Ballot Design, Mayor's Dilemma: How Electoral Rules Shape Governance

Guglielmo Cori[1], Marco Di Cataldo[1], and Stefano Magrini[1]
[1]Ca' Foscari University of Venice, Italy

February 2026

Abstract

The paper examines how political competition, shaped by electoral rules, affects municipal spending, and whether responses differ between re-running incumbents and one-term-only mayors. We exploit a quasi-natural experiment in Italy: the sharp 15,000-inhabitant threshold at which municipalities switch from single-ballot elections to a run-off system. Using a sharp regression discontinuity design, we estimate the causal effect of this institutional change on municipal expenditure commitments (Italian *impegni di spesa*) over the term of office and stratify the analysis by mayors' re-election incentives. The results reveal opposite responses concentrated near elections: incumbents seeking re-election increase spending in the final years of the term, whereas one-term-only mayors display null or negative effects, with a decline in current expenditure. These patterns are driven primarily by current education spending, which rises for re-running incumbents and falls for one-term-only mayors. The evidence is consistent with an electoral-competition mechanism in which, as elections approach, incumbents reallocate resources toward visible and quickly adjustable services that can signal responsiveness, while outgoing mayors—facing weaker accountability—do not sustain (and may even retrench) such spending. Overall, the findings identify political competition as a key local driver of political budget cycles and highlight the importance of carefully accounting for heterogeneity in candidates' incentives.

Introduction

This paper studies how electoral rules shape local fiscal policy by changing the intensity of political competition and, in turn, incumbents' incentives to allocate public resources over the electoral cycle. While a large literature documents political budget cycles—systematic changes in spending levels or composition as elections approach—most empirical work treats competition as an ambient feature of the political environment rather than as an institutional outcome that can be shifted exogenously. At the same time, research on electoral rules emphasizes how institutions affect entry, coalition formation, and the structure of political incentives, but often evaluates average fiscal outcomes without explicitly linking competition to the timing and composition of spending over the mandate.

We bridge these strands by exploiting an institutional discontinuity in Italian municipal elections. In municipalities above 15,000 inhabitants, the mayor is elected under a two-round system (run-off); below the threshold, the mayor is elected under a single-ballot plurality rule. Prior evidence shows that run-off rules generate a larger number of candidates around the threshold, implying a discrete increase in competition. We leverage this discontinuity to estimate how competition affects planned municipal expenditures (*impegni di spesa*), with particular attention to heterogeneity in incumbents' incentives. The key distinction is between incumbents who seek re-election and mayors who complete their term without standing again ("one-term-only"). This split is central because the same competitive environment can have different behavioral implications when electoral accountability differs: candidates who face voters again may have incentives to signal competence and target salient groups, while outgoing mayors may be less willing to sustain spending with benefits that accrue mainly after they leave office.

Our results show that competition induced by the run-off system leads to sharply heterogeneous fiscal responses. Re-running incumbents increase spending as elections approach, whereas one-term-only mayors display null or negative effects, particularly in current expenditure. The most robust and economically meaningful adjustments are concentrated in current education spending, which rises for re-running incumbents and falls for one-term-only mayors. This pattern is consistent with a salience/visibility mechanism: education-related current expenditures contain operational items that are quickly adjustable and electorally visible, and therefore attractive for incumbents who seek re-election when races become tighter. By contrast, outgoing mayors—facing weaker electoral discipline—may be less willing to maintain such spending and may retrench items whose benefits would largely accrue to successors.

Related literature

The paper contributes to two connected literatures. First, it relates to political budget cycles. Standard models explain pre-electoral policy distortions as strategic behavior by incumbents under voter myopia or asymmetric information (Nordhaus (1975) and Rogoff (1990)). In these frameworks, incumbents can tilt policy toward actions that voters observe more easily or value more in the short run, especially as elections approach. Empirically, cycles often show up less as changes in total spending and more as shifts in composition toward visible and easily adjustable items (Drazen and Eslava (2010) and Shi and Svensson (2006)), suggesting that expenditure categories are a key margin of adjustment.

Second, it speaks to work on electoral rules and political competition. Electoral institutions affect entry, strategic voting, and the structure of competition (Duverger (1951) and Osborne and Slivinski (1996)). In particular, run-off elections can sustain larger candidate sets than single-ballot plurality, generating a discrete increase in competition around institutional thresholds (Bordignon et al. (2016), Fujiwara (2011), and Palfrey (1988)). The fiscal implications of stronger competition are theoretically ambiguous: it may discipline incumbents and reduce rents, but it can also strengthen incentives for targeted, electorally efficient spending when races become tighter (Lizzeri and Persico (2005)). By exploiting an institutional cutoff that shifts the electoral rule and, in turn, competition, the paper links these two literatures in a setting where changes in competitive pressure are plausibly exogenous.

Methodology and identification

We exploit the Italian institutional setting created by Law 81/1993 and the local-government framework consolidated in the *TUEL*. The key feature is the sharp 15,000-inhabitant cutoff that deterministically assigns municipalities to a single-ballot system below the threshold and to a run-off system above it. We focus on municipalities in ordinary-statute regions and restrict attention to those with population between 10,000 and 20,000 to maintain local comparability around the cutoff and to avoid confounding institutional differences in special-statute regions. Population is measured using the most recent legally relevant Census, which determines the applicable electoral rule. The running variable is municipal population, centered at 15,000; treatment is the run-off regime.

The empirical strategy is a sharp Regression Discontinuity Design (RDD). Under standard assumptions—most importantly, continuity of potential outcomes in the running variable at the cutoff—the causal effect of the electoral-rule change is identified by the discontinuity in the conditional expectation of the outcome at 15,000 inhabitants. We estimate the local average treatment effect at the threshold using a combination of nonparametric and parametric approaches. Our baseline uses local polynomial methods with robust bias correction. We employ a triangular kernel and MSE-optimal bandwidth selection, with mass-points correction to address discreteness in the running variable. Inference relies on cluster-robust standard errors at the municipality level.

We complement the baseline with weighted least squares specifications within the selected bandwidth window. These parametric models include flexible controls for the running variable and allow for different slopes on either side of the cutoff through interactions with treatment, while incorporating predetermined covariates and fixed effects for election timing and macro-regional area to improve precision. In addition, we implement a fully data-driven estimator that selects bandwidth and smoothing parameters based on predictive performance near the cutoff, providing a sensitivity check against tuning choices.

Our dataset combines electoral and fiscal microdata at the municipality–term level over 1998–2014. Electoral outcomes and mayor characteristics are drawn from the Ministry of the Interior (Eligendo/DAIT).

Data on planned expenditure commitments (*impegni di spesa*) are obtained from DAIT's local-finance archives and are available both in aggregate and disaggregated by accounting classification (current vs. capital and *funzioni/servizi*). Predetermined municipal covariates are collected from ISTAT and DIPE and include demographics and local economic conditions from the 1991 Census, as well as time-invariant geographic characteristics from 2011. The baseline analysis sample includes 906 municipalities around the cutoff, comprising 493 terms in which the incumbent runs for re-election and 413 one-term-only cases.

Results and discussion

The results are presented in three steps: pooled estimates, split-sample estimates by incentive group, and a function-level decomposition that identifies which items drive the aggregate patterns.

In the pooled sample, the evidence indicates weak, if any, effects of increased competition on overall budget outcomes. The only recurring signal is higher total capital spending near the end of the term, but it appears only in some specifications and varies in magnitude. This muted pooled response is consistent with heterogeneity: offsetting reactions across groups can attenuate average effects even when underlying behavioral responses are economically meaningful.

Split-sample estimates reveal this heterogeneity. Among incumbents seeking re-election, increased competition is associated with a strong and consistent rise in spending, concentrated in the last three years of the term. Both current and capital expenditures increase, and the discontinuities strengthen as elections approach, in line with political budget-cycle logic: tighter races raise the incentives to mobilize resources when voter attention and the electoral returns to visible actions are highest. By contrast, for one-term-only mayors the effects are generally close to zero and often negative for current spending, with larger declines closer to the election in some specifications. This pattern suggests that competition does not uniformly raise spending: when incumbents do not face re-election, stronger competition does not create the same incentive to expand visible services, and outgoing mayors may be less willing to sustain spending whose benefits would largely accrue to successors.

The function-level decomposition provides sharper evidence on the mechanism. Although statistical significance is less stable at this level of disaggregation, one result stands out as robust and economically large: current education spending. For re-running incumbents, current education expenditure increases discontinuously at the cutoff, especially in the pre-election period; for one-term-only mayors, the discontinuity is negative. Overall, the findings show that an exogenous increase in political competition can generate sharply different fiscal responses depending on incumbents' re-election incentives, highlighting that aggregate estimates can mask substantial heterogeneity in how politicians adjust spending as elections approach.

References

Bordignon, M., Nannicini, T., & Tabellini, G. (2016). Moderating political extremism: Single round versus runoff elections under plurality rule. *American Economic Review*, *106*(8), 2349–2370.

Drazen, A., & Eslava, M. (2010). Electoral manipulation via voter-friendly spending: Theory and evidence. *Journal of Development Economics*, *92*(1), 39–52.

Duverger, M. (1951). *Les partis politiques: Leur organisation et leur activité dans l'état moderne.* Armand Colin.

Fujiwara, T. (2011). A regression discontinuity test of strategic voting and duverger's law. *Quarterly Journal of Political Science*, *6*(3–4), 197–233.

Lizzeri, A., & Persico, N. (2005). A drawback of electoral competition. *Journal of the European Economic Association*, *3*(6), 1318–1348.

Nordhaus, W. D. (1975). The political business cycle. *The Review of Economic Studies*, *42*(2), 169–190.

Osborne, M. J., & Slivinski, A. (1996). A model of political competition with citizen-candidates. *The Quarterly Journal of Economics*, *111*(1), 65–96.

Palfrey, T. R. (1988). A mathematical proof of duverger's law. *Working Paper.*

Rogoff, K. (1990). Equilibrium political budget cycles. *The American Economic Review*, *80*(1), 21.

Shi, M., & Svensson, J. (2006). Political budget cycles: Do they differ across countries and why? *Journal of Public Economics*, *90*(8-9), 1367–1389.