Clever Politicians: Evidence from strategic bankruptcies in Italian municipalities[*]

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Abstract

We study the reaction of low vs. high-skilled politicians – proxied by their educational attainments – to a reform that introduces financial and career penalties in case the local administration is deemed co-responsible for the bankruptcy of the municipality. We leverage plausibly exogenous variation induced by close elections between a mayoral candidate who holds a college degree and a mayoral candidate who did not attend college. To start, we document that graduate mayors on average implement a more responsible fiscal policy and are more capable of attracting external resources to the municipality's budget. Upon the introduction of penalties, however, skilled politicians tend to declare bankruptcy with a higher probability than low-skilled politicians. The effect is concentrated in the first year of the term, indicating that skilled mayors take advantage of the penalty regime to declare immediate bankruptcy to avoid the risk of being deemed responsible in the event of a later declaration or to blame their predecessors.

JEL Classification: H72, H74
Keywords: Municipality, Bankruptcy, Local debts, Local politician

1   Introduction

In setting up a proper institutional structure for the different levels of government, a well-known problem is the difficulty in building up mechanisms that provide correct financial incentives to local governments. Cities, towns, provinces, and regions are typically largely funded by intergovernmental transfers because local revenues are often insufficient to finance local services; at the same time, sub-national bodies typically offer services that are mandated by the central government or by the legislation and that have to be provided to citizens whatever the financial conditions of the local government are. This might create a well-known phenomenon in intergovernmental fiscal relationships that the literature typically refers to as the "soft budget constraint syndrome" (e.g., Kornai (1986), Kornai et al. (2003)). Expecting to be rescued by the central government in case of financial difficulties, local governments may be tempted to engage in a too-risky financial behavior that turns out to be unsustainable, in turn forcing the central government to intervene and provide financial assistance. If these problems are very widespread, they might threaten the sustainability of public finance at large (e.g., Bordignon (2000)). Several devices, which include specific accounting or fiscal rules, and strict limits to borrowing for local authorities, find their ultimate rationale in the perception of this latent risk. However, such institutional constraints are often proved to be insufficient, leaving the soft budget problem typically unaddressed (e.g., Rodden et al. (2003)).

An alternative strategy to tackle the problem involves imposing penalties on the local governments that ask the central government for financial assistance. This punishment strategy might affect both citizens and local administrators (local politicians or officials). For example, the former might be asked to pay higher local taxes or to give up the fruition of non-essential services; the latter may face a limitation of their sovereignty. These arrays of potential costs are often collected in specific "bankruptcy procedures" of local governments (e.g., Herold (2018)); jurisdictions that ask for central government support enter into a specific legal framework that might impose a detailed set of special requirements and actions on local administrators. Central legislators face a trade-off in designing bankruptcy procedures for local governments. If the punishment strategy is too harsh, there is an incentive for local government to try to postpone bankruptcy as long as possible, perhaps leaving this choice to future governments, at the risk of worsening the financial conditions of the community or the services offered to citizens even further. On the other hand, soft bankruptcy procedures might provide both an incentive to more irresponsible fiscal behavior *ex-ante*, exacerbating the soft budget syndrome, and an incentive to recur to bankruptcy too often *ex-post*, in an attempt to shift the costs of the bankruptcy to the rest of the national community.

In this paper, we study a reform of the bankruptcy procedures for Italian municipalities introduced in Italy in 2011. The reform introduced individual financial and career

penalties on current and former local administrators who were deemed co-responsible of the default of their municipal administration. Specifically, politicians since the reform are exposed to the risk of paying a sizeable fine (up to 10 times their monthly wage) and of being forbidden to run again for a political position (for ten years) at any level of government, including the regional and the national ones. It should be noticed that the latter is a harsh penalty, as it represents a *de facto* suspension of passive electoral rights, that is quite uncommon in mature democracies and usually limited to cases of very severe criminal violations.

Declaring bankruptcy is, at least at the margin, a choice at the discretion of the local government, particularly of the currently incumbent mayor. Although there might be exogenous factors (specifically, the inability to approve ex-ante a balanced budget) that might force a mayor to declare bankruptcy even if she would have preferred to avoid it, in general, local governments have sufficient room in formulating a provisional budget (for example, by moving some spending to the future or by stating an improvement in tax revenues collection) that allows them to postpone the need for a formal declaration of bankruptcy. Moreover, declaring bankruptcy typically involves many explicit costs as well as benefits (at least in the Italian case). Among the former, is a partial loss of sovereignty, as following the bankruptcy declaration a government commissioner is appointed who takes care of existing debts and supervises spending by the governing mayor and the supporting majority in the council, including hiring procedures. Moreover, a compulsory increase in local taxes follows the bankruptcy declaration, which might lead to a loss of citizens' support for the running local administration. Among the benefits, is the fact that local debts stop accumulating (interests are legally frozen) and the Commissioner takes care of them by enforcing a deal with creditors by alienating municipal assets and in some cases recurring to extra funds from the national government. While certainly costly in terms of a loss of reputation and sovereignty, a bankruptcy might then allow the ruling municipality government to start again with a "clean sheet".

We hypothesize that the reform affected the incentives faced by incumbent politicians in municipalities at the fence of declaring bankruptcy. On the one hand, some politicians may be induced by the reform to avoid declaring bankruptcy to escape the stricter penalties. On the other hand, other politicians may react to the reform by declaring bankruptcy before implementing any fiscal policy (i.e., just after being elected) to avoid being deemed co-responsible for the state of financial distress. The latter option sounds more appealing to a rational political agent: trying to avoid bankruptcy may involve taking riskier fiscal policy decisions – which would increase the probability of being exposed to penalties if the *manoeuvre* does not succeed – without the warranty that the financial distress will be avoided for many years to come.

We test our hypothesis by investigating whether high-skilled mayors (as proxied by their educational attainment) react to the reform by increasing the probability of filing

for bankruptcy compared to low-skilled mayors. Specifically, we estimate a Regression-Discontinuity Design leveraging a plausibly exogenous variation induced by close elections between a mayoral candidate who holds a college degree and a candidate who does not hold a college degree. This allows us to control for any observable and unobservable characteristics of the municipality that may drive both the probability of facing a situation of financial distress and the probability that voters choose a college-graduated candidate as the new mayor. Educational attainment is a proxy normally used in the literature as an indicator of quality (Gamalerio and Trombetta, 2023), as international empirical evidence typically shows that graduate mayors are able to run their municipalities more efficiently (Meriläinen, 2022).

We start by documenting that college-graduated mayors tend to implement a more responsible fiscal policy than other mayors (3 percent lower budget deficit) despite an overall larger size of budget (7 percent higher expenditures) as they are more capable of attracting financial resources from other levels of government (+8 percent capital transfers and +4.5 percent current transfers). Before financial and career penalties were introduced, bankruptcy declarations were uncommon and equally likely for college-graduated and other incumbents. Since the reform, instead, we estimate an economically very sizeable effect of the mayor's education on the probability of filing for bankruptcy during the term that goes in the direction consistent with our hypothesis. Mayors holding a college degree are 0.6—1 percentage point more likely to declare bankruptcy than other mayors. Rescaling the estimated coefficients by the proportion of distressed municipalities in the control group implies that college graduates become, after the reform, twice as likely to declare bankruptcy than mayors without a college diploma. The estimated difference is concentrated in the same year of the previous election and in the first year after the election.

Why did it happen? We interpret our result as an effect of the higher awareness of well-educated mayors about the costs and benefits of declaring bankruptcy. Doing it immediately after being elected reduces the risk of being considered responsible for the financial troubles of the municipality as the former administration is then easier to blame. This might reduce the loss of consensus in the electorate, but more importantly, it might reduce the risk of not being allowed to run in further future elections. Moreover, the latter is a penalty that might be particularly severe for a graduate mayor with potentially higher political ambitions and better prospects of promotions to upper tiers of government than a non-graduate one. Indeed, as one would have expected, we find that the effect is powerful when we only consider graduate "freshmen", that is, new mayors elected in elections when former mayors did not participate (either because they are subject to a term limit or for other reasons). Being "new" makes it easier to shift the blame on the previous administration (Abad et al., 2022).

2 Italian municipalities and bankruptcy procedures

Municipalities are a key component of the Italian system of government, representing the layer closer to citizens. They are in charge of a wide array of services, including general administrative services (like the registry office) and local public services (like transportation, waste collection and management, and social services). Municipalities are also responsible for the largest share of public investments. Up to the end of the '80s, municipalities were entirely financed with grants from the Central government. This model created large deficits in municipal budgets and the need for the central government to bail them out. To make local governments more fiscally accountable, new municipal taxes were introduced at the beginning of the '90s, including a property tax on the cadastral value of dwellings (since 1992) and a municipal surcharge on the personal income tax (since 1998).

A mayor (and a municipal council) elected every five years governs municipalities. Rules for local municipal elections were reformed in 1993, introducing a runoff two-round system for municipalities with at least 15,000 inhabitants and a simple majority voting system for municipalities below this threshold. The figure and the role of the mayor after the 1993 electoral reform are key (e.g., Bordignon et al. (2020): she represents the municipality and is responsible for the administration; she can also appoint the municipal executive committee and repeal any committee member. The mayor is subject to a term limit of two mandates.

Our focus in this paper is on the role of the mayor in managing the financial difficulties of her municipality. The bankruptcy procedure for Italian municipalities was introduced in the Italian legislation in the late '80s, thanks to art. 25, *Decreto Legge* n. 66/1989. This early legislation was then included in the *Testo Unico Enti Locali* (TUEL), Law 267/2000, a collection of all regulations concerning local governments. The procedure was introduced to help municipalities unable both to provide essential services to citizens and to pay their debts (art. 244, TUEL). It requires a formal bankruptcy declaration to be irrevocably adopted by the municipal council, together with a report analyzing the causes of the financial crisis.

After this declaration, a "liquidation commissioner" (in Italian, *Organo straordinario di liquidazione*) is appointed with a Presidential Decree, following the Ministry of Internal Affairs proposal. This allows a clear separation between current and past municipal budgets: the commissioner is in charge of managing past budgets, while the mayor and the municipal council are responsible for the current budget.

There are several important financial consequences for the municipality following the bankruptcy declaration, aimed at capping spending and increasing own revenues: i) new mortgage contracts cannot be signed, reducing the ability to realize new investments; ii) current spending is limited; iii) rates of municipal taxes and tariffs (with the notable

exception of the tariff for waste collection) are set at the maximum level allowed by the law for five consecutive years. Compared to these costs, the advantages for the municipality rest on the possibility of stopping the enforcement of executive legal actions on municipal debts.

The legislation on bankruptcies was significantly amended in the period 2011–2012, that is, at the moment of a severe financial crisis for the country, induced by the great financial recession of 2008–2009 and the subsequent "euro crisis". To tackle the crisis, the central government embarked in a severe fiscal adjustment program that lasted several years, involving raising both national and local taxes and a reductions in public spending. Local governments were also asked to contribute to the financial stability of Italy's public accounts. Specifically, local governments were subject to more restrictive constraints on their budget allocation, a hiring freeze and a reform of accounting rules. In the anticipation that this might also result in financial difficulties for the most fragile municipalities, the national government also reformed the pre-existing bankruptcy discipline.

First, the Legislative Decree n. 149/2011 introduced important novelties concerning the political responsibility of local administrators for the bankruptcy of municipalities. In particular, this reform specifies that administrators who are identified as responsible for the financial distress of the municipality by the Court of Audit (*Corte dei Conti*), for actions taken or omitted in the five years before the declaration of bankruptcy, cannot be appointed as members of the municipal council or as auditors in municipalities for ten years. More importantly, the mayor who is recognized as responsible for bankruptcy cannot run for ten years for the same position, or as a candidate for provincial, regional, national, and the European Parliament elections. The mayor is also subject to a pecuniary sanction from a minimum of five to a maximum of ten times the gross monthly income gained at the time of the violation. This is the reform we exploit in the following empirical analysis.

Second, the same Legislative Decree 149/2011 introduced also a new bankruptcy procedure, called "guided bankruptcy" (*dissesto guidato*). The new procedure is a way to prevent bankruptcies when the Court of Audit identifies situations that can easily bring the municipality to default. In these cases, the Court suggests the actions to be taken to the local administrators. If these actions are not taken, then the Prefect can appoint a liquidation commissioner and dissolve the municipal council. Albeit the introduction of guided bankruptcies aimed at reducing politicians' discretion about whether to apply for bankruptcy or not, in practice we could not document any occurrence in which a municipality was forced to apply the procedure and its council was dissolved.

Lastly, in 2012, the Law Decree 174/2012 introduced a multi-annual financial recovery procedure (known as pre-bankruptcy procedure) for those municipalities in structural deficits, which are likely to evolve in a default. The procedure aims at making local administrators accountable in order to restore a balanced budget before ending up in the

bankruptcy procedure. The pre-bankruptcy procedure avoid recurring to the liquidation commissioner, and it leaves in the hand of the mayor and the municipal council the management of the municipality, even if under stricter controls from the Court of Audit to avoid default. The procedure needs to be activated before the Court of Audit initiates the "guided bankruptcy". The multi-annual plan can last between 4 and 20 years, depending on the ratio between debts and municipal current spending and on the population size of the municipality. When the debts are up to 20% of current spending the plan can last 4 years; when the debts exceed 60% of current spending and the population is larger than 60,000 inhabitants then the plan can reach 20 years. The plan must identify the reasons behind the structural deficits, the actions to be taken to restore financial stability, and the financial resources, which can include own revenues, new debts, and the so-called Rotation Funds (*Fondo di Rotazione*), i.e., advance funding from the Central government.

We construct a novel database of all declarations of bankruptcy and pre-bankruptcy filed by Italian municipalities since 1989 by combining data collected by the University of Venice and a textual analysis of municipality's councils and Court of Audits decisions on the matter, featuring information on the main underlying causes of the financial distress in terms of economic and political matters.

Figure 1 summarizes the evolution of bankruptcy and pre-bankruptcy declarations over time. Declarations of distress were relatively popular upon the introduction of the measure and until the end of XX century. Then, Italy experienced a period of financial stability eased by low interest rate and the decision to join the Euro. Indeed, municipality bankruptcies were almost non-existent until the beginning of the financial crisis. Since them, the sum of bankruptcy and pre-bankruptcy decisions has remained on high levels until recently. As documented in panel (b) of Figure 1, bankruptcies and pre-bankruptcies declarations are more common in later months of the year than at the beginning.[1] Election schedule seem to matter too: municipal governments are more likely to file for bankruptcy earlier in the term (i.e., in the same year of the election and after it or in the calendar year after the election) than in the middle or the in the final part of the term.

Figure 2 instead provide a snapshot of the distribution of bankruptcies and pre-bankruptcies on the Italian territory putting together all cases from 1998 to 2023. It is evident from the picture that we are talking of a phenomenon that mostly affect municipalities in the Southern Italian regions, without much difference between bankruptcies and pre-bankruptcies. While there are some limited cases in which even municipalities in the North where forced to declare bankruptcy about 80 per cent of the cases occurred in the Southern regions, particularly in Campania, Calabria and Sicily. These are the poorest Italian regions, with level of income that is just above 50 per cent of the income of the richest regions of the North. It does make sense that municipalities in these ter-

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[1]The spike in July reflects the requirement to municipalities to verify the balancing of their budget at mid year not after July 31$^{\text{th}}$ according to articles 175 and 193 of the TUEL.

ritories might have more problem in funding services adequately, resulting in financial difficulties.
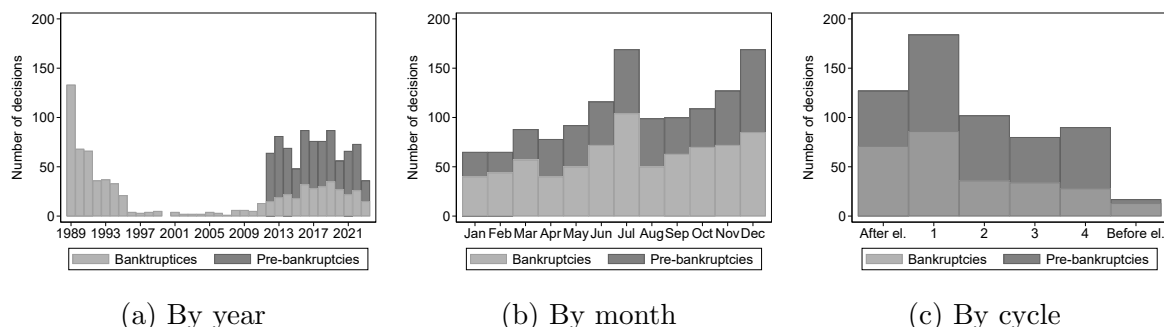

(a) By year

(b) By month

(c) By cycle

Figure 1: Bankruptcies and pre-bankruptcies by year, month, and election cycle

Notes: All bankruptcy and pre-bankrupcy declarations approved by municipal governments between 1989 and 2023. Panel (c) restricts the sample to elections held between 1993 and 2021 and to municipalities belonging to ordinary regions.
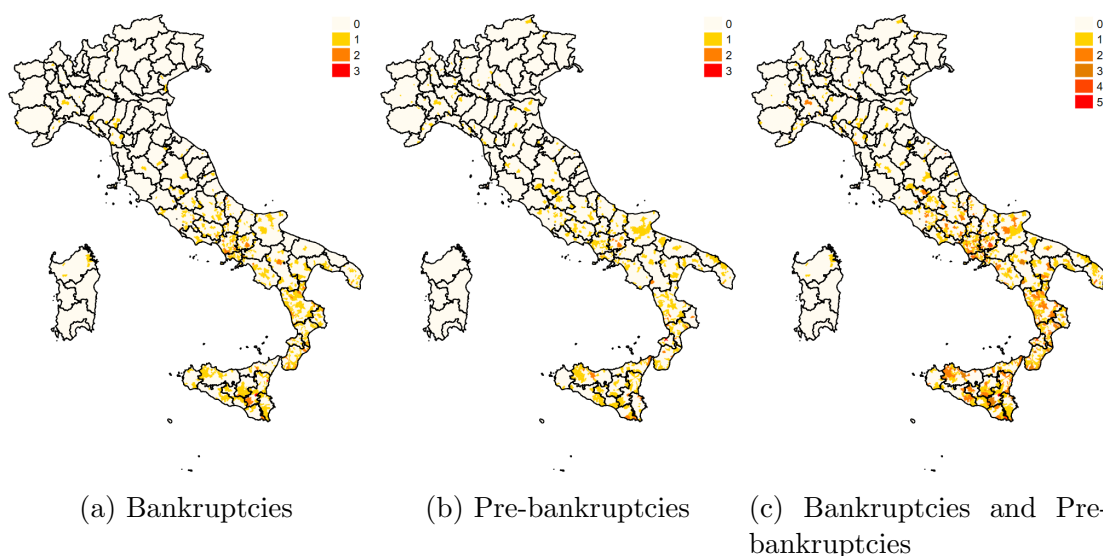

(a) Bankruptcies

(b) Pre-bankruptcies

(c) Bankruptcies and Pre-bankruptcies

Figure 2: Spatial distribution of bankruptcies and pre-bankruptcies

Notes: All bankruptcy and pre-bankrupcy declarations approved by municipal governments between 1989 and 2023.

More specifically, Figure 3 reports the main reasons advanced by municipalities themselves when filing for bankruptcy. It is evident that the main reasons make reference to some form of mis-management of the budget, with the accumulation of off-budget debts and of non performing loans. These are all debts that were not anticipated at the moment of presenting the provisional budget, had to be raised along the way and that ended up by clearly heavily imposing on the municipal ability to fulfil its other commitments. Another important declared reason is the difficulties of collecting revenues, both taxes
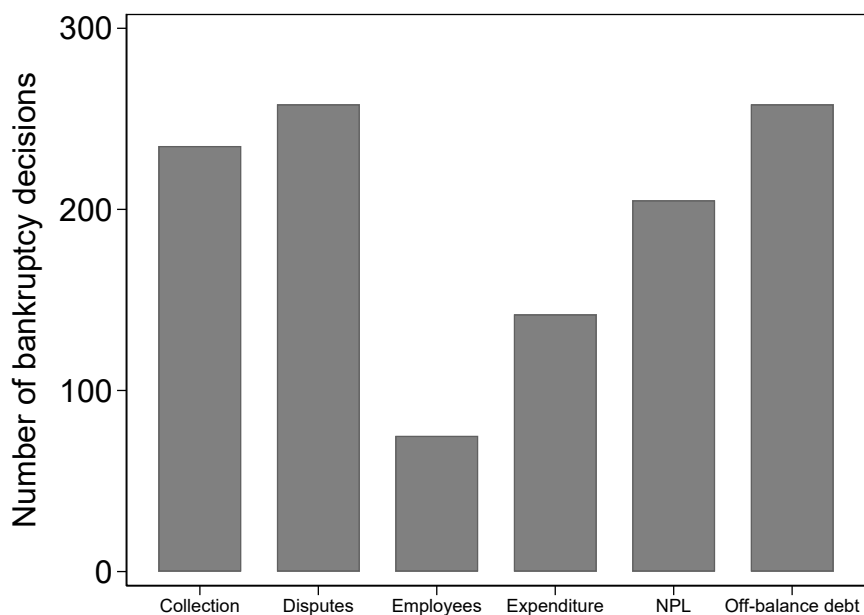
Figure 3: Bankruptcy declarations by causes

Notes: All bankruptcy declarations approved by municipal governments between 1989 and 2023.

and tariffs. The provisional budget is built on forecasts of revenues that the municipality founds itself unable to effectively collect ex post, inducing a lack of resources to finance spending commitments. Legal disputes with the private sector (for instance, on the cost of building an infrastructure mandated to a private firm) also play an important role. On the other hand, labor disputes with the municipal employees or mandated spending commitments that the municipality is unable to finance seem to play a smaller role.

3   Empirical analysis

We are interested in estimating how high-skill and low-skill politicians reacted to the introduction of financial and career penalties in case of co-responsibility of a municipality's bankruptcy decision. Consistently with several studies in the literature (Gagliarducci and Nannicini, 2013), we use the education achievements of politicians as a proxy for their skills. To do so, we combine our data on declarations of bankruptcies and pre-bankruptcies with administrative data released by the Italian Ministry of Internal Affairs containing the result of all municipality elections held in Italy's ordinary regions between 1993 and 2021 and with individual-level data published by the Ministry of Internal Affairs on all politicians who has served as a member of local governments (i.e., councilors, members of the executive committee, and mayors) since 1986. We also add additional control variables from the 1991, 2001, and 2011 censuses and from the Italian Institute of Statistics (ISTAT).

Answering our research question requires reconstructing information about individual characteristics of candidates running to the position of mayors since 1993 – hence, to combine election outcome and individual registry data at the individual candidate level. This approach is subject to the constraint that, in each term, we can only identify politicians who are members of the local administration bodies. However, this limitation does not represent a serious concern for our empirical analysis since the law requires that mayoral candidates who are not elected as the new mayor are usually granted a seat in the municipality council provided that the list of prospect councilors attached to their candidacy surpass the entry threshold for a seat in the council.[2] We also increase the number of mayoral candidates to which we are able to attach individual characteristics tracking their career trajectory over time. In turn, we are able to retrieve individual-level characteristics for approximately 105,000 mayoral candidates (the total of mayoral candidates in our sample is roughly equal to 108,000) running for office in 45,400 elections held in 8,141 municipalities.

Correlating the education level of the incumbent mayor with the probability of filing a bankruptcy procedure would hardly identify the causal effect of interest since many characteristics that have an impact on both the probability of choosing a well-educated mayor and on the probability of bankruptcy might be unobservable. Reverse causality may also be at play in this framework since the identity of the elected mayor may depend on the available budget space (Gamalerio and Trombetta, 2023). We address these concerns by leveraging plausibly exogenous variation induced by close elections narrowly won/lost by a candidate holding a college degree facing a candidate without a college degree and applying a standard Regression-Discontinuity design (RD). To do so, we apply to further sample restrictions: first, we restrict the sample to elections in which we are able to identify at least one candidate holding a college degree and one candidate that does not hold a college degree; second, we restrict the sample to elections held in municipalities with less than 15,000 inhabitants since larger municipalities are subject to a two-round electoral system (Bordignon et al., 2016; Cipullo, 2021) that over-complicates the close-election without much benefits. Panel (a) of Figure A.1 in the Appendix shows that these sample restrictions do not alter the geographical composition of municipalities included in our analysis while Table B.1 in the Appendix shows the descriptive statistics of the main variables included in our analysis.

We estimate the following regression model

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[2] Although the formal entry threshold to obtain a seat in the municipality council is 3 percent, the effective threshold may be significantly higher in small municipalities, where the number of available seats is limited. The municipality council is limited to 10 members in municipalities with less than 3,000 inhabitants.

$$Bankruptcy_{i,t} = \beta_0 + \beta_1 CollegeMayor_{i,t} + f(CollegeWinningMargin_{i,t}) + \varepsilon_{i,t}, \quad (1)$$

where $CollegeWinningMargin_{i,t} = \frac{VSTopCollege_{i,t} - VSTopNocollege_{i,t}}{2}$ and $VSTopCollege_{i,t}$ and $VSTopNocollege_{i,t}$ are equal to the vote share of the candidate receiving the large number of votes among college-degree holders and among candidates without a college degree, respectively. In turn, $CollegeWinningMargin_{i,t}$ is defined only when at least one candidate with college degree and at least one candidate without college degree run for the position of mayor in municipality i holding election at date t. The dependent variable $Bankruptcy_{i,t}$ takes the value 1 if the municipality council of municipality i approves a bankruptcy resolution during the term commenced with elections held on date t and 0 otherwise. $CollegeMayor_{i,t}$ takes the value 1 if the elected mayor in municipality i at time t holds a college degree and 0 otherwise.

Our baseline estimates are local-linear regressions estimated with triangular kernel within the Calonico et al. (2014) optimal bandwidth RD estimates. Panel (b) of Figure A.1 in the Appendix identifies the municipalities included within the Calonico et al. (2014) optimal bandwidth. RD designs identify the causal effect of electing a mayor holding a college degree (vs. electing a mayor without a college degree) subject to the continuity of potential outcomes assumption. We provide evidence in support of the validity of the assumption in Figure A.2 – where we test for manipulation of the running variable $CollegeWinningMargin_{i,t}$ around the threshold applying the Cattaneo et al. (2016) method to perform the McCrary (2008) test – and in Table B.2 – in which we assess the balancing of a large number of pre-determined municipality characteristics – in the Appendix. Figure A.2 speaks loudly against the risk of manipulation of the running variable around the threshold while Table B.2 confirms that municipalities observed on either sides are comparable according to a wide range of dimensions. Specifically, we detect only one statistically significant coefficient (at the 10 percent level) out of 29 variables. Importantly for the validity of our empirical analysis, Table B.2 also documents that the probability that we are not able to identify the education level of at least one candidate is smooth at the threshold.

It is important to notice that exogenous variation induced by close elections allows to identify the causal effect of electing a mayor with a certain individual characteristics but not necessarily the causal effect of that specific individual characteristics on an outcome of interest (Marshall, 2022). The intuition is that RD designs allow to obtain a quasi-randomization of municipality-specific and election-specific characteristics across the two sides of the threshold. However, if some individual politician's characteristics are more represented among candidates holding also other characteristics in the general population of candidates, it will be so also among the winners or losers of close elections. Indeed,

in Table B.3 in the Appendix, we estimate that mayors holding a college degree are, on average, younger and less experienced than their competitors; are prevalently women and more likely to be part of a prestigious profession. We invite the reader to take into account these differences when interpreting our main results – although we also show that our results survive once controlling for all these characteristics. Another channel to bear in mind is that politicians with and without a college degree may appoint individuals with different characteristics as members of the executive body of the municipality (the *Giunta Comunale*). This latter does not appear to be a serious concern in our analysis: in Table B.4, we estimate (1) using as dependent variables individual characteristics of the appointed members of the executive body and find very little discrepancies, with members of the executive appointed by a mayor holding a college degree having served, on average, for a slightly shorter number of years in the past in any position in the municipality administration (difference equal to -0.07 terms).

4   Results

Our first result establishes that mayors that we assume being high-skilled (i.e., the college graduates) indeed implement, on average, a more responsible fiscal policy than those that we label as low-skilled. In Table B.5 in the Appendix, we estimate equation (1) using as dependent variables the (log of) municipality key expenditure and revenue categories. We document that college-graduated mayors tend to increase both spending (+7%) and revenues (+4%) compared to other mayors with extra spending financed through an increase in the capability to attract external resources to the municipality. Specifically, we document that skilled mayors receive more capital transfers (+7%) and more current transfers (+4%). Overall, the (inverse hyperbolic sine of) deficit decreases when the barely elected mayor is a college graduate compared to when the election is narrowly won by the other candidate (-3%).

The results presented in Table B.5 would induce to expect that mayors holding a college degree declare bankruptcy less often as other mayors if the decision about whether to file for bankruptcy was only driven by the state of financial accounts. The results presented in Table 1 speak loudly against this possibility. In column (1), we estimate equation (1) and find that electing a mayor that holds a college degree increases the probability that the municipality applies for bankruptcy during the term by 0.8 percentage points (control mean equal to 0.8%). In column (2), we add a number of pre-determined municipality characteristics to the specification as well as controls for other individual characteristics of the elected mayors which are not balanced at the threshold (i.e., those used as dependent variables in Table B.3. The results are very mildly affected and, if anything, they increase both in magnitude and in statistical precision. In columns (3) and (4), we add to the specifications estimated in columns (1) and (2), respectively,

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controls for province-by-election date fixed effects, thus limiting our comparison only to municipalities that had their election on the very same day and which belong to the same province. This additional control should have no impact on the identification of the coefficient of interest but is presumed to increase the precision of the estimates dramatically due to the fact that declaration of bankruptcies are both spatially clustered (especially in some provinces of Southern Italy) and more prevalent in periods of widespread crisis, as documented in Figure 1 and 2. Indeed, including such sets of controls to the model reduces the estimates slightly while improving statistical precision even further: our most conservative estimate indicate that electing a mayor that holds a college degree nearly doubles the probability that a municipality files for bankruptcy during the term (p¡0.01).

Table 1: Effect of electing a mayor with college education on the probability of municipality bankruptcy

	(1)	(2)	(3)	(4)
Dep. var.:	1 = Bankruptcy during the term			
College Mayor	0.00853*	0.0108**	0.00655***	0.00750***
	(0.00496)	(0.00502)	(0.00250)	(0.00284)
Robust confidence interval	[-0.001;0.020]	[0.001;0.023]	[0.003;0.015]	[0.003;0.014]
Bandwidth	0.0750	0.0730	0.119	0.0470
Bandidth selection	MSE-optimal	MSE-optimal	MSE-optimal	MSE-optimal
Polynomial fit	Linear	Linear	Linear	Linear
Kernel	Triangular	Triangular	Triangular	Triangular
Eff. observations	6276	5853	8975	3949
Observations	14905	14422	14905	14422
Control mean	0.00800	0.00800	0.00700	0.00700
Controls		✓		✓
Province × Election Date FE			✓	✓

Notes: One observation per municipality-term. All elections held between 1993 and 2021 in municipalities subject to a single-ballot plurality system and belonging to ordinary regions. The sample is restricted to elections in which there is at least one mayoral candidate that holds a college degree and at least one mayoral candidate that does not hold a college degree. Estimation method: local-linear regression using triangular kernel weights of equation (1) within the Calonico et al. (2014) MSE-optimal bandwidth. Controls include the official population measured in the last census, density, surface, the share of poor families measured at the last census, and labor force participation rate. Standard errors robust to clustering at the province level are in parentheses. *,**,*** represent the 10%, 5%, 1% significance levels.

Figure 4 offers the reader a visual inspection of the discontinuity in the probability of filing for bankruptcy at the threshold. In the Appendix, we perform a battery of robustness checks to assess the validity of our results. Specifically, we provide evidence that our main result do not depend on either the choice of the linear approximation (B.6 shows that comparable estimates are obtained when using a local quadratic specification) nor on the bandwidth selection approach (A.3 shows that the estimates are not seriously affected when considering bandwidths away from the Calonico et al. (2014) optimal bandwidth).
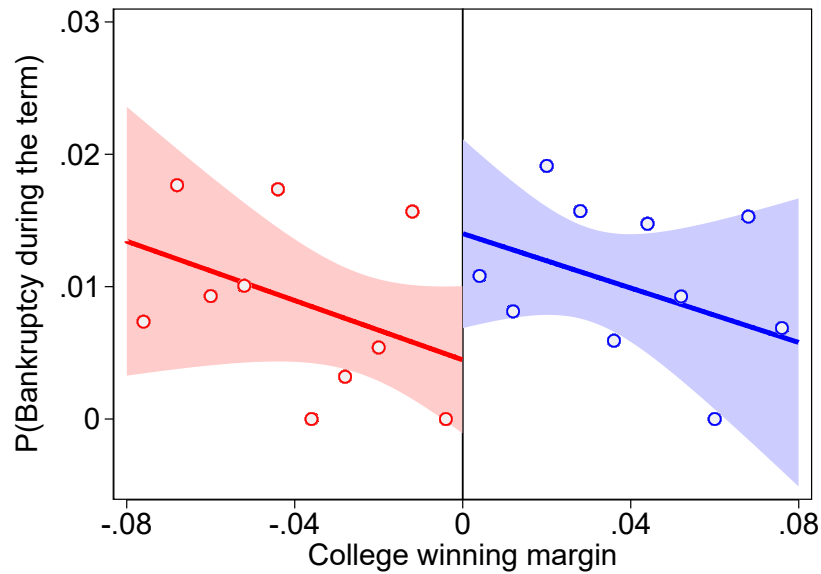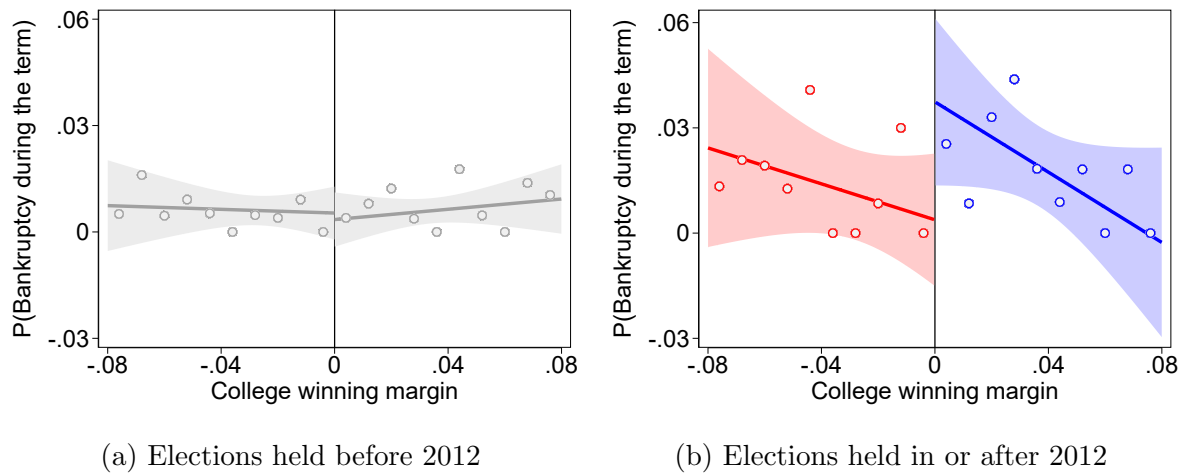
4.1 Before Vs. after 2011 reform

Figure 4: Effect of electing a mayor with college education on the probability of municipality bankruptcy

Notes: One observation per municipality-term. All elections held between 1993 and 2021 in municipalities subject to a single-ballot plurality system and belonging to ordinary regions. The sample is restricted to elections in which there is at least one mayoral candidate that holds a college degree and at least one mayoral candidate that does not hold a college degree.

(a) Elections held before 2012

(b) Elections held in or after 2012

Figure 5: Effect of electing a mayor with college education on the probability of municipality bankruptcy before and after 2012 reform

Notes: One observation per municipality-term. All elections held between 1993 and 2021 in municipalities subject to a single-ballot plurality system and belonging to ordinary regions. The sample is restricted to elections in which there is at least one mayoral candidate that holds a college degree and at least one mayoral candidate that does not hold a college degree.

[INCOMPLETE] In Figure 5, we estimate equation (1) separately among elections

held between 1993 and 2011 (i.e., before the introduction of financial and career penalties to politicians considered to be co-responsible of the situation of financial distress) and among elections held since 2012. Our results show that the positive effect of electing a mayor that holds a college degree on the probability of filing for bankruptcy is only present after the approval of the reform. In Figure 6, we plot the estimated RD discontinuity for a number of different periods in our sample. Estimates of the causal effect on electing a mayor that holds a college degree on the probability of applying for bankruptcy are consistently around zero and not statistically significant before the 2011 reform while they become significant afterwards.
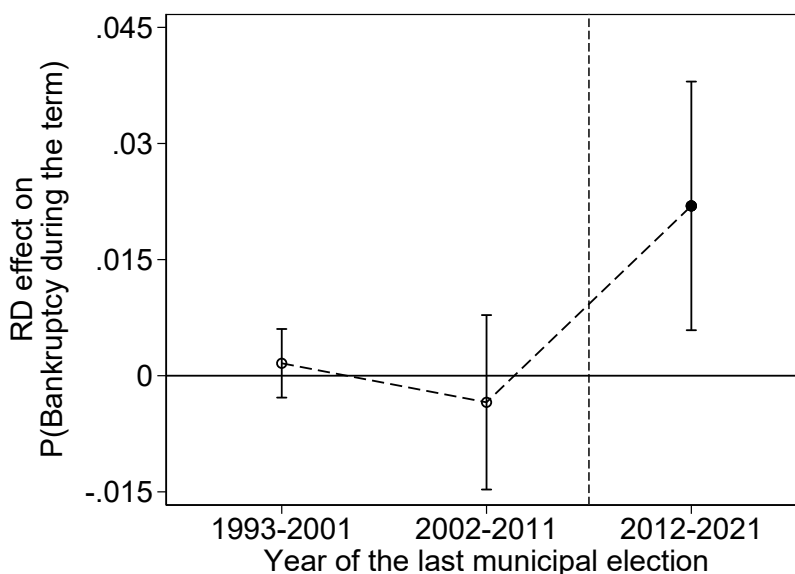

Figure 6: Effect of electing a mayor with college education on the probability of municipality bankruptcy before and after 2012 reform

Notes: One observation per municipality-term. All elections held between 1993 and 2021 in municipalities subject to a single-ballot plurality system and belonging to ordinary regions. The sample is restricted to elections in which there is at least one mayoral candidate that holds a college degree and at least one mayoral candidate that does not hold a college degree. Estimation method: local-linear regression using triangular kernel weights of equation (1) within the Calonico et al. (2014) MSE-optimal bandwidth. Province-by-election year fixed effects are included. Each marker and spike refers to a regression in the subsample specified on the horizontal axis. 95% confidence intervals are based on standard errors robust to clustering at the province level.

4.2 Heterogeneous effect with respect to time since the previous election

[INCOMPLETE] In Figure 7, we estimate equation (1) for a number of different periods in our sample and using as the dependent variable an indicator equal to 1 if the municipality applies for bankruptcy early during the term (i.e., in the same year of the previous election or in the first year since the last election) – red markers and line; an indicator equal to 1 if

the municipality applies for bankruptcy around mid-term (i.e., in the second or third year since the last election) – blue markers and line; an indicator equal to 1 if the municipality applies for bankruptcy at the end of the term (i.e., in the final full year of the term or in the months approaching the next election). The results document a gradient in the causal effect of electing a mayor that holds a college degree on the probability of filing for bankruptcy: after the reform, the stronger effect is estimated earlier during the term; a positive but smaller and insignificant coefficient is estimated around mid-term; no effect is estimated around the end of the term. We consistently find small and insignificant coefficients before the reform.

4.3   Placebo: no effect on pre-bankruptcies

[INCOMPLETE] The introduction of pre-bankruptcies procedure and the observation that they do not put the incumbent politicians at a risk of penalties is an ideal placebo. In Figure 3 in the Appendix, we estimate equation (3) using as the dependent variable each of the indicators specified in the figure's horizontal axis. We cannot estimate a statistically significant coefficient when using the probability of applying for pre-bankruptcy as the dependent variable. Actually, when splitting pre-bankruptcies based on whether they will be later solved or transformed in bankruptcies, we do find a positive effect of electing a mayor that holds a college degree on the latter while the coefficient obtained using the former as the dependent variable is very close to 0 and statistically insignificant.
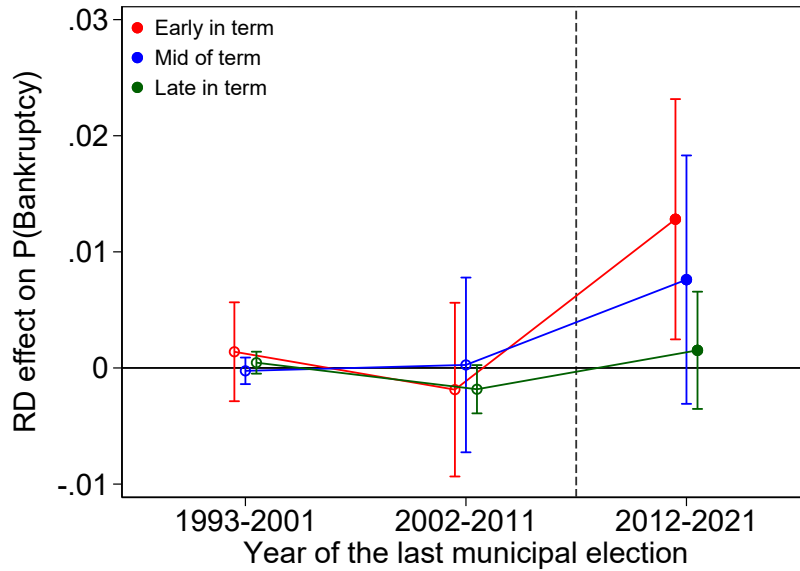
Figure 7: Effect of electing a mayor with college education on the probability of municipality bankruptcy before and after 2012 reform, by cycle

Notes: One observation per municipality-term. All elections held between 1993 and 2021 in municipalities subject to a single-ballot plurality system and belonging to ordinary regions. The sample is restricted to elections in which there is at least one mayoral candidate that holds a college degree and at least one mayoral candidate that does not hold a college degree. Estimation method: local-linear regression using triangular kernel weights of equation (1) within the Calonico et al. (2014) MSE-optimal bandwidth. Province-by-election year fixed effects are included. Each marker and spike refers to a regression in the subsample specified on the horizontal axis. 95% confidence intervals are based on standard errors robust to clustering at the province level. Red markers and spikes refer to regressions in which the dependent variable is an indicator equal to 1 if the municipality's administration declares bankruptcy in the same year of the previous election or within the first calendar year after the previous election; blue markers and spikes refer to regressions in which the dependent variable is an indicator equal to 1 if the municipality's administration declares bankruptcy in the second or third calendar year after the previous election; green markers and spikes refer to regressions in which the dependent variable is an indicator equal to 1 if the municipality's administration declares bankruptcy in the year before the following election or in the same year of the following election.

References

Abad, J. M., V. J. Bermejo, F. Carozzi, and A. Gago (2022). Blaming Your Predecessor: Government Turnover and External Financial Assistance.

Bordignon, M. (2000, November). Problems of Soft Budget Constraints in Intergovernmental Relationships: The Case of Italy. Research Department Publications 3099, Inter-American Development Bank, Research Department.

Bordignon, M., M. Gamalerio, and G. Turati (2020). Manager or Professional Politician? Local Fiscal Autonomy and the Skills of Elected Officials. *Regional Science and Urban Economics 83*, 103529.

Bordignon, M., T. Nannicini, and G. Tabellini (2016). Moderating Political Extremism: Single Round versus Runoff Elections under Plurality Rule. *American Economic Review 106*(8), 2349–2370.

Calonico, S., M. D. Cattaneo, and R. Titiunik (2014). Robust Nonparametric Confidence Intervas For Regression-Discontinuity Designs. *Econometrica 82*(6), 2295–2326.

Cattaneo, M. D., M. Jansson, and X. Ma (2016). Manipulation Testing Based on Density Discontinuity. *The Stata Journal*, 1–18.

Cipullo, D. (2021). Voting Systems and Fiscal Policy: Evidence from Runoff and Plurality Elections. *National Tax Journal 74*(2), 347–376.

Gagliarducci, S. and T. Nannicini (2013). Do Better Paid Politicians Perform Better? Disentangling Incentives from Selection. *Journal of the European Economic Association 11*(2), 369–398.

Gamalerio, M. and F. Trombetta (2023). Fiscal Rules and the Selection of Politicians: Theory and Evidence from Italy. *Available at SSRN 3035437*.

Herold, K. (2018). Insolvency frameworks for sub-national governments. (23).

Kornai, J. (1986). The soft budget constraint. *Kyklos 39*(1), 3–30.

Kornai, J., E. Maskin, and G. Roland (2003, December). Understanding the soft budget constraint. *Journal of Economic Literature 41*(4), 1095–1136.

Marshall, J. (2022). Can Close Election Regression Discontinuity Designs Identify Effects of Winning Politician Characteristics? *American Journal of Political Science*.

McCrary, J. (2008). Manipulation of the Running Variable in the Regression Discontinuity Design: A Density Test. *Journal of Econometrics 142*(2), 698–714.

Meriläinen, J. (2022). Political Selection and Economic Policy. *The Economic Journal 132*(648), 3020–3046.

Rodden, J., G. Eskeland, and J. Litvack (2003). *Fiscal Decentralization and the Challenge of Hard Budget Constraints*. Mit Press. MIT Press.

Appendix

A   Figures

(a) All mixed-college elections   (b) Close mixed-college elections
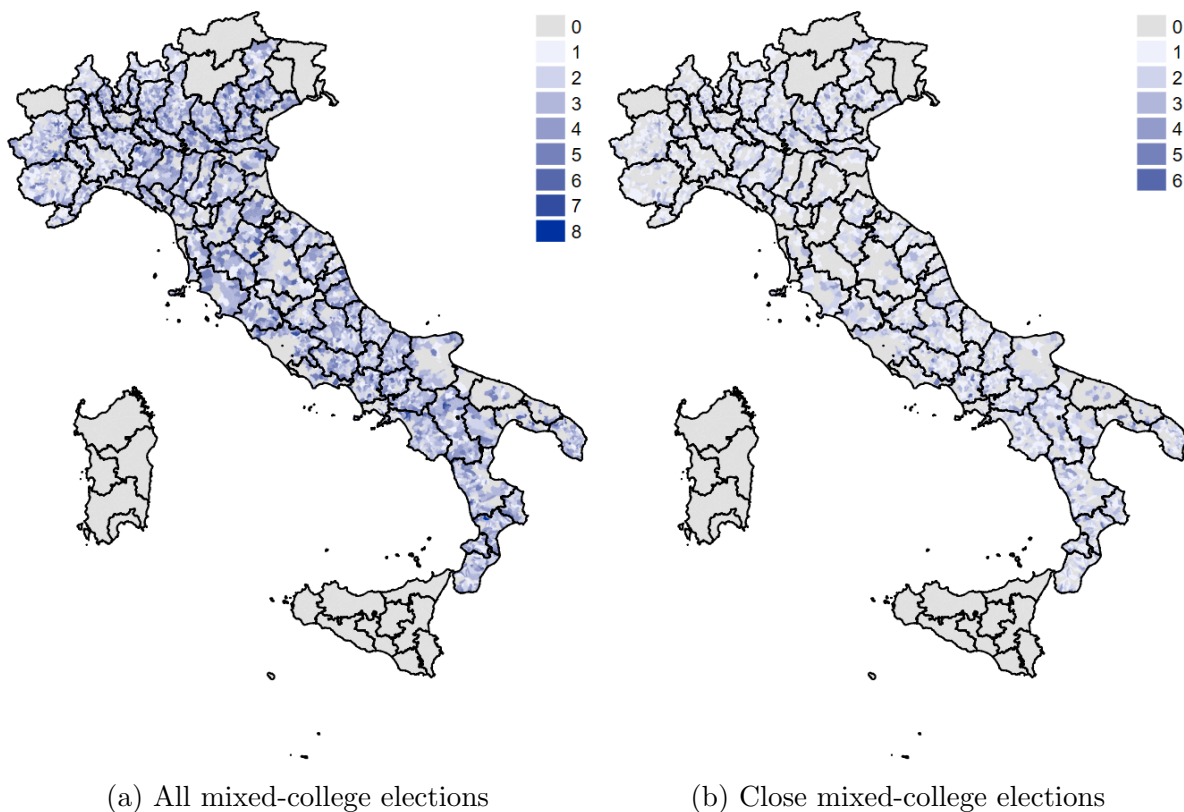
Figure A.1: Municipalities included in estimation sample

Notes: Panel (a) reports the number of elections held between 1993 and 2021 in municipalities subject to a single-ballot plurality system and belonging to ordinary regions in which there is at least one mayoral candidate that holds a college degree and at least one mayoral candidate that does not hold a college degree. Panel (b) reports the number of elections held between 1993 and 2021 in municipalities subject to a single-ballot plurality system and belonging to ordinary regions in which the margin of victory of the strongest candidate with a college degree (resp. of the strongest candidate lacking a college degree) falls within the Calonico et al. (2014) optimal bandwidth.
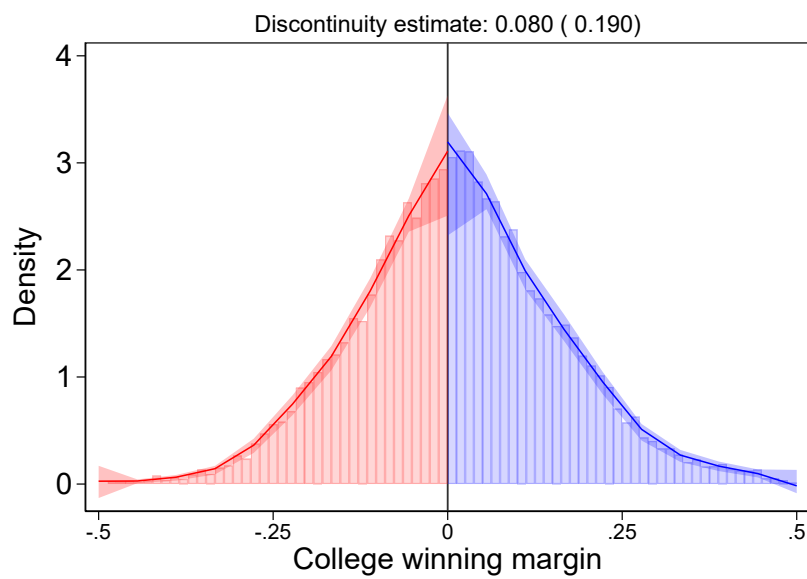
Figure A.2: Test for no manipulation of the running variable around the threshold (Cattaneo et al., 2016)

Notes: One observation per municipality-term. All elections held between 1993 and 2021 in municipalities subject to a single-ballot plurality system and belonging to ordinary regions. The sample is restricted to elections in which there is at least one mayoral candidate that holds a college degree and at least one mayoral candidate that does not hold a college degree.

Figure A.3: Bandwidth robustness: Effect of electing a mayor with college education on the probability of municipality bankruptcy

Notes: One observation per municipality-term. All elections held between 1993 and 2021 in municipalities subject to a single-ballot plurality system and belonging to ordinary regions. The sample is restricted to elections in which there is at least one mayoral candidate that holds a college degree and at least one mayoral candidate that does not hold a college degree. Estimation method: local-linear regression using triangular kernel weights of equation (1). Province-by-election year fixed effects are included. Each marker and spike refers to a regression in which the bandwidth is manually selected to values specified in the horizontal axis. The dashed line reports the Calonico et al. (2014) MSE-optimal bandwidth. 95% confidence intervals are based on standard errors robust to clustering at the province level.
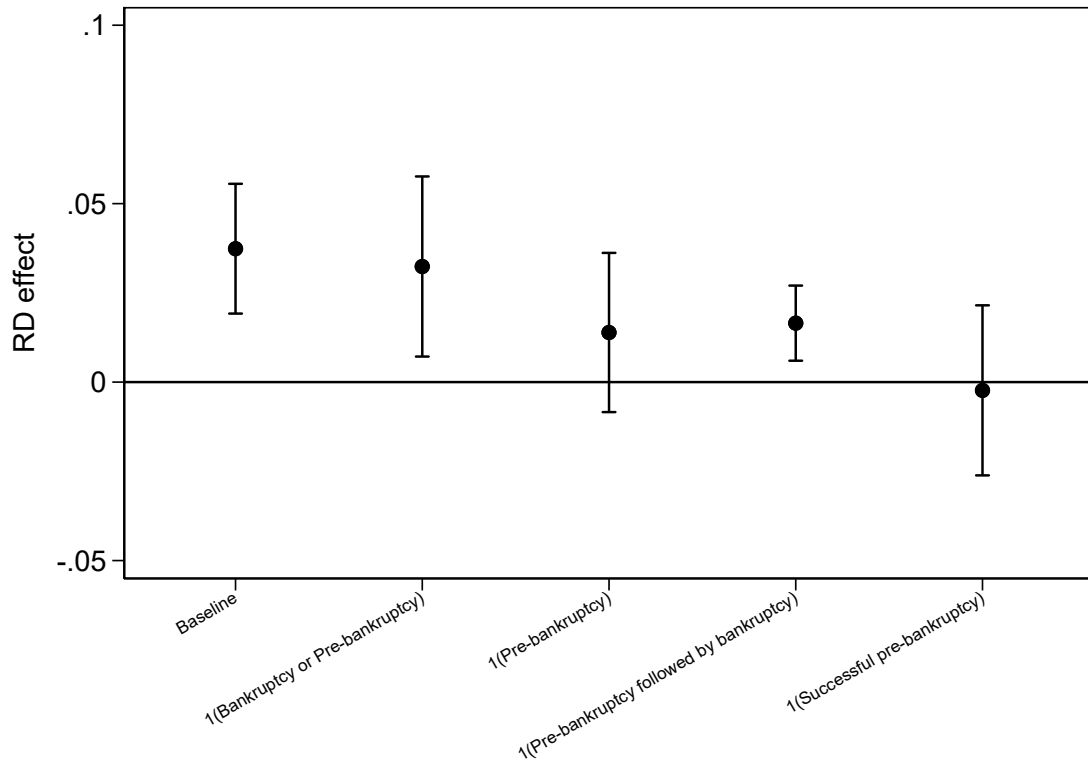
Figure A.4: Alternative measures of bankruptcies: Effect of electing a mayor with college education on the probability of municipality bankruptcy

Notes: One observation per municipality-term. All elections held between 1993 and 2021 in municipalities subject to a single-ballot plurality system and belonging to ordinary regions. The sample is restricted to elections in which there is at least one mayoral candidate that holds a college degree and at least one mayor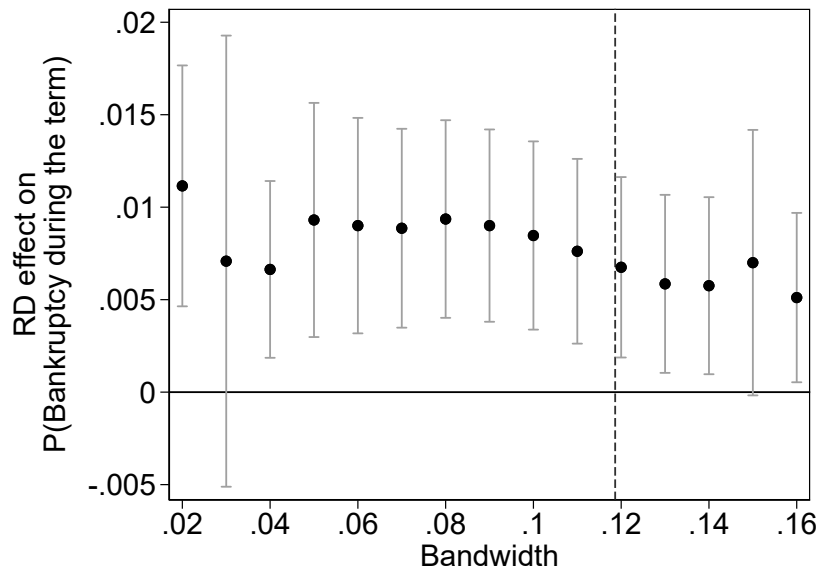al candidate that does not hold a college degree. Estimation method: local-linear regression using triangular kernel weights of equation (1). Province-by-election year fixed effects are included. Each marker and spike refers to a regression in which the dependent variable is specified according to the definition provided on the horizontal axis. 95% confidence intervals are based on standard errors robust to clustering at the province level.

B Tables

Table B.1: Descriptive Statistics

Variable	(1) Mean	(2) St. Dev.	(3) Obs.
(a) Politicians' characteristics			
Age at election of the mayor	48.813	10.186	14,848
1 = Mayor holds a college degree	0.510	0.500	14,690
1 = Mayor holds a high school degree	0.385	0.487	14,690
1 = Mayor holds a junior school degree	0.069	0.254	14,690
1 = Mayor does not hold a junior school degree	0.010	0.098	14,690
1 = Mayor holds a high status occupation	0.133	0.339	14,848
1 = Female Mayor	0.113	0.316	14,848
No. terms of previous political experience of the mayor	1.511	1.314	14,848
Avg. age of councilors at election	43.735	4.535	14,878
Avg. no. terms of previous political experience of councilors	0.688	0.437	14,878
(b) Election results			
Vote share of top candidate	0.543	0.127	14,905
No. Candidates holding a college degree	0.831	0.544	14,895
No. eligible to vote	3,677.258	3,078.881	14,905
Turnout	0.756	0.110	14,905
No. blank ballots	54.987	68.585	14,904
Null ballots	62.169	251.730	14,904
Number of mayoral candidates	2.016	1.181	14,905
(c) Municipality characteristics			
1 = Bankruptcy	0.007	0.082	14,905
1 = Pre-bankruptcy	0.009	0.096	14,905
1 = Bankruptcy/Pre-bankruptcy	0.014	0.119	14,905
Official population at last census	4,161.044	3,529.197	14,905
Density	265.484	423.626	14,477
Surface (km2)	32.020	34.123	14,477
Labor force participation	37.220	7.619	14,477
South	0.289	0.453	14,905

Notes: One observation per municipality-term. All elections held between 1993 and 2021 in municipalities subject to a single-ballot plurality system and belonging to ordinary regions.

Table B.2: Balancing of pre-determined characteristics

	(1)	(2)	(3)	(4)
Variable	RD effect	Robust c.i.	Bandwidth	Effective obs.
(a) Previous mayor's characteristics				
Age	0.363(0.578)	[-0.784;1.737]	0.105	6503
College	-0.032(0.026)	[-0.094;0.025]	0.109	6536
High school	0.038(0.026)	[-0.020;0.104]	0.093	5804
Junior school	-0.008(0.018)	[-0.050;0.035]	0.102	6230
Less than junior school	-0.003(0.007)	[-0.020;0.012]	0.091	5713
High status	-0.023(0.015)	[-0.060;0.003]	0.100	6263
Female	-0.011(0.020)	[-0.061;0.029]	0.099	6246
Experience	-0.054(0.060)	[-0.193;0.073]	0.100	6276
(b) Councilors characteristics				
Age	0.162(0.325)	[-0.420;0.900]	0.123	9160
College	0.005(0.009)	[-0.012;0.026]	0.119	8979
High school	-0.015(0.010)	[-0.039;0.005]	0.101	8006
Junior school	0.006(0.009)	[-0.013;0.028]	0.105	8201
Less than junior school	0.005(0.004)	[-0.003;0.014]	0.128	9417
High status	0.009(0.007)	[-0.007;0.024]	0.118	8941
Female	0.001(0.010)	[-0.018;0.022]	0.118	8947
Experience	-0.037(0.022)*	[-0.092;0.005]	0.090	7259
(c) Election results				
Vote share top cand.	0.002(0.006)	[-0.011;0.013]	0.084	6908
No. cand. w/college degree	-0.003(0.030)	[-0.065;0.068]	0.101	8009
Missing education info	-0.013(0.010)	[-0.038;0.008]	0.121	9102
Eligible voters	-223.7(241.7)	[-741.5;262.2]	0.122	9135
Turnout	0.000(0.011)	[-0.023;0.023]	0.107	8350
Blank ballots	-0.582(4.385)	[-9.577;8.843]	0.097	7754
Invalid votes	3.131(7.261)	[-10.84;21.26]	0.073	6143
Candidates	-0.062(0.072)	[-0.232;0.087]	0.107	8360
(d) Municipality characteristics				
Census population	-297.5(296.5)	[-949.5;267.9]	0.120	9040
Density	-35.96(53.23)	[-153.5;58.93]	0.133	9386
Surface (km2)	-1.190(3.331)	[-7.631;5.689]	0.149	10084
Labor force participation	0.119(0.924)	[-1.622;2.036]	0.158	10464
South	-0.003(0.097)	[-0.178;0.197]	0.149	10393

Notes: One observation per municipality-term. All elections held between 1993 and 2021 in municipalities subject to a single-ballot plurality system and belonging to ordinary regions. The sample is restricted to elections in which there is at least one mayoral candidate that holds a college degree and at least one mayoral candidate that does not hold a college degree. Estimation method: local-linear regression using triangular kernel weights of equation (1) within the Calonico et al. (2014) MSE-optimal bandwidth. Standard errors robust to clustering at the province level are in parentheses. *,**,*** represent the 10%, 5%, 1% significance levels.

Table B.3: Effect of electing a mayor with college degree on other mayor's individual characteristics

	(1) Age	(2) High Status	(3) Female	(4) Experience	(5) Incumbent
College Mayor	-3.425***	0.150***	0.064***	-0.389***	-0.003
	(0.538)	(0.017)	(0.017)	(0.063)	(0.019)
Robust confidence interval	[-4.753;-2.370]	[0.107;0.187]	[0.032;0.105]	[-0.541;-0.260]	[-0.043; 0.043]
Bandwidth	0.104	0.0850	0.0890	0.128	0.0980
Eff. observations	8146	6879	7173	9387	7803
Observations	14848	14848	14848	14848	14,848
Control mean	50.75	0.0460	0.0950	1.575	0.310
Controls					
Province × Election Date FE					

Notes: One observation per municipality-term. All elections held between 1993 and 2021 in municipalities subject to a single-ballot plurality system and belonging to ordinary regions. The sample is restricted to elections in which there is at least one mayoral candidate that holds a college degree and at least one mayoral candidate that does not hold a college degree. Estimation method: local-linear regression using triangular kernel weights of equation (1) within the Calonico et al. (2014) MSE-optimal bandwidth. Standard errors robust to clustering at the province level are in parentheses. *,**,*** represent the 10%, 5%, 1% significance levels.

Table B.4: Effect of electing a mayor with college degree on member of the executive's individual characteristics

	(1) College	(2) Age	(3) High Status	(4) Female	(5) Experience
College Mayor	0.004	-0.044	0.012	-0.008	-0.076**
	(0.017)	(0.464)	(0.009)	(0.013)	(0.031)
Robust confidence interval	[-0.030;0.042]	[-0.873;1.040]	[-0.006;0.034]	[-0.036;0.021]	[-0.154; -0.011]
Bandwidth	0.134	0.103	0.122	0.109	0.108
Eff. observations	9579	8072	9094	8424	8223
Observations	14694	14814	14814	14814	14,526
Control mean	0.302	44.69	0.0710	0.238	0.749
Controls					
Province × Election Date FE					

Notes: One observation per municipality-term. All elections held between 1993 and 2021 in municipalities subject to a single-ballot plurality system and belonging to ordinary regions. The sample is restricted to elections in which there is at least one mayoral candidate that holds a college degree and at least one mayoral candidate that does not hold a college degree. Estimation method: local-linear regression using triangular kernel weights of equation (1) within the Calonico et al. (2014) MSE-optimal bandwidth. Standard errors robust to clustering at the province level are in parentheses. *,**,*** represent the 10%, 5%, 1% significance levels.

Table B.5: Effect of electing a mayor with college degree on municipality finances

Dep. var.:	(1) Expenditures	(2)	(3)	(4) Revenues	(5)	(6)	(7)	(8)	(9)
	Total	Capital	Current	Total	Taxes	Services	Cap. transf.	Curr. transf.	Deficit
College Mayor	0.0716***	0.0258	0.0220*	0.0413***	0.0227	0.0237	0.0781**	0.0452**	-0.0292***
	(0.0187)	(0.0473)	(0.0131)	(0.0156)	(0.0226)	(0.0229)	(0.0353)	(0.0190)	(0.0104)
Robust confidence interval	[0.040;0.122]	[-0.073;0.140]	[0.001;0.064]	[0.024;0.103]	[-0.021;0.081]	[-0.025;0.088]	[0.006;0.180]	[-0.003;0.091]	[-0.058;-0.011]
Bandwidth	0.0720	0.0750	0.110	0.0970	0.0920	0.106	0.0560	0.114	0.0710
Bandidth selection	MSE-optimal	MSE-optimal	MSE-optimal	MSE-optimal	MSE-optimal	MSE-optimal	MSE-optimal	MSE-optimal	MSE-optimal
Polynomial fit	Linear	Linear	Linear	Linear	Linear	Linear	Linear	Linear	Linear
Kernel	Triangular	Triangular	Triangular	Triangular	Triangular	Triangular	Triangular	Triangular	Triangular
Eff. observations	4795	5007	6825	6221	5940	6641	3799	6998	4739
Observations	12117	12117	12117	12115	12117	12117	12115	12117	12117
Control mean	0.0450	-1.314	-0.340	0.269	-0.877	-1.955	-1.622	-1.972	-0.274
Controls									
Province × Election Date FE	✓	✓	✓	✓	✓	✓	✓	✓	✓

Notes: One observation per municipality-term. All elections held between 2000 and 2021 in municipalities subject to a single-ballot plurality system and belonging to ordinary regions. The sample is restricted to elections in which there is at least one mayoral candidate that holds a college degree and at least one mayoral candidate that does not hold a college degree. Estimation method: local-linear regression using triangular kernel weights of equation (1) within the Calonico et al. (2014) MSE-optimal bandwidth. Expenditure items refer to ex-post planned expenses (*impegni*). Revenue items refer to ex-post planned revenues (*accertamenti*) Deficit is defined as the difference between total spending and total revenues. All variables are measured in log per-capita terms (except for Deficit, measured as the per-capita inverse hyperbolic sine to handle negative values). Standard errors robust to clustering at the province level are in parentheses. *,**,*** represent the 10%, 5%, 1% significance levels.

Table B.6: Effect of electing a mayor with college education on the probability of municipality bankruptcy: Quadratic specification

	(1)	(2)	(3)	(4)
Dep. var.:	1 = Bankruptcy during the term			
College Mayor	0.00904	0.00977*	0.0107***	0.00917**
	(0.00553)	(0.00565)	(0.00377)	(0.00401)
Robust confidence interval	[-0.003;0.020]	[-0.002;0.021]	[0.003;0.019]	[0.001;0.018]
Bandwidth	0.114	0.113	0.110	0.0810
Bandidth selection	MSE-optimal	MSE-optimal	MSE-optimal	MSE-optimal
Polynomial fit	Quadratic	Quadratic	Quadratic	Quadratic
Kernel	Triangular	Triangular	Triangular	Triangular
Eff. observations	8747	8419	8532	6451
Observations	14905	14477	14905	14477
Control mean	0.00700	0.00700	0.00700	0.00800
Controls		✓		✓
Province × Election Date FE			✓	✓

Notes: One observation per municipality-term. All elections held between 1993 and 2021 in municipalities subject to a single-ballot plurality system and belonging to ordinary regions. The sample is restricted to elections in which there is at least one mayoral candidate that holds a college degree and at least one mayoral candidate that does not hold a college degree. Estimation method: local-quadratic regression using triangular kernel weights of equation (1) within the Calonico et al. (2014) MSE-optimal bandwidth. Controls include the official population measured in the last census, density, surface, the share of poor families measured at the last census, and labor force participation rate. Standard errors robust to clustering at the province level are in parentheses. *,**,*** represent the 10%, 5%, 1% significance levels.