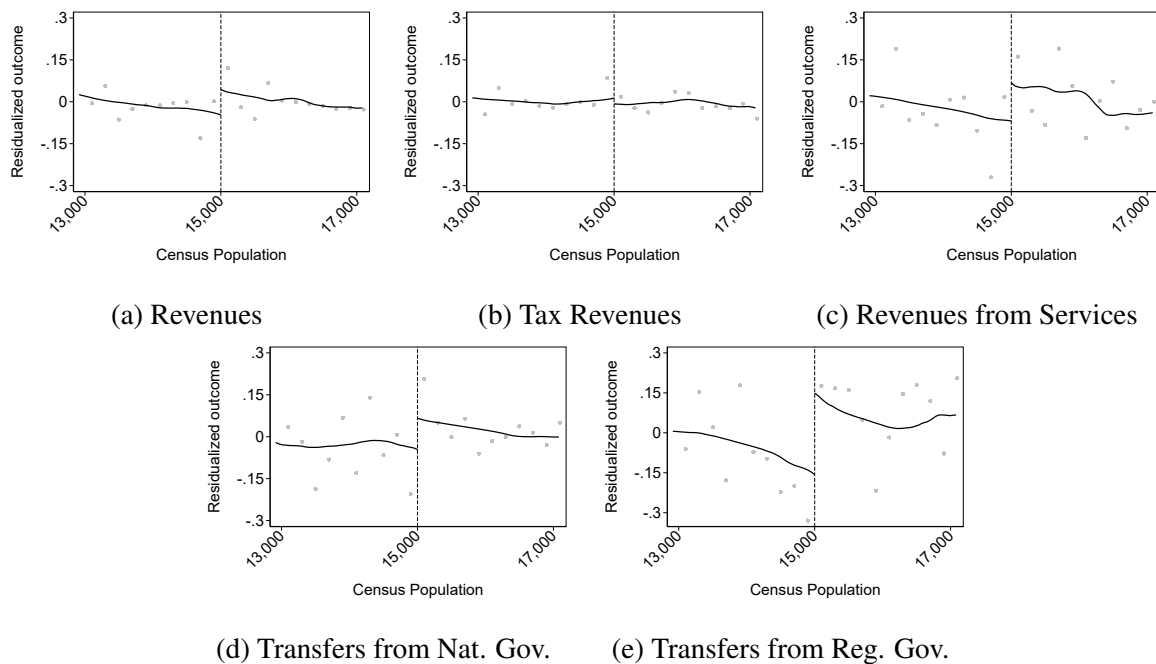
	Administration	Services	Culture and Education	Economy	Welfare
Above 15,000	0.067**	0.235***	0.070	-0.030	0.040
	(0.033)	(0.077)	(0.051)	(0.076)	(0.069)
Observations	3,434	3,434	3,434	3,434	3,434
R ²	0.327	0.283	0.630	0.319	0.499
Covariates	YES	YES	YES	YES	YES
Bandwidth Selector	CCT	CCT	CCT	CCT	CCT
Mean Dep. Var.	5.578	4.652	4.507	4.845	4.417
Bandwidth	2086	2086	2086	2086	2086

Notes: Election years between 1994 and 2015. Outcomes observed between 1998 and 2015. The dependent variable is the natural logarithm of the yearly municipal expenditure per capita for each group of competencies defined in Section III. All specifications include the interaction terms between the runoff dummy and the function of the assignment variable, year fixed effects, macro-region and election year dummies. Estimation methods: local-linear regression as in (1), within the Calonico, Cattaneo, and Titiunik (2014) optimal bandwidth on either side of the population threshold. Standard errors robust to clustering at the municipality level are in parentheses. *, **, *** represent the 10%, 5%, 1% significance levels.

Table 4: Runoff voting system and municipal revenues

	Revenues	Tax Revenues	Revenues from Services	Transfers from Nat. Gov.	Transfers from Reg. Gov.
Above 15,000	0.119***	0.002	0.235***	0.163**	0.354**
	(0.042)	(0.042)	(0.078)	(0.081)	(0.161)
Observations	3,434	3,434	3,434	3,434	3,434
R ²	0.321	0.501	0.328	0.672	0.167
Covariates	YES	YES	YES	YES	YES
Bandwidth Selector	CCT	CCT	CCT	CCT	CCT
Mean Dep. Var.	6.891	5.902	5.103	4.230	2.427
Bandwidth	2086	2086	2086	2086	2086

Notes: Election years between 1994 and 2015. Outcomes observed between 1998 and 2015. The dependent variable is the natural logarithm of the yearly municipal revenues per capita in column (1), the natural logarithm of the yearly revenues per capita from taxation in column (2), the natural logarithm of the yearly revenues per capita from the provision of services in column (3), the natural logarithm of the yearly revenues per capita from transfers from the national government in column (4), and the natural logarithm of the yearly revenues per capita from transfers from the regional government in column (5). All specifications include the interaction terms between the runoff dummy and the function of the assignment variable, year fixed effects, macro-region and election year dummies. Estimation methods: local-linear regression as in (1), within the Calonico, Cattaneo, and Titiunik (2014) optimal bandwidth on either side of the population threshold. Standard errors robust to clustering at the municipality level are in parentheses. *, **, *** represent the 10%, 5%, 1% significance levels.

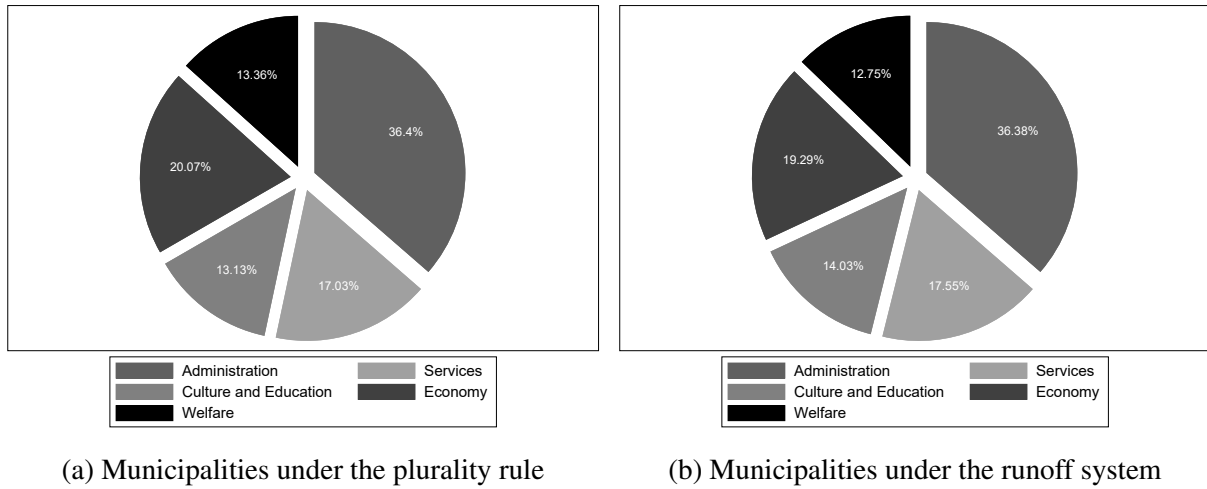


Notes: Election years between 1994 and 2015. Outcomes observed between 1998 and 2015. Municipalities between 13,000 and 17,000 residents. The dependent variable is the residual from the regression of the natural logarithm of the yearly municipal revenues per capita in graph (a), the natural logarithm of the yearly municipal revenues per capita from taxation in graph (b), the natural logarithm of the yearly municipal revenues per capita from the provision of services in graph (c), the natural logarithm of the yearly municipal revenues per capita from transfers from the national government in graph (d), the natural logarithm of the yearly municipal revenues per capita from transfers from the regional government in graph (e) and the natural logarithm of the yearly municipal revenues per capita from transfers from the private sector in graph (f), on the set of covariates described in Section III. Estimation method: non parametric local-linear regression estimated on each side of the population threshold within the Calonico, Cattaneo, and Titiunik (2014) optimal bandwidth. Markers represent sample averages within bins of 200 residents.

Figure 4: RD plots — revenues

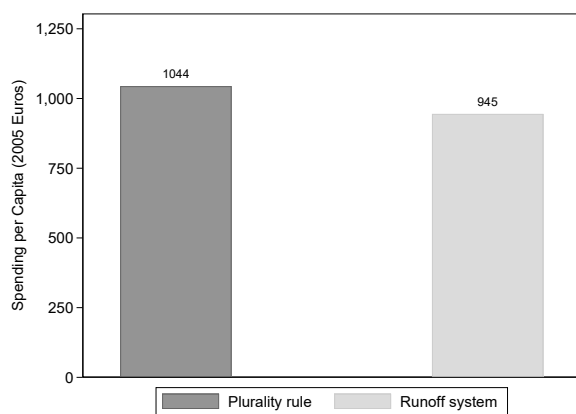
Appendix

A Figures and Tables

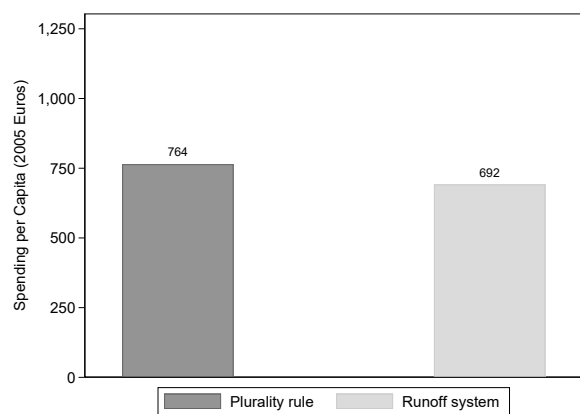


Election years between 1994 and 2015. Outcomes observed between 1998 and 2015. Municipalities within the Calonico, Cattaneo, and Titiunik (2014) optimal bandwidth.

Figure A.1: Composition of current spending



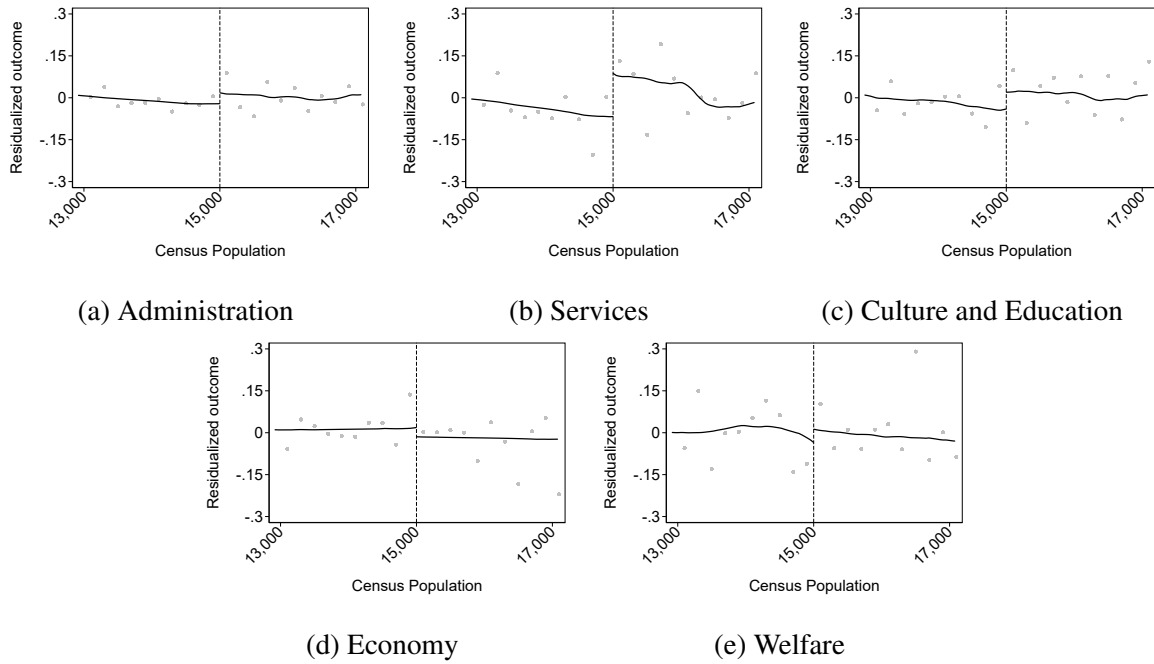
(a) Expenditures



(b) Current Spending

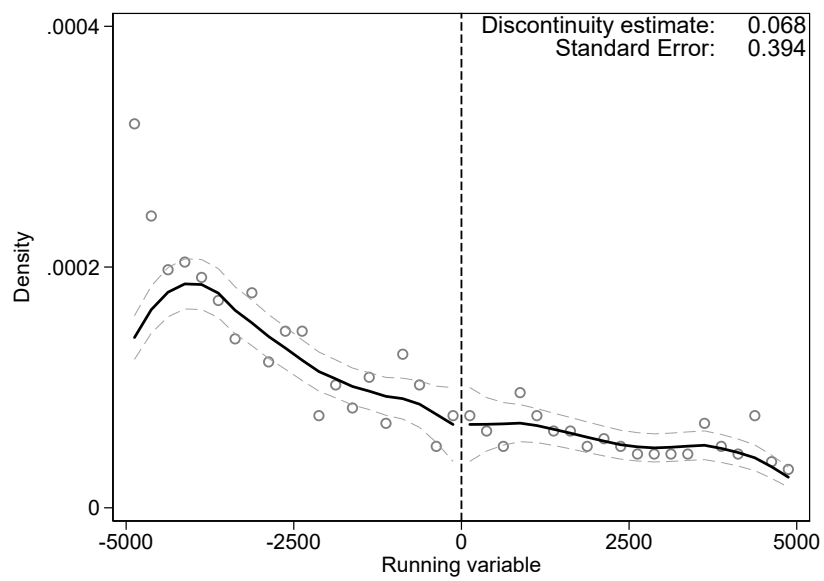
Notes: Election years between 1994 and 2015. Outcomes observed between 1998 and 2015. Estimation method: Fitted values for the untreated municipalities are obtained with local-linear regression as in equation (1) within the Calonico, Cattaneo, and Titiunik (2014) optimal bandwidth on each side of the discontinuity, and covariates described in Section III. Fitted values for the treated municipalities are obtained adding to the untreated municipalities the estimated coefficient from equation (1) within the Calonico, Cattaneo, and Titiunik (2014) optimal bandwidth on each side of the discontinuity, and covariates described in Section III. All values are then transformed to per 2005 per capita euros through an exponential transformation. Regressions include the interaction terms between the runoff treatment and the assignment variable.

Figure A.2: Magnitude of the effect in monetary terms



Notes: Election years between 1994 and 2015. Outcomes observed between 1998 and 2015. Municipalities between 13,000 and 17,000 residents. The dependent variable is the residual from the regression of the natural logarithm of the yearly municipal expenditure per capita for each group of competences defined in Section III on the set of covariates described in Section III. Estimation method: non parametric local-linear regression estimated on each side of the population threshold within the Calonico, Cattaneo, and Titiunik (2014) optimal bandwidth. Markers represent sample averages within bins of 200 residents.

Figure A.3: RD plots — composition of expenditures



Notes: Municipalities between 10,000 and 20,000 residents. Plots represent the estimated density of the average official population around the 15,000 residents' threshold between the 1991, 2001 and 2011 population Censuses. Formal log-density discontinuity and standard errors are computed performing a formal McCrary (2008) with optimal bandwidth.

Figure A.4: McCrary density test for manipulation of the running variable

Table A.1: Balance of pre-determined characteristics

A. Geographical Characteristics					
	(1) Surface	(2) Altitude	(3) Mount. Surface	(4) Density	(5) South
Above 15,000	8.358 (9.776)	44.102 (27.118)	0.053 (0.067)	0.001 (0.001)	-0.000 (0.000)
Observations	544	544	544	544	544
R ²	0.248	0.191	0.087	0.240	1.000
Mean Dep. Var.	56.85	152.8	0.164	0.00376	0.296
B. Demographic Characteristics					
	(1) Elderly	(2) Migrants	(3) Retired	(4) Students	(5) Unemployment
Above 15,000	0.003 (0.006)	-0.000 (0.001)	0.007 (0.009)	0.002 (0.002)	0.002 (0.003)
Observations	544	544	544	544	544
R ²	0.312	0.242	0.221	0.084	0.462
Mean Dep. Var.	0.141	0.00488	0.155	0.0727	0.0274
C. Economic Characteristics					
	(1) Rural Surface	(2) Docg	(3) Farms	(4) Tourism	(5) Touristic Supply
Above 15,000	0.024 (0.040)	-1.025 (0.690)	59.795 (98.996)	-0.002 (0.002)	0.003 (0.050)
Observations	544	544	544	544	544
R ²	0.194	0.104	0.387	0.081	0.037
Mean Dep. Var.	0.589	1.384	645.5	0.0138	0.0809

Notes: Election years between 1994 and 2015. Data collapsed at the town-by-census level. In each regression, the dependent variable is one of the baseline covariates described in Section III. All specifications include the interaction terms between the runoff dummy and the function of the assignment variable, year fixed effects, macro-region and election year dummies. Estimation methods: local-linear regression as in (1), within the Calonico, Cattaneo, and Titiunik (2014) optimal bandwidth, as well as a fixed bandwidth of 1,000 residents on either side of the population threshold. Standard errors robust to clustering at the municipality level are in parentheses. *, **, *** represent the 10%, 5%, 1% significance levels.

Table A.2: Results excluding years between 1998 and 2009

	Total Spending	Current Spending	Administration	Services	Revenues	Revenues from Services	Transfers from Nat. Gov.	Transfers from Reg. Gov.
Above 15,000	0.123**	0.104**	0.087**	0.146	0.120**	0.216**	0.086	0.482**
	(0.056)	(0.047)	(0.043)	(0.093)	(0.058)	(0.090)	(0.125)	(0.222)
Observations	1,240	1,240	1,240	1,240	1,240	1,240	1,240	1,240
R ²	0.356	0.444	0.474	0.326	0.360	0.327	0.641	0.183
Covariates	YES	YES	YES	YES	YES	YES	YES	YES
Bandwidth Selector	CCT	CCT	CCT	CCT	CCT	CCT	CCT	CCT
Mean Dep. Var.	6.770	6.505	5.517	4.481	6.786	4.950	3.419	2.182
Bandwidth	2086	2086	2086	2086	2086	2086	2086	2086

Notes: Election years between 2006 and 2015. Outcomes observed between 2010 and 2015. The sample is restricted to the years following the abolition of the position of Direttore Generale in all municipalities below 100,000 residents. All specifications include the interaction terms between the runoff dummy and the function of the assignment variable, year fixed effects, macro-region and election year dummies. Estimation methods: local-linear regression as in (1), within the Calonico, Cattaneo, and Titiunik (2014) optimal bandwidth, as well as a fixed bandwidth of 1,000 residents on either side of the population threshold. Standard errors robust to clustering at the municipality level are in parentheses. *, **, *** represent the 10%, 5%, 1% significance levels.

Table A.3: Results with controls for other changes in voting rule

	Total Spending	Current Spending	Administration	Services	Revenues	Revenues from Services	Transfers from Nat. Gov.	Transfers from Reg. Gov.
Above 15,000	0.124*	0.121**	0.046	0.296**	0.122*	0.359***	0.033	0.291
	(0.064)	(0.059)	(0.053)	(0.121)	(0.065)	(0.117)	(0.128)	(0.218)
Disjoint	0.135	0.013	0.141	-0.254	0.122	-0.348	-0.322	1.159**
	(0.195)	(0.177)	(0.146)	(0.324)	(0.196)	(0.306)	(0.329)	(0.544)
N. Lists	-0.004	-0.004	0.001	-0.005	-0.004	-0.011	0.024**	-0.016
	(0.005)	(0.004)	(0.004)	(0.008)	(0.005)	(0.008)	(0.009)	(0.016)
Observations	3,155	3,155	3,155	3,155	3,155	3,155	3,155	3,155
R ²	0.331	0.366	0.333	0.295	0.318	0.335	0.655	0.177
Covariates	YES	YES	YES	YES	YES	YES	YES	YES
Bandwidth Selector	CCT	CCT	CCT	CCT	CCT	CCT	CCT	CCT
Mean Dep. Var.	6.884	6.557	5.577	4.640	6.884	5.095	4.138	2.442
Bandwidth	2086	2086	2086	2086	2086	2086	2086	2086

Notes: Election years between 1994 and 2015. Outcomes observed between 1998 and 2015. Additional controls for the proportion of disjoint votes expressed in favor or against mayoral candidates compared to the parties in their support, as well as for the number of lists running for the municipality council are included. All specifications include the interaction terms between the runoff dummy and the function of the assignment variable, year fixed effects, macro-region and election year dummies. Estimation methods: local-linear regression as in (1), within the Calonico, Cattaneo, and Titiunik (2014) optimal bandwidth, as well as a fixed bandwidth of 1,000 residents on either side of the population threshold. Standard errors robust to clustering at the municipality level are in parentheses. *,**,*** represent the 10%, 5%, 1% significance levels.

Nontechnical Summary

Why do fiscal policies differ across countries? A prominent explanation refers to differences in political institutions. On the one hand, institutions determine the selection of politicians with different preferences and characteristics. On the other hand, they endow elected officials with different incentives once in office. Voting systems, in particular, determine how individual preferences are transformed into a probability that each candidate wins the electoral competition. For instance, some systems require candidates to receive more than half of the votes nationwide. In contrast, others demand a simple majority or to win a sufficient number of districts.

However, the empirical knowledge about the link between voting systems and fiscal policy is limited for at least two reasons. First, existing results rely on cross-country correlations. Cross-country studies lack exogenous variation since the constitutional features might depend on omitted factors influencing both policy choices and economic outcomes. Second, most of the existing evidence focuses on comparing systems in place to select members of national parliaments. In contrast, a formal comparison of fiscal policy outcomes implemented under alternative voting systems for the election of executives is lacking.

This paper studies how selecting the head of the political power under the runoff (or dual-ballot) system, compared to the single-ballot plurality (or first-past-the-post) rule, affects the size of government and the composition of spending and revenues. Under the plurality rule, the candidate who receives the largest vote share is announced as the winner. Under the runoff system, if none of the candidates surpasses a predetermined share of the votes, the top two vote recipients compete again in a second round, typically occurring a couple of weeks later, to determine the winner.

The empirical analysis exploits an ideal natural experiment. In Italian municipalities, mayors (head of the local executive branch) are selected using either the plurality rule or the runoff system based on a population threshold. Therefore, it is possible to compare fiscal policy in municipalities just below the population threshold and those who lie just above the cutoff by employing a Regression-Discontinuity (RD) design.

The results show that the runoff causes an increase in municipal expenditures and revenues

of 12 percent compared to the plurality. This effect is primarily driven by an increase in current spending, which, on the one hand, should be the type of spending to which voters react faster and, on the other hand, is more under the direct control of local policymakers in the short run. Municipalities under the runoff system spend more on administration and on the provision of services to citizens. On the contrary, current spending targeting specific economic agents in sectors like tourism, commerce, agriculture and production, and welfare spending do not change as a function of the voting rule. The results also show that revenues from taxation do not vary with the electoral system. Instead, municipalities under the runoff system levy additional revenues from providing services and receiving much larger transfers from the national and the regional governments.