

Jumping without parachutes. Revolving doors and political incentives*

Matteo Gamalerio[†] Federico Trombetta[‡]

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Abstract

This paper investigates how connections between politics and firms influence the profiles of political candidates and their policy decisions. We focus on anti-revolving door laws, which impose a mandatory “cooling-off” period before former politicians can take significant positions in the bureaucracy or in specific firms. We develop a political agency model where politicians can access “politically connected outside options” (PCOs). A decline in the value of PCOs disproportionately affects individuals with lower human capital, increasing the proportion of high human capital candidates, but heightens the likelihood that low human capital politicians pander to voters, choosing popular but not necessarily optimal policies. We test these predictions using data from Italian municipalities, leveraging a population threshold that triggers anti-revolving door policies in a difference-in-discontinuity design. The cooling-off period raises the education of candidates and elected mayors, and increases the probability that low human capital mayors reduce local taxes while worsening bureaucratic quality.

Keywords: revolving doors, selection of politicians, policymaking, difference-in-discontinuity.

JEL Classification: D72, D73, H75.

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[†]Institut d’Economia de Barcelona (IEB) and UB School of Economics, University of Barcelona, m.gamalerio@ub.edu.

[‡]DISEIS, Università Cattolica del Sacro Cuore, Milano, federico.trombetta@unicatt.it

1 Introduction

This paper shows that the availability of connections between politics, businesses and the bureaucracy affects who runs for office and what they do once in power. Furthermore, the precise way in which politicians are compensated once in office matters in influencing the pool of available candidates. In particular, we show that reducing the availability of “revolving doors” between political office and state-owned firms or the public sector can actually increase the human capital of prospective politicians, despite reducing the expected value of a political career. We uncover these results studying the political effects of anti-revolving door policies.

A healthy relationship between politics, bureaucracy, and businesses is crucial for a well-functioning democracy and economic development (Besley et al., 2021). Some of the issues that may arise in those relationships have received wide attention in the literature. Regulatory capture (Stigler, 1971; Laffont and Tirole, 1991) is one example, with a broadly related literature interested in the effects of “revolving doors” between politics and lobbying (Blanes i Vidal et al., 2012; McCrain, 2018), or on the influence of lobbying on policymaking (Wolton et al., 2021). More recent literature has focused on how political incentives may affect bureaucratic performance (Gratton et al., 2021; Gratton and Lee, 2023; Sasso and Morelli, 2021; Bellodi et al., 2024; Snowberg and Ting, 2019; Colonnelli et al., 2022)¹ and how political turnover (Akhtari et al., 2022) or political connections and patronage (Brassiolo et al., 2020; Colonnelli et al., 2020) may negatively affect public sector hirings and their performance. Similar issues may arise also in the relationship between politics and businesses, with politicians having an incentive to use connected firms at their advantage (Shleifer and Vishny, 1994).²

One side of the relationship, however, has been largely overlooked so far: the effect of those connections between politics, businesses and bureaucracies on the incentives for those who become, or are, politicians. Both in terms of whether they run and which policies they choose.³ For example, officeholders may want to exploit their power or

¹In general, a growing body of theoretical literature stresses the importance of studying how the presence and the incentives of bureaucrats affect policymaking and accountability. See for example Gailmard and Patty (2007); Turner (2019); Li et al. (2023).

²For example, Sapienza (2004) documents a politically-influenced behavior of state-owned banks, while Baltrunaite et al. (2021) and Akcigit et al. (2023) study how political connections, in terms of “political” board appointments in State-owned enterprises (SOE) or the hiring of politically connected employees, affect firms’ performance. Egerod et al. (2024) provides a comprehensive analysis of roles and effects of former public officials in private firms. Li et al. (2020) and Inoue (2020) show that SOEs behavior and performance are affected by political considerations, like the timing of elections.

³Relevant exceptions are Shepherd and You (2020) and Bils and Judd (2020), but their main focus is on the incentives of staff members that may turn into lobbyists. In our case, the focus is on politicians that may get a job into a state-controlled firm or in the bureaucracy. Therefore, we focus on a case where electoral incentives are of crucial importance. Closer to us, Fisman et al. (2025) studies the effect of anti-revolving door policies on political selection. However, we focus on a different context (executive positions, rather than lawmakers) and on a different type of revolving doors (from politics to state-owned firms, rather than from politics to lobbying).

their connections to find a good job after their career in politics is done, as documented for example by Diermeier et al. (2005), Eggers and Hainmueller (2009) and Palmer and Schneer (2016).⁴ This behavior does not necessarily mean that they are instrumental to regulatory capture: the possibility of a “parachute” in the bureaucracy or in a State-owned firm⁵ is a way to increase the expected benefits of a political career. However, it may distort the allocation of talents in those firms, their performance in the market (Baltrunaite et al., 2021; Akcigit et al., 2023; Cingano and Pinotti, 2013; Green and Homroy, 2022; Bertrand et al., 2018; Egerod et al., 2024) or their credit rating (Diegmann et al., 2024), and affect what motivates people to join politics in the first place. Does the relationship between politics, bureaucracy and businesses matter for political incentives? Do anti-revolving door laws affect the type of candidates willing to run, and the policies they implement once in office? This paper is the first one to show, both theoretically and empirically, that anti-revolving door policies can be a double-edged sword. They improve the human capital of the pool of candidates, but they also increase the incentive to implement electorally rewarding policies, even when they may be inferior.

To study those questions, we exploit the introduction of an anti-revolving door law in Italy (“Legge Severino”), that mandates “cooling off” periods for former politicians.⁶ This period is a gap of a few years between holding a political office and being allowed to obtain high-level positions in State-owned enterprises (SOEs) or in the bureaucracy. On top of this, the law forbids politicians to obtain those positions while in office. This type of laws is expected to affect corruption (De Angelis et al., 2020; de Blasio et al., 2020) or, more generally, to insulate politicians from regulatory capture and the bureaucracy from political patronage. Importantly, however, those laws may also directly affect the political side of the equation, changing politicians’ choices and incentives. Italy provides an excellent case study for our research question, as there is variation both in time (the law is approved in 2013) and in space in the application of the law. More precisely, it applies to politicians in municipalities with a population above 15,000 inhabitants, allowing us to use difference-in-discontinuity techniques, as it is not the sole policy changing at this population threshold.

Note that the sign of the effect (if any) is ex-ante unclear. On the one hand, adding a constraint on the type of jobs that out-of-office politicians can do reduces the expected benefits from holding a political office, impacting aspiring politicians with higher human capital and better outside options, hence potentially reducing the overall human capital of candidates (Caselli and Morelli, 2004). On the other hand, the policy may impact

⁴In particular, Eggers and Hainmueller (2009) finds that serving in office doubles the wealth of conservative MPs, with no effect on labour MPs, and Palmer and Schneer (2016) finds that candidates marginally winning a senatorial or gubernatorial seat are 30% more likely to serve in the board of a publicly traded company later on.

⁵By “State-owned firm” we mean firms controlled either by national or local Governments.

⁶Several other countries, as well as the European Union, adopted similar laws.

the incentives of those choosing a political career just as a stepping-stone to use the connections to be appointed to a board of SOEs or in the bureaucracy. Furthermore, politicians in office face an increased cost of losing, as their potential parachutes may open only in a few years. Removing this parachute may motivate more effort (Ashworth and De Mesquita, 2014) or increase the incentives toward choosing suboptimal policies (Canes-Wrone et al., 2001; Maskin and Tirole, 2004). Importantly, the combination of those incentives differentiates anti-revolving door policies from a simple reduction in office wages. A wage reduction decreases the value of a political career by making a political career generally less valuable, relative to not running and relative to losing office. Anti-revolving door policies also reduce the total value of a political career, but they do that by decreasing the outside option once this career ends. Hence, conditional on being in office, a *reduction* in the value of the outside option is similar to an *increase* in office wages, because it increases the cost of losing. Those effects may have a differential impact depending on the human capital of politicians, thus affecting the overall human capital of those running for office and the incentives once in office.

In this paper, we first build a simple theoretical model of accountability with endogenous entry into politics and politically connected outside options (PCOs). It suggests that the reduction in the value of politically-related outside options, implied by the introduction of cooling off periods, should *increase* the human capital of those willing to run for office, on average. This happens because high human capital individuals have better outside options, hence the reduction in the politically-related one is less likely to affect their incentives. Furthermore, they are relatively less likely to need it (or they need it only later in their life), as their political career tends to be longer. For the same logic, the reduced availability of PCOs should affect the in-office behavior of low human capital politicians relatively more (and, in general, it should affect the behavior of non-term limited politicians). In particular, the model shows that a reduction in the PCOs' expected value can increase the range of parameters where low human capital politicians find it optimal to choose the ex-ante popular action, rather than the action that is optimal given the information they possess. This happens because the cost of losing office is suddenly higher, and this increases the incentive to choose a policy more likely to bring to re-election, even if it is not necessarily optimal. Finally, the model shows that a reduction in office wages and the implementation of anti-revolving door policies, such as cooling off periods, despite having the same effect on the expected value of a political career, can have opposite effects on the quality of the pool of candidates: once the equilibrium feedback effects between policymaking and re-election strategies are taken into account, the difference appears. Lower wages decrease the share of high human capital candidates, while a reduction in the value of the politically connected outside option increases it.

In the empirical analysis, we first show that the reform effectively reduces the probability that a (former or current) mayor holds a leading position in a state-owned enterprise

(SOE), while it has no impact on the likelihood of holding a similar position in a firm in which the state owns only a minority share (henceforth, PMSE). To examine this, we exploit a newly constructed dataset of individuals occupying top positions in firms with partial or full state ownership and estimate a difference-in-discontinuity model using, as the outcome variable, the probability that a mayor holds a leading position in either an SOE or a PMSE.⁷

We then turn to the model’s empirical implications and test its predictions using a difference-in-discontinuity design (Grembi et al., 2016; Gamalerio and Trombetta, 2025). Specifically, we compare the average years of education of mayoral candidates and elected mayors in Italian municipalities around the 15,000-inhabitant threshold, before and after 2013. We find that the introduction of the anti-revolving door policy increases the average years of education of both groups by approximately two years, consistent with the model’s predictions. The relative cost of the policy is higher for individuals with weaker outside options, as they are more likely to rely on political appointments. Consequently, the reform discourages low-human capital prospective politicians more than high-human capital ones, thereby increasing the overall share of better-educated candidates. If better-educated mayors lead to better policy outcomes,⁸ this represents good news for voters.

Finally, we exploit the staggered election calendar of Italian municipalities to study the effect of the anti-revolving door policy on mayors’ in-office performance, disentangling it from potential selection effects. The model predicts greater pandering among low-human capital politicians, driven by the increased cost of losing office. Moreover, only non-term-limited mayors should adjust their behavior, as they are motivated by re-election concerns—specifically, by the fact that re-election becomes relatively more valuable when the outside option loses value. Outside the realm of the model, this implies that low-human capital politicians are more likely to adopt policies aimed at avoiding voter discontent, regardless of their social optimality. In addition, any behavioral response induced by the introduction of the anti-revolving door policy should be stronger among non-term-limited mayors.

Empirically, we rely on a municipality-by-year dataset and compare the behavior of mayors elected before the approval of the reform—hence unaffected by the change in selection incentives discussed above—before and after 2013, in municipalities just above and just below the 15,000-inhabitant threshold. For affected mayors, the reform effectively removes the possibility of obtaining a politically connected office (PCO) for one or two years, making the prospect of losing the next election relatively more costly. We examine its impact on per capita revenues and on the average tax rate of the municipal surcharge on

⁷As mentioned, the scope of the law extends beyond SOEs. It also covers leading positions in local health authorities and in the public administration.

⁸While a few studies question this relationship (Carnes and Lupu, 2016), most recent empirical evidence (Carreri, 2021; Sørensen, 2023; Meriläinen, 2022; Gamalerio and Trombetta, 2025) finds a positive effect of politicians’ education on policy performance.

personal income tax, since politicians facing higher re-election pressure may be tempted to lower local taxes. Consistent with this interpretation, we find a negative effect of the reform on municipal income tax revenues, almost entirely driven by low-human capital mayors. In Appendix F, we show that those mayors do not induce higher deficit, but they tend to reduce the quality of the bureaucracy.

Using the logic of the model, we interpret this result as evidence that low-human capital politicians are relatively more concerned about losing the next election, since they can no longer be immediately nominated to a position in a state-owned enterprise (SOE). As a result, they appear more willing to reduce local taxes, which, as shown by survey data and anecdotal evidence (Appendix G), are on average disliked by Italian voters. Moreover, their cut is often mentioned in the local political debate. To further strengthen this interpretation, we split the sample and re-estimate the difference-in-discontinuity specification separately for non-graduate mayors who are term-limited and those who are not. Consistent with the model’s predictions, we find that only non-term-limited, non-graduate mayors adjust their behavior in response to the introduction of the anti-revolving door policy—and they do so by cutting local income taxes.

Taken together, our results suggest that anti-revolving door policies can be a double-edged sword. On the one hand, they improve the average human capital of politicians. On the other hand, they may increase the incentives to implement electorally rewarding policies (even at the cost of lowering the quality of less visible outcomes, such as the quality of the bureaucracy), because the cost of losing elections increases. More broadly, our paper highlights the importance of the connections between politics and other sectors in shaping politicians’ incentives, both in terms of *who* joins the political arena and of *what* they do once in office. Furthermore, it shows that it is not enough to simply pay politicians more, in order to get more candidates with higher human capital. The way in which they are paid, and the asymmetric effect of different “payment-schemes” across different types of candidates, induced by their behavior in office and re-election probabilities, are also crucial. Finally, this paper sheds lights on the political role of SOEs, that represent a sizeable share of the economy in many countries (they employ 5.1% of Italian workforce in industry and services). We see this contribution as complementary with respect to the small but growing literature studying how politics affect the objectives of those firms (Sapienza, 2004; Broso, 2023).

Contributions to the related literature This paper contributes to several strands of the literature. First, we contribute to the literature on political consequences of revolving doors. While Blanes i Vidal et al. (2012), Bertrand et al. (2014) and McCrain (2018) focus on “revolving door lobbyists”, i.e. former politicians that continue their career in lobbying firms, we study a different type of revolving doors, namely those between politics

and high-level positions in the State bureaucracy or in publicly-owned firms.⁹

This is also one of the main differences between this paper and Fisman et al. (2025). They study the effects of a similar type of policy (cooling-off periods) on political selection, in terms of re-running decision, ideology and human capital. They find that cooling off periods tend to increase the probability that politicians in office re-run and to discourage entry of moderate candidates, without affecting much those with more extreme views. They also tend to reducing human capital of candidates. In this paper we consider a different institutional setting (Italian mayors rather than US state congresspeople) and a different type of revolving door (with respect to SOEs rather than lobby firms), and we believe those differences may explain the different results we obtain. In our setting, PCOs are likely to be available to former politicians irrespective of their human capital, while lobbying firms in the US may be more selective.¹⁰ Another important difference is that our focus on an executive political office allows us to measure also the effect of anti-revolving door policies on policymaking.

We are also close to Shepherd and You (2020), who studies how career concerns and the possibility of a job in the lobbying industry affects the behavior of congressional staffers, finding that it increases the productivity of their congressperson. Egerod (2022) in a similar flavour finds that US senators are more likely to choose a private sector career when they observe their colleagues being successful. Bils and Judd (2020) build a model of revolving door labor market, where individuals can choose to work for the government and then revolve to lobbying. As their model is about government employees, they abstract away from electoral incentives and focus on the importance of connections for the value of lobbying, and study the effect of cooling off periods and salary on lobbying decisions and intrinsic motivation of government workers. In this paper we take a complementary approach by studying how future career opportunities affect in-office behavior of *politicians*, and also their selection into politics, hence in a sense we take for granted the (potential) return from political connections shown by the literature (Diermeier et al., 2005; Eggers and Hainmueller, 2009; Palmer and Schneer, 2016). Importantly, in our case this type of career opportunities can be heavily affected by their political roles, so connections are probably less central, while the interaction between out of office opportunities and re-election incentives is of crucial importance. Moreover, the type of out-of-office opportunities we focus on is not much in the lobbying industry, but rather in state-owned firms or in the bureaucracy. Therefore, in our model the action politicians take is not supposed to affect the lobbyist fortunes, but rather voters' welfare (and hence re-election chances). Finally, De Angelis et al. (2020) studies the effect of the same policy change

⁹In a different framework, Luechinger and Moser (2020) finds abnormal stock returns for firms hiring former EU commissioner.

¹⁰As shown in Appendix C.2, our model can be extended to accommodate for positive selection in the allocation of PCOs. When it is sufficiently strong, the effect of cooling off periods on the human capital of candidates is indeed reversed.

on white collar crimes, finding no significant result. We focus on different outcomes and adopt a different identification strategy (diff-in-disc, rather than diff-in-diff) in order to focus our comparison on municipalities that are more similar. Furthermore, we have data on a longer time horizon after the approval of the law.

Second, we contribute to the literature on the consequences of political connections and patronage. On the former, Akcigit et al. (2023) finds that market leaders are more likely to hire politically-connected employees, but they are less innovative. Furthermore, political connections seem not to increase firms' productivity. Diegmann et al. (2024) finds that German firms connected with MPs improve their credit ratings and are less likely to leave the market, but they do not get preferential access to grants and procurements. Amore and Bennedsen (2013) finds that Danish firms connected with local politicians increase their profitability when the power of those politicians increases. Bertrand et al. (2018), instead, finds that French politically connected firms alter their decisions in order to help local politicians' re-election effort, without seeing an economic return. Colonnelli and Prem (2022) finds that politically-connected firms are negatively affected by anti-corruption audits. Egerod (2024) shows that hiring a former member of Congress reduces the likelihood that a private firm is audited by the tax authority. Cingano and Pinotti (2013) documents a revenue-premium for politically-connected firms in Italy because of a shift of public demand in their favor, with a negative effect on the provision of public goods. This is also consistent with Bartlett (2023). Closer to our work, Baltrunaite et al. (2021) finds that the combination of the "Severino law" and the introduction of quota for women in SOEs lead to an increase in the quality of the board and the appointment of fewer former politicians, increasing firms' profitability. In terms of patronage, both Akhtari et al. (2022) and Colonnelli et al. (2020) find that political connections play a major role in appointments in Brazilian bureaucracies, leading to the selection of less competent individuals or to a decrease in schools' test scores. Brassiolo et al. (2020) documents the role of political patronage in bureaucratic appointments in Ecuador.¹¹ We study the other side of the equation: taking for granted the (potential) distortions that can arise because of political connections or patronage, we show that regulations discouraging this type of behavior have also positive effects on political selection. This is consistent with Golden et al. (2022), showing that the abolition of patronage appointments increases the re-election rate of US State legislators.

Third, we contribute to the literature on political selection (Caselli and Morelli, 2004; Besley, 2004; Mattozzi and Merlo, 2008; Dal Bó and Finan, 2018; Hall, 2019; Gulzar, 2021; Casey et al., 2021; Auerbach, 2022) and performance. In particular, we focus on the role

¹¹Related with those, Riaño (2021) documents the strong presence of bureaucratic nepotism in Colombia, that negatively affects the performance of public sector agencies. Differently from the above, this paper looks at family-related, rather than politically-related, nepotism. More broadly, Mocetti and Orlando (2019) shows that the presence of corruption worsens the selection of personnel disproportionately more in the public sector, vis-a-vis the private one.

of external rewards on politicians’ behavior (Fisman et al., 2014; Weschle, 2022) and on how career incentives for politicians affect the composition of the pool of candidates, in terms of human capital, and their in office decisions. Although there is extensive literature on politicians wages (Gagliarducci and Nannicini, 2013) and on the impact of rewarding schemes on political careers (Groseclose and Krehbiel, 1994; Fiorina, 1994; Hall and Van Houweling, 1995; Diermeier et al., 2005),¹² we point out that this type of “revolving doors” are substantially different in terms of their incentives, given the different desirability for different types of politicians. In this sense, our result on the (positive) effect of a reduction in the value of PCOs is similar to Keane and Merlo (2010): they find that restricting private sector employment after leaving congress disproportionately induce “achievers” (i.e. those good in passing laws in congress) politicians to stay, as it increases the value of holding a seat. Moreover, a reduction in office wages discourages “skilled” (i.e. those good in getting re-elected) politicians. Our approach differs from their paper in three ways. First, we look how the reduction in PCOs affects the pool of *candidates*, while they focus on *elected* politicians. This is important: in their paper, the private sector ban increases the value of a seat *conditional on being in office*. This is true also for cooling off periods in our model. But, as we also include entry into politics, we are able to pick also the effect on the whole value of a political career, and the asymmetries on that respect. Second, we are able to say something also about effects of this policy on the in-office behavior, in particular in terms of the type of policies that are chosen. Third, we use quasi-experimental design (a difference-in-discontinuity), rather than a structural model.

Overall, we believe that our result is important for this literature for two reasons. First, it contributes to the broader understanding of how institutional features affect the type of candidates willing to run. Second, it qualifies the idea that policies increasing the benefit of a political career should improve the pool of candidates (as suggested, at least for polarization, by Hall (2019)). Our paper shows the importance of taking into account the possibility of asymmetric effects of those policies across different types of prospective candidates. Moreover, our paper adds evidence on the importance of the political role of SOEs.¹³

Finally, we focus on education as a relevant outcome variable as it has been shown to positively affect economic growth (Besley et al., 2011), the production of public goods (Martinez-Bravo et al., 2017), service provision (Sørensen, 2023; Gamalerio and Trombetta, 2025), fiscal sustainability (Meriläinen, 2022). Furthermore, it positively correlates with measures of administrative competence (Carreri, 2021) and it reduces the electoral performance of populist parties (Boffa et al., 2023). In general, it is a proxy for com-

¹²Importantly, they typically look at the ex post career of elected politicians, while we can look at the entry decision as well.

¹³See Bo et al. (2025) for a comprehensive literature review on SOEs in developed economies.

petence extensively used in the political selection literature (Besley and Reynal-Querol, 2011; Gagliarducci and Nannicini, 2013; Galasso and Nannicini, 2011).

2 Model

To guide the empirical analysis, we build a theoretical model of endogenous political selection and policymaking where a PCO is available to politicians, and we study how changes in its value affect the composition of the pool of candidates and the choices politicians make once in office. The model shows that a decrease in the value of the PCO reduces the expected value of holding office in a relatively more detrimental way for low-human capital candidates, thus improving the share of high human capital candidates. At the same time, however, a reduction in the value of the PCO makes losing office relatively more costly, increasing low human capital politicians' incentives to choose policies that are popular with the voters even at the cost of ignoring valuable private information.

2.1 Set up

Our model builds on the seminal literature on political agency and pandering (Canes-Wrone et al., 2001), and in particular we are close to the set up used in the benchmark model by Ashworth and Shotts (2010).

As in their approach, politicians (she) and a representative voter V (he) live for two periods. Politicians can be of high or low human capital, captured by $\phi \in \{\phi_L, \phi_H\}$ with $1 = \phi_H > \phi_L$. The state of the economy θ_t is binary and iid in every period, i.e. $\theta_t \in \{A, B\}$, and such that A is the ex-ante most likely state, namely we assume $Pr(\theta_t = A) = \pi > 0.5$. The state is unknown to all the players, but the politician in office receives an informative signal s_t . Politicians' human capital determines the precision of the signal about the state of the world they receive in every period, namely $Pr(s_t = \theta_t | \theta_t) = \phi > \pi$. Finally, the level of human capital is private information of the individual politicians, and can be learned by employers if individuals join the private sector. Voter's beliefs about the probability that a politician is a high type are denoted by κ , and are updated in equilibrium. In every period, the politician in office chooses an action $x_t \in \{A, B\}$. The voter gets a payoff u^V of 1 if $x_t = \theta_t$ and 0 otherwise. We assume that the voter, before the elections, always observes x_1 . On top of that, he may observe u^V with probability ρ . The politician in office gets a payoff of $u + E$ if $x_t = \theta_t$ and of E otherwise. Hence, u captures the degree of policy motivation and E captures the value of office-related perks.

We add two elements to this standard political agency setup. First, we assume that politicians, if they are not re-elected, can opt for a politically connected outside option (PCO) in the second period of their life. O is the value of the PCO, that can be chosen

only by former politicians who are no longer in office. Of course, they may also go back to the private market if more convenient for them.

Second, we add a selection phase at the beginning of the game. Formally, there is a continuum of measure 1 of potential candidates, each of them with human capital ϕ . The pool is such that $Pr(\phi = 1) = \kappa_0$, common knowledge. At the beginning of the game, one of the prospective candidates is randomly drawn and can choose between a political career or staying in the private market. If she chooses to stay in the private market ($d = mkt$), she earns a salary $w(\phi)$ in each of the two periods, where of course $w(\phi_L) < w(\phi_H)$, and a new prospective candidate is drawn. The first prospective candidate that accepts ($d = pol$) becomes the incumbent politician in period 1. She observes s_1 and chooses x_1 . At the end of the period, she faces an exogenously given candidate whose level of human capital is the same as her ex-ante level, namely $\kappa := Pr(\phi = 1 | d = pol)$. If voted out at the end of period 1, she can either go to the private market and earn $w(\phi)$, or opt for the PCO and earn O . To make the running choice smoother, we assume that there is an element of noise, modelled as an idiosyncratic shock ϵ uniformly distributed on $[-\frac{1}{\psi}, \frac{1}{\psi}]$, with support sufficiently large to avoid 0 probability cases. Shocks are independent across individuals. In practice, this means that an individual with ability ϕ becomes a politician in $t = 1$ if

$$\mathbb{E}u^P(pol|\phi) + \epsilon \geq \mathbb{E}u^P(mkt|\phi) \quad (1)$$

where $\mathbb{E}u^P(pol|\phi)$ is the expected utility of a political career and $\mathbb{E}u^P(mkt|\phi)$ is the expected utility of a career in the private sector at that point in time. We assume that $O > w(\phi_L)$, otherwise no politician would ever be interested in O and thus it would be irrelevant. Furthermore, we assume $E > \max[w(\phi_H), O]$, so that politicians are always interested in pursuing re-election. To ease the exposition, we also focus on the case where $u - w(\phi_H) \geq \phi_L u - O$, so that high h.c. types are at least as motivated as low h.c. types in being re-elected. As shown in Appendix C.1, our results go through also in the opposite case.

2.1.1 Timing and solution concept

To sum up, timing is as follows:

Period 1:

1. prospective politicians choose between market ($w(\phi)$ forever) or politics: the first prospective candidate accepting is in office in period 1.
2. Politician in office observes s_1 and chooses x_1 ;
3. V observes x_1 and, with probability ρ , also u_1^V , and update beliefs on κ ;
4. There is an exogenous challenger with the same (ex ante) expected ability as period 1 politician;

5. V votes;

Period 2:

1. If kicked out, the politician chooses between O and $w(\phi)$. Whoever is in office observes signal s_2 and chooses policy x_2 .
2. Payoffs are paid and the game ends.

Our solution concept is Perfect Bayesian Nash equilibrium (PBNE). As in Ashworth and Shotts (2010), we focus on two classes of equilibria: full accountability and pandering. Full accountability equilibria are those where politicians of every type choose $x_t = s_t$. Note that those equilibria maximize V 's welfare, at the policymaking stage. In case of multiple pandering equilibria, we choose those where the incumbent is retained with the highest probability.

2.1.2 Discussion

The model implicitly assumes a different level of information between employers and voters: only the former know the true ϕ . This assumption can be justified on several grounds (employers have relatively higher stakes than voters in determining the true “ability” level of an employee, and they typically have access to more information). Moreover, it is not necessary for our results. In fact, results are qualitatively unchanged if we assume that employers have the same information as voters, and that the true level of ϕ is revealed to everyone after the elections, at the beginning of period 2. Furthermore, all the results on political selection would be exactly the same if ϕ was observable by everyone from the beginning of the game. Some uncertainty on it, from the voters' side, is needed to generate the signalling incentives behind the policymaking part of the game.¹⁴

On the technical side, it is not obvious how to model the expected quality of period 2 challenger. Allowing endogenous entry in the second period is of course possible, but it would imply a decision based on one period only (rather than on two), and therefore quite different from period 1's entry decision. Hence, we decided to make assumptions on voters' beliefs: we assume that the voter expects the challenger to have the same expected quality as the first period incumbent. This would be the outcome in a stationary equilibrium of the fully dynamic, infinite horizon version of this game, but agency models lose tractability very quickly in those cases. In practice, when making their entry decision, prospective politicians anticipate that the voter will have the same expectation on the challenger as the one (pre-policy but of course post-entry) on the incumbent. This is of

¹⁴In the empirical application we use education as a proxy for human capital. Education is, of course, observable. However, it is only a noisy proxy of human capital. Our empirical results on policymaking are consistent with a theoretical model where there is some value from signalling, hence either voters do not focus too much on the education of candidates or low education candidates have, on average, stronger signal incentives than high education candidates.

course an equilibrium object, from the point of view of the entry choice, but it will be “sunk” when the voter chooses how to vote. And the voter’s action is the only thing that matters for the entry decision.

2.2 Analysis

2.2.1 Policymaking

We start from the policymaking phase. Note, in fact, that in the second period every politician in office chooses $x_2 = s_2$, and as a consequence the voter’s sequentially rational election strategy is to keep the incumbent if, in expectation, she is more likely than the challenger to be a high human capital type. Therefore, denoting by $r(\Omega)$ the probability that V confirms the incumbent when his information is Ω , we have that in every equilibrium

$$r(\Omega) = \begin{cases} 0, & \text{if } \hat{\kappa} < \kappa \\ [0, 1], & \text{if } \hat{\kappa} = \kappa \\ 1, & \text{otherwise} \end{cases}$$

where $\hat{\kappa}$ denotes the updated beliefs over the human capital of the incumbent after observing the policy choice and possibly the outcome. κ instead is the belief that the running politician is a high human capital type (which is also an equilibrium object and depends on the entry decision, but it is determined at this point). Given this strategy, our model replicates Lemma 3 of the working paper version of Ashworth and Shotts (2010):

Lemma 1 *In every equilibrium where $r(\theta_1 = x_1) = 1$ and $r(\theta_1 \neq x_1) = 0$, for any set of parameters at which a low human capital incumbent wants to follow a B signal, a high human capital incumbent also wants to follow a B signal.*

This implies that, whenever the low h.c. politician is indifferent between action A and B after observing a signal B, the high h.c. politician strictly prefers B. Hence, pandering incentives are stronger for the low h.c. politician. The rest of the analysis is also very similar, thus we refer to the original paper. In a nutshell, choosing the ex-ante more popular policy ($x_1 = A$) gives an electoral advantage when u^V is unobserved. This creates the incentive to ignore s_1 whenever its realization is B, despite the fact that $Pr(\theta_1 = B|s_1 = B) > Pr(\theta_1 = A|s_1 = B)$, given the informativeness of the signal. This incentive is stronger for low human capital politician, because their signal is less precise, and it is mitigated by ρ , because incumbents producing $u^V = 0$ are surely voted out, in equilibrium. Thus, there is a level of ρ sufficiently high so that a perfect accountability equilibrium is incentive compatible. The only difference with respect to (Ashworth and Shotts, 2010), at this stage, is the presence of the PCO, that is always chosen by low human capital politicians. This modifies slightly the condition on ρ that guarantees the existence of perfect accountability equilibria:

Lemma 2 *There exists a perfect accountability equilibrium iff $\rho \geq \frac{(v(L)-O)-(1-2\lambda_B)u}{2(1-\lambda_B)(v(L)-O)} := \bar{\rho}$, where $\lambda_B = \Pr(\theta_1 = A | s_1 = B) < 0.5$ and $v(L) = u\phi_L + E$.*

In this perfect accountability equilibrium, $r(x_1 = \theta_1) = 1$, $r(x_1 \neq \theta_1) = 0$, $r(x_1 = A) = 1$ and $r(x_1 = B) = 0$. When ρ is too small, the perfect accountability equilibrium is no longer sustainable, because the low human capital politician has a strong incentive not to follow s_1 when it points toward the least likely state. In this case, multiple equilibria exists. We select and characterize the equilibrium with the highest probability that the incumbent is retained.¹⁵

Lemma 3 *If $\rho < \bar{\rho}$, there exists an equilibrium where the high human capital incumbent chooses $x_1 = s_1$ and the low human capital incumbent chooses $x_1 = s_1$ if $s_1 = A$ and mixes choosing $x_1 = A$ with probability σ if $s_1 = B$. V always re-elects when $x_1 = \theta_1$, re-elects with probability 1 if $x_1 = A$ and θ_1 is unobserved and re-elects with probability r_B if $x_1 = B$ and θ_1 is unobserved.*

In this case, $r_B = 1 - (1 - 2\lambda_B) \frac{(v(L)-O)\rho+u}{(1-\rho)(v(L)-O)}$ and $\sigma = 1 - \frac{1-\pi}{\pi(1-\phi_L)+(1-\pi)\phi_L}$. As in Canes-Wrone et al. (2001), σ captures the probability that an incumbent chooses to pander, i.e. picks the ex ante popular action ignoring valuable private information. We are now in the position to state the first main result of our model.

Proposition 1 *As O decreases, the range of parameters where there is a full accountability equilibrium decreases and the range of parameters where there is a pandering equilibrium increases.*

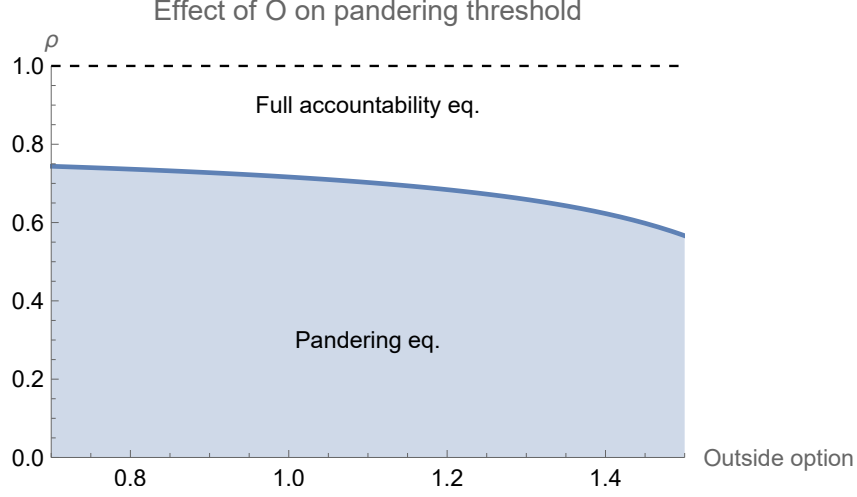
The intuition behind Proposition 1 is simple. Conditional on being in office, a reduction in O is like an increase in E : it makes losing costlier, or holding the seat more valuable.¹⁶ This affects the basic trade-off faced by low human capital politicians when they receive $s_1 = B$. By choosing the action most likely to be correct ($x_1 = B$), they risk not to be re-elected, if θ_1 is not revealed before the election. By choosing the ex ante popular action, they are more likely to stay in office. If the cost of losing increases, because O decreases, the full accountability equilibrium will be incentive compatible for a smaller range of parameters. Figure 1 provides an illustration of this point. A further point to be noted is that, in a pandering equilibrium, only low human capital politicians choose to pander. Thus the reduction in O should not change the behavior of high human capital politicians (they keep following the signal), while low human capital individual should have a stronger incentive to implement suboptimal, but electorally rewarding, policies. Finally, the model predicts that a change in behavior should be observed for individuals

¹⁵Note: there is at least another equilibrium that is welfare-equivalent from V 's perspective. However, we focus on the equilibrium where the incumbent is retained with the highest probability. For the "selection" analysis, this choice is not fully wlog.

¹⁶As pointed out also by Keane and Merlo (2010).

that can run for office after the policy is implemented. Individuals in their last term are less affected by the introduction of cooling off periods. Therefore, any effect on policymaking should be stronger for non-term limited, low human capital individual.

Figure 1: Outside option and pandering equilibria



Notes. Values of ρ where the full accountability or the pandering equilibrium exists, as a function of O .

2.2.2 Selection into politics

We now move to the selection choice, that happens at the beginning of the first period. The “outcome variable” we are interested in is the probability that someone choosing to run for office is a high h.c. individual, i.e. κ . In every equilibrium, applying Bayes’ rule,

$$\kappa = \frac{1}{1 + \frac{Pr(run|\phi_L)}{Pr(run|\phi_H)} \frac{1-\kappa_0}{\kappa_0}}$$

where the probability that candidates of different types choose to run are determined in equilibrium, as a function of their expected payoff from pursuing different careers. Given our distributional assumption on the random shock, in every equilibrium of the game

$$Pr(run|\phi) = \frac{1}{2} - \frac{\psi}{2} \left(\mathbb{E}u^P(mkt|\phi) - \mathbb{E}u^P(pol|\phi) \right)$$

Finally, note that

$$\frac{\partial \kappa}{\partial O} < 0 \Leftrightarrow \frac{\partial \mathbb{E}u^P(pol|\phi_L)}{\partial O} Pr(run|\phi_H) > \frac{\partial \mathbb{E}u^P(pol|\phi_H)}{\partial O} Pr(run|\phi_L)$$

In words, for an increase in O to reduce the probability that a candidate is of high h.c., the relative variation induced by a change in O must be larger than the ratio of the two probabilities of running. As $O > w(\phi_L)$, so a not re-elected L politician chooses O . A H politician chooses O if $O > w(\phi_H)$ and the private sector salary otherwise. $\mathbb{E}u^P(pol|\phi)$ depends on the equilibrium that will be played in the policymaking phase. However, we can show that, in both the equilibria we consider for the policymaking case,

$\frac{\partial \mathbb{E}u^P(pol|\phi_L)}{\partial O} > \text{Max}[\frac{\partial \mathbb{E}u^P(pol|\phi_H)}{\partial O}, 0]$. In other words, the direct effect of O is always stronger for low h.c. politicians.¹⁷ They are more likely to choose the PCO (high h.c. politicians may prefer the private market, when $O < w(\phi_H)$) and, at least in perfect accountability equilibria, they are always more likely to need it, because they are more likely to lose office. However, this is not always enough to cause a negative effect of O on κ , because it may be that $Pr(run|\phi_L)$ is sufficiently larger than $Pr(run|\phi_H)$ to overcome the direct effect. Proposition 2 shows the existence of a sufficient condition for the direct effect to always dominate the “level effect”.

Proposition 2 *If parameters are such that, in equilibrium:*

- *an increase in O reduces the expected utility from politics for high human capital individuals, or*
- *$Pr(run|\phi_L) \leq Pr(run|\phi_H)$*

then $\frac{\partial \kappa}{\partial O} < 0$. Otherwise, there exists a sufficiently small ψ such that $\frac{\partial \kappa}{\partial O} < 0$.

It is important to stress that Proposition 2 shows a list of sufficient conditions, but weaker conditions (even conditions that do not depend on ψ) can also be found. Intuitively, an increase in O reduces the expected human capital of candidates, irrespective of ψ , whenever $Pr(run|\phi_L) \leq Pr(run|\phi_H)$, i.e. whenever high h.c. prospective candidates are more likely to run than low h.c. prospective candidates. This is more likely to be true whenever human capital makes a meaningful difference in terms of payoffs from politics, but it does not make much of a difference in terms of market wages (e.g. if market wages are independent of ϕ). More straightforwardly, if an increase in O , which always increases the expected utility from a political career for low h.c. individuals, decreases it for high h.c. individuals, it will obviously reduce κ . Finally, for small ψ the two baseline running probabilities are similar, therefore the direct effect dominates.¹⁸

To complete the picture, it is worth making the explicit comparison between O and the office perks E . Both of them tend to increase the benefit from a political career, but they do so in different ways and, in fact, they have different effects.

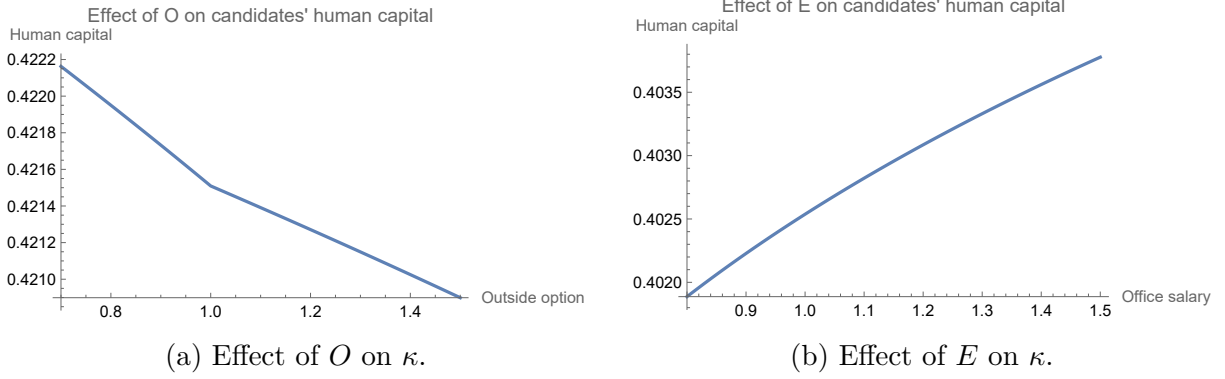
Proposition 3 *If parameters are such that, in equilibrium, $Pr(run|\phi_L) \geq Pr(run|\phi_H)$, then $\frac{\partial \kappa}{\partial E} > 0$. Otherwise, there exists a sufficiently small ψ such that $\frac{\partial \kappa}{\partial E} > 0$.*

¹⁷Together with the first effect of making a political career more attractive, O has also a second effect going through r_B in pandering equilibria. Intuitively, an increase in O must be compensated by a decrease in r_B , in equilibrium, in order to keep the low type indifferent between policy A and B after $s_1 = B$ (without the decrease in r_B , an increase in O would increase the incentive to choose B rather than A). This second effect is always dominated by low types, but it may actually dominate in case of high human capital candidates. For them, an increase in O may actually decrease the benefits from a political career. See the proof of Proposition 2 for more details.

¹⁸Note that the equilibrium selection choice may play a role here. Different pandering equilibria can, indeed, have different implications, depending on the importance of the indirect effect that O has on politicians' welfare through re-election probabilities.

The intuition is exactly the opposite. E has a positive direct effect on $\mathbb{E}u^P(pol)$ for both types, but it is stronger for high h.c. types. Figures 2a and 2b show the effect on κ of O and E . The additional (sufficient) conditions make sure that the level effect does not dominate the direct effect.

Figure 2: Outside options, office perks and human capital



Propositions 2 and 3 show that two policies affecting the overall value of a political career in the *same direction*, such as a reduction in O or a reduction in E , can have *completely opposite* effects in terms of composition of the pool of candidates.¹⁹ When the equilibrium strategies of re-election, policymaking and entry are considered, it becomes clear that high h.c. politicians are disproportionately more affected by a change in office wages (vis-a-vis low h.c. politicians) and disproportionately less affected by changes in the value of politically connected outside options. Therefore, the overall effect of those policies on the pool of candidates can be very different. More broadly, this stresses the importance of taking into account the nuances of rewarding schemes for politicians.

3 Institutional setting

3.1 Italian municipalities

Italy is comprised of 8,047 municipalities, with a majority (70.5%) having populations of fewer than 5,000 residents. These municipalities bear responsibility for essential services such as municipal police, infrastructure, welfare, housing, garbage collection, and water supply. Managing approximately 10% of the nation's public expenditures, municipalities allocate an average of 1856 euros per capita, based on data from 2015-2017 (Aida Pa, Bureau Van Dijk). Local taxes contribute around 20% of their revenue, with significant sources being the property tax introduced in 1993 under Legislative Decree 504/1992, and a surcharge on residents' income tax implemented in 1999. The remaining

¹⁹In Keane and Merlo (2010), a private sector ban increases one dimension of the "quality" of congresspeople, as well as an increase in wages. However, as they focus on sitting congresspeople, those policies effectively move in the same direction (i.e. they both increase the value of holding office, conditional on being in office). Our model allows us to study also the effect of those policies on the overall value of a political careers, and the asymmetries that arise.

funds are derived from discretionary transfers provided by higher levels of government, including provinces, regions, and the central State. Mayors wield significant influence within municipal governments as they possess the authority to appoint and dismiss ministers who serve as part of the municipal administration (called “giunta”). Furthermore, if the municipal council decides to dismiss the mayor, the council is dismissed as well and a new one is elected.

Direct elections have been in place since 1993 (Law 81 of 1993) for Italian municipal mayors. An important difference arises at the same population threshold we are using for this paper: in municipalities with populations below 15,000, mayors are elected through a single round plurality rule, while larger municipalities employ a run-off system. However, note that this distinction has remained constant from 1993 onward. Mayors hold office for five years and are eligible for a maximum of two consecutive terms.

3.2 The “Legge Severino”

We focus on one of the decrees included in the so-called “Legge Severino” (Legislative Decree No. 39 of April 8, 2013), which introduced a broad set of anti-corruption measures applicable to all Italian municipalities. Among its provisions, the law established a “cooling-off” period for mayors, members of the municipal executive, and members of the municipal council in municipalities with more than 15,000 inhabitants. Specifically, these politicians must wait one year after the end of their term in office before taking a leading position in the public administration or in a publicly owned enterprise controlled by regional or provincial administrations, or by municipalities with populations exceeding 15,000 inhabitants within the same region (Article 7). The cooling-off period extends to two years if the public entity controlling the enterprise is the same municipality in which they served. In addition, they must wait two years before being eligible for appointment as director of the local health authority (*azienda sanitaria locale*) whose jurisdiction includes their municipality (Article 8).

The law also stipulates that current mayors, executive members, and council members of municipalities above the 15,000-inhabitant threshold cannot be appointed to leading positions in state-owned enterprises, regional or provincial administrations, or local health authorities. Politicians already holding such positions at the time of the law’s approval were required to choose between the political and managerial role. Importantly, these provisions applied retroactively to politicians already in office in 2013 (Articles 12–14). According to the law, “leading positions” refer to executive roles in the public administration and in state-owned enterprises (SOEs), including chief executive officers (CEOs), presidents of the board, general directors, and senior management positions.

The law also applies to municipal politicians serving in the governing bodies of inter-municipal unions (*unioni di comuni*) whose total population exceeds 15,000 inhabitants, even when the individual municipality lies below the threshold. This creates a potential

overlap, as mayors of small municipalities could be indirectly affected by the law through their participation in unions whose combined population exceeds 15,000.²⁰

Finally, ANAC (Anti-corruption authority), AGCM (Anti-trust authority) and Corte dei Conti (Court of Auditors) are in charge of enforcement and sanctions. In particular, ANAC can declare null and void appointments in contrast with the Law (art. 16) and as a consequence employment contracts are immediately revoked. Furthermore, members of the administration making an illegal appointment are personally responsible for the economic consequences of that actions (art. 18). ANAC is also in charge of monitoring.

3.3 State-owned firms in Italy

State-participated (SPE) and State-owned enterprises (SOE) represent an important component of the Italian economy. The State holds shares in some of the biggest public companies in the Milano Stock Exchange, such as ENI, ENEL, and Leonardo. In 2023, the capitalization of the 13 SPEs accounted for 30% of the total capitalization of the Italian stock market (ANSA, 2023). According to the Italian Statistical institute (ISTAT, 2024b), 7808 SPEs were active in Italy in 2021. Of those, 3517 are SOEs. They employ around 580.000 people, the 5.1% of the total workforce for industry and services (ISTAT, 2024a,c). Besides, 41% of all the SOEs are controlled by local governments (i.e., provinces or municipalities). They employ 146,000 people and two-thirds of them are active either in the transportation sector or in the water and waste management sector (ISTAT, 2024b). According to the Ministry of Economics and Finance, between 2014 and 2021 Italian municipalities appointed 23,235 people (or 68,567 positions x year) in 5177 different enterprises. Of those, 11,423 people received a salary (12.6% as CEOs, 62.6% as board members), implying that each municipality appointed 1.4 people in paid positions in the 8 years span. In their compensation structure, SOEs must abide with the law D.lgs. 17/2016. The maximum amount that a person can receive from SOEs is 240,000 euros (gross, per year), as per art. 6. This applies to every position. Moreover, the threshold is measured at the individual level, therefore a person paid by multiple SOEs cannot get more than 240,000 euros per year in total. For CEOs, at least 30% of the total remuneration (still within the limit) must be linked to specific objectives.

²⁰As explained below, to address this issue, we perform a robustness check in the Appendix in which we exclude these municipalities. The results remain virtually unchanged. We take this approach because, while we observe whether a municipality belongs to a union, we do not have information on whether its mayor or other municipal politicians actually serve in the union's governing body.

4 Empirical Evidence

4.1 Empirical strategy

We use Italian municipality-level data for 1993-2021 and exploit the introduction of an anti-revolving door policy (Legge Severino) in 2013. Among other norms aimed at safeguarding the bureaucracy from political influence and fighting corruption (whose application extended to the whole set of politicians and institutions), the law prescribed a “cooling-off” period of one or two years for those holding a political office, and forbids politicians from holding also some positions in SOEs or in the bureaucracy. This “cooling-off” period means politicians cannot be appointed to a high-level position in the bureaucracy or State-owned enterprises for two years after leaving politics. However, this type of provision is limited to politicians (from a member of the city council upward) serving in a municipality with at least 15,000 inhabitants. Politicians holding office in towns below that threshold are not affected by this part of the law. In addition, the application is limited to State-owned enterprises and bureaucratic positions belonging to the same region of the municipality where they held office.

This threshold provides the necessary variation to causally identify the effect of the anti-revolving doors policy on a series of outcomes. Specifically, we can compare municipalities slightly above and below the 15,000 inhabitants threshold, pre-post-2013. More in detail, we estimate the effect of the anti-revolving doors policy using the following difference-in-discontinuity approach (Grembi et al., 2016; Gamalerio and Trombetta, 2025):

$$Y_{it} = \rho_0 + \rho_1 R_{it} + (> 15000_i) * (\beta_0 + \beta_1 R_{it}) + (Post_t) * [\pi_0 + \pi_1 R_{it} + (> 15000_i) * (\phi_0 + \phi_1 R_{it})] + \eta_{it} \quad (2)$$

where Y_{it} is our outcome variable (candidates and elected mayors’ education, the probability that a politician holds executive positions in a SOE, our measures of policymaking). The variable $R_{it} = P_{it} - P_{15000}$ is the normalized population which measures the distance of municipality i from the 15,000 inhabitants threshold P_{15000} at time t . The population P_{it} comes from the most recent census produced by the Italian Statistical Office (Istat) in 1991, 2001, or 2011. The dummy variable $(> 15000_i)$ is 1 if municipality i is above the 15,000 inhabitants threshold. The dummy variable $(Post_t)$ equals 1 for elections starting from 2013. The temporal dummy variable $(Post_t)$ has been built in this way because the selection of (new) politicians can happen only during electoral years and not during the electoral mandate (i.e., far away from elections). The treatment variable is the interaction term between $(> 15000_i)$ and $(Post_t)$. The coefficient of interest is ϕ_0 , which captures the effect of the anti-revolving door policy on the selection of politicians, comparing municipalities in which the policy applies and municipalities in which it does not.

We estimate model (2) by local linear regression (Gelman and Imbens, 2018), using the subsample of observations which lie in the interval $R_{it} \in [-h, +h]$ around the threshold, where the optimal bandwidth h is calculated following the Calonico et al. (2014) Calonico et al. (2018) MSE-optimal bandwidth. Standard errors are clustered at the municipality level.

This approach relies on three core assumptions, each of which we systematically evaluate in subsequent sections of the paper. The first assumption centers on the requirement that there is no evidence of manipulative sorting of the running variable R_{it} around the 15,000-inhabitant threshold, both prior to and following the year 2013. This implies that municipalities should not have the capability to selectively position themselves on one side of the threshold. The second assumption concerns the requirement that other potential outcomes and municipal characteristics remain balanced around the threshold before and after 2013. To assess this, we estimate model (2) using observable municipal characteristics as dependent variables. The third assumption requires that municipalities located just below and just above the 15,000-inhabitant threshold follow parallel trends prior to the 2013 reform. The test of this parallel trends assumption, a standard requirement in difference-in-differences analyses, as well as all other robustness checks, is described in Section 4.3.3.

4.2 Data

To study the political effects of anti-revolving door policies we combine several datasets. We collect municipality-level data for the period 1993-2024, organized by election year (i.e. one observation every 5 years per municipality) or by year. The datasets include information on socio-demographic variables (from ISTAT), electoral results (from the Ministry of Interior), and revenues coming from the municipal surcharge on the national income tax (“Addizionale Irpef”, from Aida PA and the Ministry of Economy and Finance). In addition, we have individual level information on mayors and mayoral candidates, which include education, occupational experience, gender, age, and political experience (from the “Anagrafe degli amministratori locali”). To construct the estimation sample, we restrict the analysis to municipalities with populations between 10,000 and 30,000 inhabitants, in order to avoid overlapping with other population thresholds at which different policies apply (Bordignon et al., 2016). We also exclude municipalities located in the five Special Statute Regions (i.e., Trentino-Alto Adige, Valle d’Aosta, Friuli-Venezia Giulia, Sicilia, and Sardegna), as many institutional features — including electoral rules — differ in these regions. These selection criteria result in a sample of 795 municipalities. Descriptive statistics for this sample are reported in Table B1.

Besides, we build a novel dataset with individual-level information of people holding “leading positions” in State-participated enterprises (i.e., either a SOE or a PMSE). Given the scope of the law, that applies to executive positions in SOEs, we include

CEOs, presidents of the board, general directors, and the senior management in general. The collected dataset is at the person x firm x year x position level, with a total of more than 700,000 observations. It includes names, positions, years the position was held and sometimes additional demographics. The original sources are the historical archives of Aida. We can match the names contained there with the list of elected mayors, so that we can code whether a mayor has been appointed to a leading position in a State-participated firm. Clearly, our dataset includes also other positions (e.g. board members, statutory auditors etc.), that appear to be excluded from the application of the law. Figures B1a and B1b provide an illustration of the time dimension of our dataset. Overall, the highest share of mayors with a leading position in a SOE in a given year is around 3%, while it is well below 1% for PMSE.

To define whether a firm is a SOE or a PMSE, we use the list of State-participated enterprises provided by the Italian Ministry of Economics and Finance and consider SOE those that are mentioned as such or where the “State” (including local governments) holds more than 50% of the shares, and PMSE the rest.²¹ Note that this notion of “control” is quite restrictive, as it is possible to be in control of a firm with a much smaller percentage of the shares.

4.3 Main results

4.3.1 Nomination in State-owned companies

Our first outcome variable serves as a direct test of the reform’s effectiveness. Specifically, we examine the probability that a mayor is appointed to a leadership position in a firm in which the State holds shares, either during or after their mandate. To construct this variable, we match the list of mayors with the list of individuals occupying top positions in either state-owned enterprises (SOEs) or firms in which the State owns a minority share (public minority share enterprises, PMSEs). The outcome variable takes the value of 1 if a mayor begins holding a leading position in an SOE or a PMSE during their mandate or within one year after its end. It is important to note that the Severino Law applies only to SOEs and not to PMSEs; therefore, any effect of the reform should be observed exclusively in the former. However, this constitutes only a partial test of the reform’s effectiveness. The analysis focuses on one specific channel through which the Severino Law may influence politicians’ incentives—namely, the transition from elected office to positions in state-owned firms. The Severino Law also extends to top positions in local health authorities and in the public bureaucracy. Due to data limitations, we are

²¹More in details, the Ministry for Economics and Finance (MEF) provides data on firms where the State owns a fraction of the shares spanning from 2011 to 2020. In recent years, from 2017 onward, the MEF explicitly indicates whether a firm is a “controllata”, i.e. a SOE. Beforehand, we code as SOE all the firms where the State owns at least 50% of the shares. Then, we collapse all the observations into a time-invariant list, where a firm is considered a SOE if it is coded as such at least once.

unable to observe appointments in these sectors, and hence cannot test those additional channels.

Table 1 reports the results of a diff-in-disc estimation, using observation at municipality x mayor x year level. The outcome variable is equal to 1 if the mayor of a certain municipality holds a leading position in a State-participated enterprise, either during or after her mandate. We run the regression for SOEs and PMSEs separately, showing an effect that is consistent with our expectations (and the provisions of the Severino law). As implied by the coefficient of the interaction term $Post*(> 15000)$, the probability that a mayor holds a leading position in a SOE decreases, because of the reform, by 5.1 percentage points. To interpret the magnitude of the coefficient, it is useful to consider the dynamic structure of our dataset. In the pre-2013 period, the probability that a mayor is appointed in a SOE was around 1.1% for municipalities around the threshold (roughly the same above and below it). In the post-period, this probability increases to 5.4% for municipalities just below the threshold (those not affected by the Severino law). At the same time, it decreases to 0.3% for municipalities above the threshold (those affected by the law), implying a causal effect of -5.1 percentage points. The effect on PMSE, instead, is essentially a 0, both in statistical and economic terms.

Table 1: The effect of anti-revolving doors policy on mayors' appointment in State-participated companies

	(1)	(2)
Dep. Var.	=1 appointed in SOE	=1 appointed in PMSE
Control Function	Linear	Linear
Bandwidth	CCT	CCT
Controls	No	No
(> 15000)	-0.005 (0.013)	0.000 (0.005)
Post	0.043* (0.024)	-0.003 (0.004)
Post*(> 15000)	-0.051** (0.024)	0.003 (0.006)
Observations	5521	6388
Bandwidth	1602	1844
Mean outcome	0.019	0.001

Notes. Diff-in-disc estimates of the impact of anti-revolving door on the probability that a Mayor is appointed to a leading position in a SOE (column 1) and in a PMSE (column 2). Initial sample: municipalities between 10,000 and 30,000 inhabitants. Electoral terms between 1993 and 2021. Variables in the Table: 1) (> 15000) = 1 for municipalities with more than 15,000 inhabitants; 2) (Post) = 1 for electoral terms starting from 2013. The outcome variable is a dummy equal to 1 if a mayor holds a leading position in a SOE in column 1, and it is a dummy equal to 1 if a mayor holds a leading position in a PMSE in column 2. Robust standard errors clustered at the municipality level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Tables B2 and B3 in the Appendix perform the same exercise for politicians in office and in the two years after their mandate separately. Although the effect is statistically significant only when we consider the years after the political mandate, the sign and

magnitude is fairly similar. Moreover, in both cases the relevant coefficient for PMSEs is essentially zero.

Our dataset on leading positions in SOEs is also useful for assessing the consistency between the data and a key assumption of our model—namely, that PCOs are more attractive, in terms of post-office career opportunities, for low-human capital politicians than for high-human capital politicians. To test this, Table 2 reports regressions of the probability that a mayor is appointed to a leadership position in an SOE, either during their term in office (columns 1–2) or within two years after its end (columns 3–4), on a dummy variable equal to one if the mayor holds a postgraduate degree. The specifications include municipality and year fixed effects, as well as a set of controls for the mayor’s characteristics (high-skill occupation, gender, and age) and for municipal population. Consistent with the model’s assumption, we find that holding a postgraduate degree is associated with approximately a one-percentage-point lower likelihood of obtaining such a position after leaving office—suggesting that these PCOs may represent a more relevant post-office career path for less-educated politicians.

Table 2: Human capital of mayors and appointment in SOEs

	Term		2y post-term	
Dep. Var.: appointed in SOE	(1)	(2)	(3)	(4)
Postgraduate mayor	0.002 (0.004)	0.001 (0.004)	-0.009* (0.005)	-0.011** (0.005)
Observations	18336	18025	4975	4916
Mean dep. var. (postgrad=0)	0.009	0.009	0.013	0.014
Controls	N	Y	N	Y
Municipality FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y

Notes. OLS estimates of the probability that a mayor is appointed in a leading position in a SOE (i.e., president, CEO, senior management), either during its term in office (columns 1 and 2) or in the two years after it (columns 3 and 4). Initial sample: municipalities between 10,000 and 30,000 inhabitants. Electoral terms between 1993 and 2021. Variables in the Table: Postgraduate mayor: dummy for mayor with a postgraduate degree. The outcome variable is a dummy equal to 1 if a mayor holds a leading position in a SOE. Controls are a dummy for a mayor doing an high skill job, a dummy for female mayors, the age of the mayor and the population of the municipality in a given year. Robust standard errors clustered at the municipality level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

4.3.2 Selection of politicians

This section examines how the introduction of the Severino Law affected the selection of local politicians. For this exercise, we restrict the data for each municipality to two elections before and two elections after the introduction of the Severino Law, ensuring comparability across the pre- and post-reform periods. As a result, the analysis includes elections held between 2003 and 2021. We exclude electoral years after 2021, since the enforcement of the Severino Law—in particular, the cooling-off period—was suspended

starting in 2022 due to the pandemic.²² We use the difference-in-discontinuity approach described above, and we find that the anti-revolving door policy increases the average education level of mayoral candidates, consistent with the model’s predictions.

The results of this analysis are reported in Table 3 and illustrated in Figure 3. Specifically, both the table and the figure show that, in municipalities just above the 15,000-inhabitant threshold—compared to those just below—the introduction of the policy led to a significant rise in the average years of education among mayoral candidates. The coefficient of interest in both specifications is the interaction term between *Post* and ($> 15,000$), which captures the causal effect of the reform around the relevant population cutoff. Since the dependent variable measures the average years of education of mayoral candidates at the municipality level, the estimated coefficients imply an increase of approximately two years, corresponding to about a 13% rise relative to the pre-reform average of 15 years. This piece of evidence supports the key prediction of our theoretical model: by eliminating post-office career opportunities (PCOs), the reform reduced the expected value of holding office relatively more for low-human capital politicians, thereby increasing the relative share—and consequently the average education—of higher-human capital candidates. A similar pattern emerges when considering the average education of elected mayors.²³

4.3.3 Robustness

Our findings are robust to a series of checks. First, since the diff-in-disc approach relies on the same assumptions as difference-in-differences, we examine whether municipalities just below and just above the 15,000-inhabitant threshold followed parallel trends prior to 2013. Evidence supporting the parallel trends assumption is presented in Figure 4. Specifically, following Grembi et al. (2016) and Gamalerio and Trombetta (2025), we run a series of cross-sectional RDD regressions comparing the educational attainment of politicians in municipalities just below and just above the threshold. Observations from different municipalities are grouped in a single regression based on the electoral year’s distance from the 2013 reform. For example, as shown on the x-axis of the two panels in Figure 4, a value of 0 corresponds to the first elections held immediately after the 2013 reform. A value of -1 refers to the elections held just before the reform, while -2 denotes the elections prior to those at time -1. We conduct the cross-sectional RDD regressions

²²The enforcement of the Severino Law—particularly Article 7 of Legislative Decree No. 39/2013—was temporarily suspended by Decree Law No. 4 of January 27, 2022, and the suspension was later extended until December 31, 2024.

²³We examine the effect of the anti-revolving door policy on other personal characteristics in the Appendix. We find no significant effect on age, but a positive and statistically significant increase in both the share of female candidates and the probability of a female mayor (Tables B4 and B5). In addition, we find a negative—though not statistically significant—effect on the number of mayoral candidates (Table B6), consistent with the model’s prediction of a general discouragement effect induced by the reform. For a more detailed discussion of these results, see Section B.3.

Table 3: The effect of anti-revolving door policy on the education of politicians

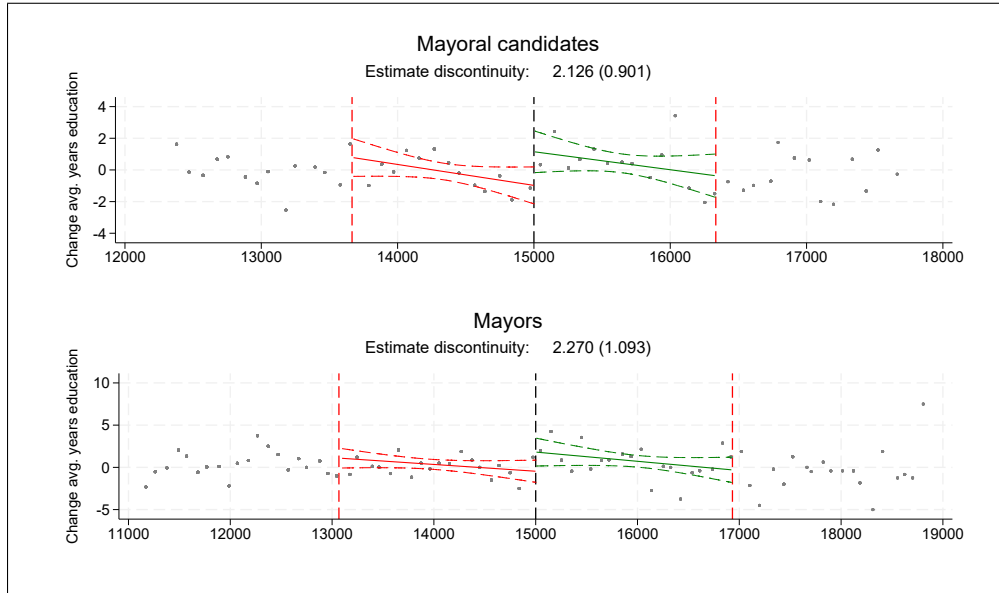
	(1)	(2)
Dep. Var.	Average years education mayoral candidates	Average years education elected mayor
Control Function	Linear	Linear
Bandwidth	CCT	CCT
Controls	No	No
(> 15000)	-1.141 (0.711)	-1.258 (0.829)
Post	-0.975 (0.595)	-0.458 (0.671)
Post*(> 15000)	2.126** (0.901)	2.270** (1.093)
Observations	532	751
Bandwidth	1334	1933
Mean outcome	15.646	15.819

Notes. Diff-in-disc estimates of the impact of anti-revolving door on the education of politicians. Initial sample: municipalities between 10,000 and 30,000 inhabitants. Electoral terms between 2003 and 2021. Variables in the Table: 1) (> 15000) = 1 for municipalities with more than 15,000 inhabitants; 2) (Post) = 1 for electoral terms starting from 2013. The outcome variable is the average years of education of mayoral candidates in column 1, and the average years of education of elected mayors in column 2. Robust standard errors clustered at the municipality level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

using the same CCT optimal bandwidths employed in Table 3: specifically, a bandwidth of 1334 for mayoral candidates and 1933 for mayors.

Crucially for the parallel trends assumption, the RDD coefficients are stable between

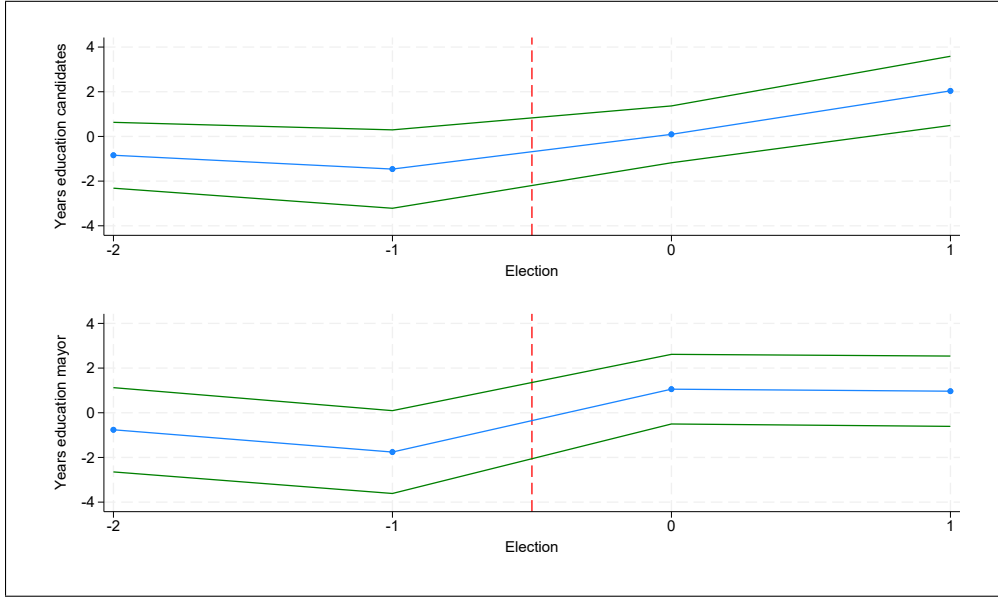
Figure 3: Diff-in-Disc graphical evidence



Notes. Diff-in-Disc estimates. Horizontal axis: population around the 15,000 threshold. Vertical axis: change in the average years of education of graduate mayoral candidates in the top graph and change in average years of education of elected mayors in the bottom graph. Scatter points are averaged over bins of 100 inhabitants. The central red and green lines represent a split linear polynomial of the outcome variable in the normalized population, fitted separately on each side of the threshold. The dashed lines capture the 95% confidence interval. The estimated discontinuity is the (Post)*(> 15000) coefficients and standard errors as reported in Table 3.

elections -2 and -1, indicating that municipalities just below and above the threshold followed similar trends in the pre-2001 period. Consistent with evidence of a positive effect of the anti-revolving door law on political selection, Figure 4 clearly shows that the magnitude of the coefficients increases after 2013 (i.e., in elections 0 and 1) compared to the pre-2013 period. All the coefficients are presented in Table B7 in the Appendix.

Figure 4: Cross-sectional RDD coefficients over time



Notes. RDD coefficients capturing the effect of being above the 15,000-inhabitant thresholds vs. being below it. On the x-axis, which goes from -2 to 1, we report the elections before and after the 2013 introduction of the anti-revolving door law, where 0 indicates the elections immediately after the introduction of the law. We run the cross-section RDD regressions using the same CCT optimal bandwidth reported in Table 3 (i.e., a bandwidth equal to 1334 for mayoral candidates and a bandwidth equal to 1933 for mayors). The blue lines connect the estimated coefficients, while the green lines represent the 95% confidence interval.

Second, consistent with the assumptions of the regression discontinuity design, Table 4 shows that pre-determined covariates are balanced around the 15,000-inhabitant threshold before and after 2013. To assess this, we conduct a difference-in-discontinuity analysis using these covariates as outcome variables. In none of the columns do we find a significant coefficient, providing no evidence that any other covariates experience a discontinuous jump at the population threshold we exploit.

Third, Figure 5 shows that the running variable is continuous at the 15,000 inhabitants threshold, thus there is no evidence of manipulation. In particular, Figure 5 plots a histogram with the density of the running variable and tests the null hypothesis of no discontinuity of the density of the running variable using the procedure recently developed by Cattaneo et al. (2018). Figure 5 provides evidence of no discontinuity and we fail to reject the null hypothesis of no discontinuity (robust p-value 0.146).

Fourth, in Table 5, we repeat the analysis excluding candidates from the Five Star Movement (M5S). This exclusion is motivated by the fact that the M5S rose to prominence

Table 4: Balance test at 15,000 inhabitant threshold

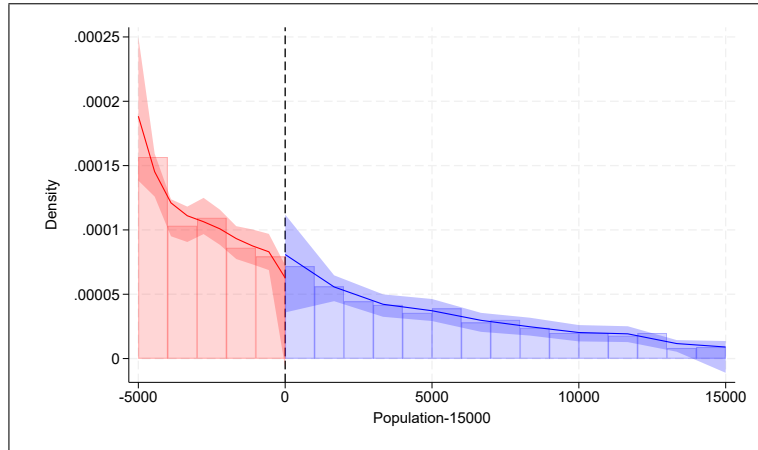
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	unempl.	college	foreign	income	no-profit	perc 0-14	perc 65	latitude	longitude
Post*(> 15000)	0.029 (0.030)	-0.003 (0.010)	0.003 (0.020)	-1.520 (1.661)	-0.001 (0.001)	0.013 (0.009)	-0.019 (0.015)	-1.066 (1.054)	0.636 (1.383)
Observations	526	615	528	506	672	506	626	518	584
Bandwidth	1329	1659	1332	1254	1748	1259	1601	1290	1516
Mean outcome	0.106	0.089	0.068	13.230	0.005	0.146	0.197	43.629	12.232

Notes. Diff-in-disc estimates. Variables in the Table: 1) (> 15000) = 1 for municipalities with more than 15,000 inhabitants; 2) (Post) = 1 for electoral terms starting from 2013. Outcome variables are: unemployment rate (1), share of residents with a college degree (2), share of foreign-born resident (3), average income (4), number of no-profit organization (5), percentage of residents aged 14 or lower (6), percentage of residents aged 65 or above (7), latitude (8) and longitude (9). Robust standard errors clustered at the municipality level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

in Italy around the same time as the policy change: they received 25.56% of the vote in the 2013 parliamentary elections, while being virtually non-existent in 2008. Moreover, existing evidence shows that they tend to perform better in municipalities with a run-off electoral system—i.e., those with more than 15,000 inhabitants (Bordignon and Colussi, 2020). It is therefore possible that the rise of the M5S interacts with how we define the treatment group, both across time and across municipalities. To ensure our results are not driven by this, Table 5 shows that the baseline findings remain robust when all candidates from this party are excluded.

Fifth, we address the concern that our estimates capture the effect of a different policy that switches on at the same population threshold: the legal limits on campaign expenditures introduced by Article 13 of Law No. 96 of 6 July 2012. The two treatments are perfectly collinear. Before 2012 no campaign-spending limit existed in Italian municipal elections; from that year on, a mayoral candidate running in a municipality above 15,000 inhabitants may spend at most €25,000 plus one euro per registered voter, a list

Figure 5: Density of the running variable



Notes. Discontinuity test for the density of the population at the 15,000-inhabitant threshold.

Table 5: The effect of anti-revolving door policy on the education of politicians (no 5-stars movement)

Dep. Var.	(1)	(2)
	Average years education mayoral candidates	Average years education elected mayor
Control Function	Linear	Linear
Bandwidth	CCT	CCT
Controls	No	No
(> 15000)	-1.347* (0.720)	-1.096 (0.824)
Post	-0.745 (0.615)	-0.192 (0.668)
Post*(> 15000)	2.262** (0.933)	1.998* (1.080)
Observations	483	768
Bandwidth	1331	1958
Mean outcome	15.720	15.840

Notes. Diff-in-disc estimates of the impact of anti-revolving door on the education of politicians. Original sample: municipalities between 10,000 and 30,000 inhabitants. We exclude candidates belonging to M5S. Electoral terms between 2003 and 2021. Variables in the Table: 1) (> 15000) = 1 for municipalities with more than 15,000 inhabitants; 2) (Post) = 1 for electoral terms starting from 2013; 3) (Post)*(> 15000) = interaction term between (> 15000) and Post. The outcome variable is the average years of education of mayoral candidates in column 1, and it the average years of education of elected mayors in column 2. Robust standard errors clustered at the municipality level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

at most one euro per registered voter, and a councillor candidate at most €5,000 plus five cents per registered voter.²⁴ The limits therefore apply to the same municipalities, on the same running variable, from the same year as the Severino Law. We address this concern by showing that they *do not bind*: observed campaign spending lies far below the legal ceiling, so that no candidate’s or party’s behaviour is plausibly constrained by it. In addition to this descriptive evidence, the existing literature on campaign-spending limits suggests that, even where they do bind, such limits do not improve the quality of elected politicians — or, if anything, push in the opposite direction: Broberg et al. (2026) show that the spending limits faced by candidates in French local elections leave the quality of winners unaffected, while Avis et al. (2022) find that stricter limits in Brazilian mayoral elections attract less wealthy candidates, with a negative (although statistically insignificant) effect on their years of schooling. Any confounding effect of the spending limits would therefore work against the increase in politicians’ education that we document.

More in detail, we assembled a new dataset of campaign expenditures in Italian municipal elections. It contains every candidate and every list we could find in every available source: 4,730 observations covering 225 municipalities and elections from 2004 to 2026, each traced to a verbatim passage of its source document. The three sources are the reports of the Court of Auditors (*Corte dei conti*), which audits the accounts filed by

²⁴The population figure that selects the bracket is the resident population at the last official census (Art. 37, comma 4, of the Consolidated Law on Local Government), which is the same figure that governs the electoral-rule discontinuity we exploit. The law entered into force on 24 July 2012, after the May 2012 round of municipal elections, so the first electoral round subject to the limits is 2013. Appendix E describes the law in detail.

party lists; the electoral-spending statements published by municipalities in their *albo pretorio*; and the local press, which is the only source of information on *mayoral candidates*, because they file their accounts with the *Collegio regionale di garanzia elettorale* at the Court of Appeal, whose records are not published.²⁵ Appendix E describes the collection and validation of the data. This dataset is particularly suitable for the task: it covers both mayoral candidates and lists, and it covers the pre-reform period, when no limit existed.

Figure 6 presents the evidence for mayoral candidates and Figure E1 for party lists, in both cases for municipalities between 15,000 and 100,000 inhabitants — the first bracket of the law, which contains our estimation bandwidth. Panels (a) and (b) plot, for each municipality, the average and the maximum expenditure observed against the statutory ceiling, before and after the reform. Panels (c) and (d) rescale the same observations as a percentage of the ceiling, so that municipalities of different size are comparable, with the limit at 100%. Since 2013, spending is far below the cap: the median mayoral candidate spends 10.5% of what the law allows (203 candidates in 60 municipalities), the median list 4.1% (1,958 lists in 145 municipalities), and in the 15,000–30,000 band that identifies our design the medians are 5.2% and 8.8% respectively, with *no* mayoral candidate and *no* list above the limit. Panels (e) and (f) summarise the same information as municipality-level means: since 2013 the average mayoral candidate spends 21% of the ceiling and even the biggest spender in the average municipality reaches only 35% of it.

Because no limit existed before 2013, panels (a), (c), (e) and (f) measure pre-reform spending against the *counterfactual* ceiling: the one Article 13 would have imposed on that election, given its actual electoral roll. Spending was then closer to the cap (a municipality-level mean of 55% for mayoral candidates, against 21% since 2013), but still very far away from it. It should also be stressed that the pre-2013 evidence rests on twelve municipalities and comes disproportionately from elections that were newsworthy precisely because of their spending,²⁶ and it is measured against a ceiling that was never

²⁵Of 1,821 observations extracted from the Court of Auditors' reports, 1,820 are lists and exactly one is a mayoral candidate. Several reports state explicitly that the verification of the reports filed by individual candidates is a matter for the *Collegio regionale di garanzia elettorale*. This is why the mayoral data are press-based — in both the pre- and post-reform periods, which is what makes the two comparable.

²⁶The highest pre-2013 mayoral observation in this population bracket illustrates the point. In Lucca (87,200 inhabitants) the two leading mayoral candidates of 2007 declared €192,262 and €156,835 — close to twice the ceiling that the 2013 law would later have imposed on that election. Those accounts entered the public record only in October 2010, three years after the election, when the public prosecutor compelled their publication in the course of an inquiry into the *sources* of the winning candidate's campaign funding; the prosecution ended in his definitive acquittal by the Court of Cassation in 2016. No spending limit existed in 2007, so the amounts themselves were not unlawful, and we draw no inference about conduct from the episode. It is instructive, rather, for what the pre-reform data can and cannot show: the campaigns whose accounts survive in the press are disproportionately those that were contested, litigated or otherwise newsworthy, which is why we read the pre-2013 figures as an *upper* bound on how close spending came to the counterfactual cap. Sources: *Il Tirreno*, 14 and 23 October 2010 (publication of the 2007 accounts at the *albo pretorio*); *La Gazzetta di Lucca*, November 2016

in force. As we show in Table E3, more than 90% of the observations were below the not yet in force threshold already before 2013.

What, then, explains the fall in campaign spending between the two periods? The most plausible explanation is the abolition of public party financing, which took place nationally over exactly the same years. Law 96/2012 — the very law that introduced the spending limits — also cut public financing of parties to €91 million a year, roughly half of what had been allocated for 2012, with immediate effect on the sums then being disbursed.²⁷ Eighteen months later, Decree-Law No. 149 of 28 December 2013 (converted by Law No. 13 of 21 February 2014) abolished direct public financing of political parties outright, phasing it out over four years and replacing it with voluntary contributions: the allocation of two per mille of personal income tax and tax-deductible donations.²⁸ Party money therefore dried up across the entire country, in municipalities of every size and irrespective of the 15,000-inhabitant threshold.

Finally, in the appendix section D.1, we implement other additional robustness checks, which confirm the stability of our baseline results. In Table D1, we show that the estimates remain virtually unchanged when including region and election-year fixed effects. Table D2 further demonstrates that excluding municipalities belonging to inter-municipal unions (*unioni di comuni*) with total populations above 15,000 inhabitants does not affect the findings. Tables D3 and D4 confirm that the results are robust to alternative control functions (quadratic and cubic polynomials). Finally, Figure D1 illustrates that the estimated coefficients are stable across a range of bandwidth choices, consistent with the typical bias–variance trade-off in regression discontinuity designs.

4.3.4 Performance of mayors

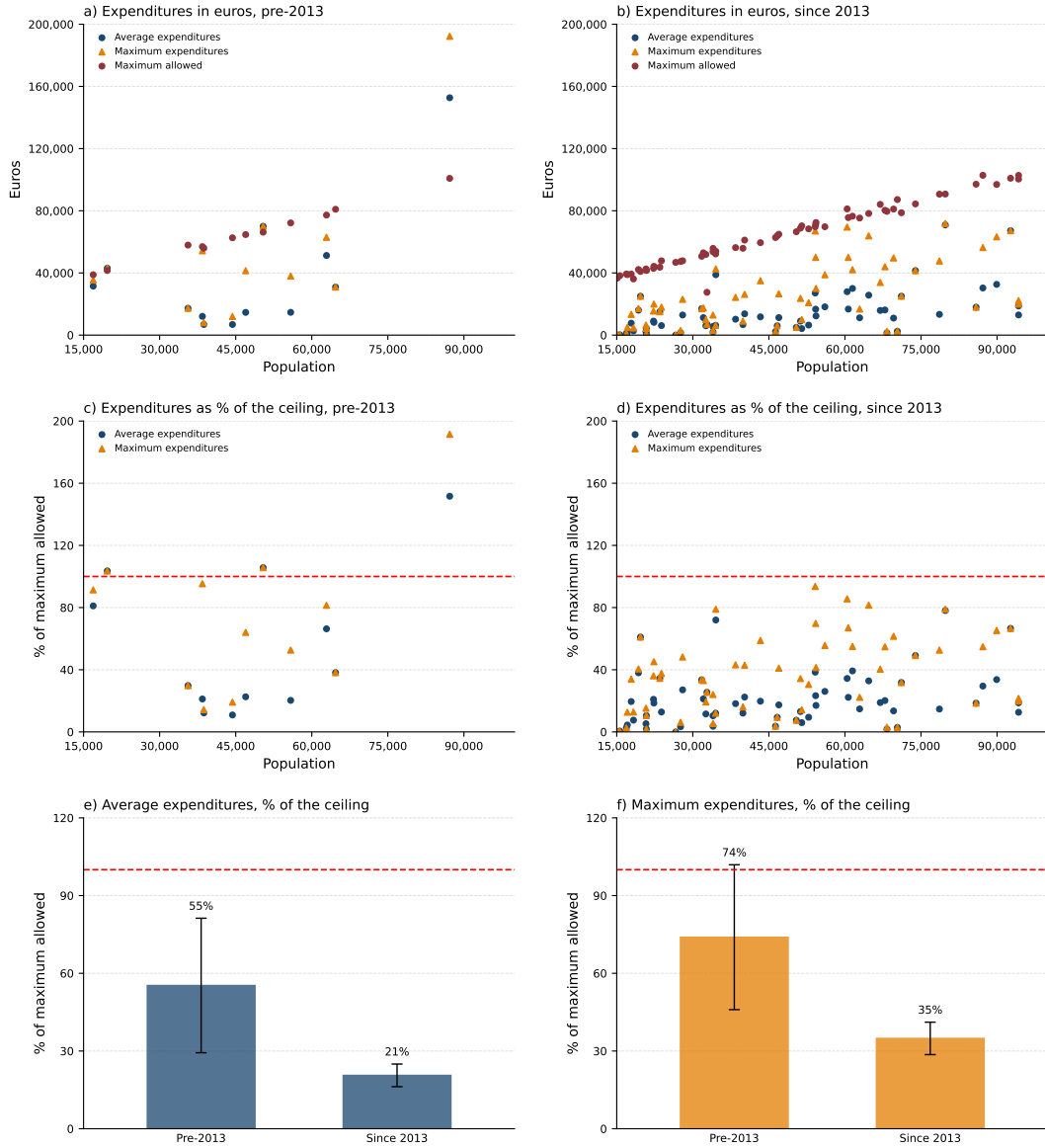
Exploiting the fact that the Severino Law also applies to local politicians already in office in 2013, we can assess the effect of the anti–revolving door policy on the in-office performance of mayors elected before 2013—that is, before any selection effects could take place. According to the model’s predictions, low human-capital politicians are more likely to adopt popular but not necessarily optimal policies in order to maximize their chances

(acquittal).

²⁷Law 96/2012, Art. 1, comma 1: «*I contributi pubblici per le spese sostenute dai partiti e dai movimenti politici sono ridotti a euro 91.000.000 annui*», of which 70% (€63.7 million) is paid as reimbursement of electoral expenses and a contribution to political activity, and the remaining 30% (€27.3 million) as co-financing matched to the parties’ own fundraising (Art. 2). The comparison figure is the €182,349,705 allocated for 2012: Camera dei deputati, *Temì dell’attività parlamentare* (leg. 16), <https://leg16.camera.it/561?appro=903>.

²⁸D.L. 149/2013, Art. 1, comma 1: reimbursements of electoral expenses and public contributions to political activity and co-financing «*sono aboliti ai sensi di quanto disposto dall’articolo 14*». Art. 14 (*Norme transitorie e abrogazioni*) sets the phase-out: the financing is paid in full in the financial year current at entry into force (2013), then reduced by 25%, 50% and 75% in the three following years (2014–2016), and «*cessa a partire dal quarto esercizio finanziario successivo*» — that is, from 2017. Arts. 1 and 2 of Law 96/2012 are today marked in the consolidated text as repealed by this decree.

Figure 6: Campaign expenditures and the legal limit: mayoral candidates

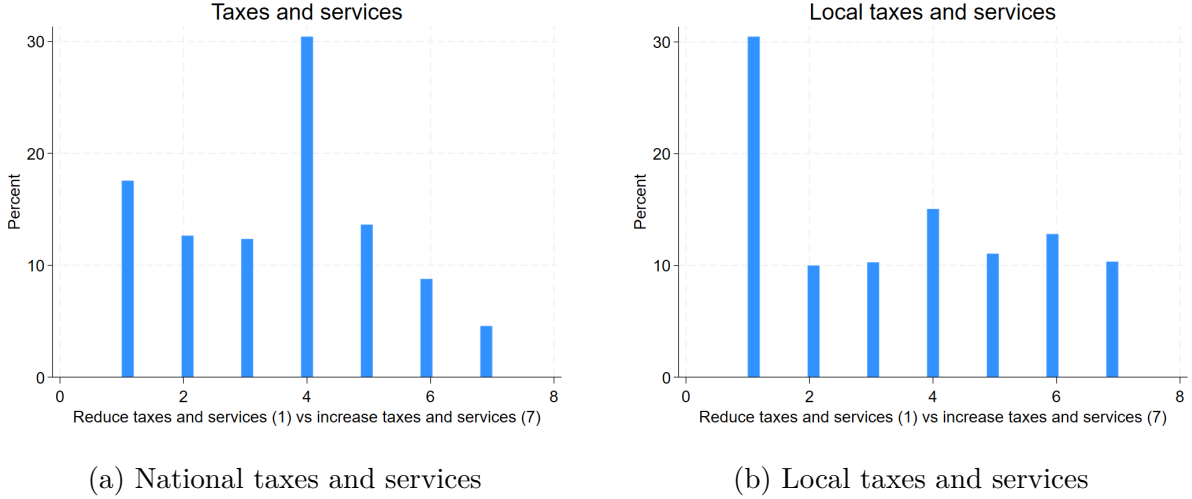


Notes. Mayoral candidates in municipalities between 15,000 and 100,000 inhabitants (the first bracket of Art. 13, Law 96/2012), 15 ordinary-statute regions. One dot is one municipality: within each municipality and period we take the average and the maximum expenditure across all mayoral candidates and all elections. Panels (a) and (b): expenditures in euros, before 2013 and since 2013. Navy dots: average expenditure. Orange triangles: maximum expenditure. Maroon dots: the maximum expenditure allowed by law ($\text{€}25,000 + \text{€}1$ per registered voter). Panels (c) and (d): the same expenditures as a percentage of the maximum allowed; the dashed line at 100% is the legal limit. Panels (e) and (f): mean across municipalities of the average and of the maximum expenditure, respectively, expressed as a percentage of the maximum allowed; spikes are 95% confidence intervals. No spending limit existed before 2013: in panels (a), (c), (e) and (f) the pre-2013 benchmark is the *counterfactual* ceiling that Art. 13 would have imposed on that election, given its actual electoral roll. The pre-2013 panels rest on 12 municipalities (36 candidates) and the post-2013 panels on 60 municipalities (203 candidates).

of re-election. To test this mechanism, we focus on the main local tax under municipal control: the municipal surcharge on the national income tax (Addizionale IRPEF). This tax rate is set at the municipal level, giving mayors substantial discretion to adjust local

tax policy.²⁹ Survey evidence from the 2013 Italian National Election Studies (ITANES, 2013), displayed in Figure 7, indicates that Italian voters dislike taxes and are generally willing to accept reductions in public services—both national and local—in exchange for lower taxation. Mayors who are more concerned about losing office may therefore be inclined to reduce local taxes to gain voter support and improve their re-election prospects.³⁰

Figure 7: Survey evidence on taxes and services



Notes. ITANES 2013 questions on national and local taxes and services (1 = lower both, 7 = increase both).

For this analysis, we use municipality-by-year data. To isolate the in-office effect of the anti-revolving door law from potential selection effects, we restrict the sample to mayors who were already in office at the time of the policy’s introduction in 2013 and exclude those elected thereafter, taking advantage of the staggered timing of municipal elections across municipalities. This restriction yields an unbalanced panel covering the years 2009 to 2016. By focusing on incumbents whose terms in office spanned the reform period, we ensure that the analysis captures only the behavior of mayors directly affected by the policy, thus isolating the pure performance effect from any changes in political selection. Using per capita revenues and the average tax rate of the municipal surcharge on personal income tax as outcome variables, we estimate a difference-in-discontinuity model analogous to Equation (2).

Results are presented in Table 6. The interaction term $Post \times (> 15,000)$ captures the differential effect of the policy in municipalities above the 15,000-inhabitant thresh-

²⁹Please see Giommoni (2019) for more information on the municipal surcharge on the national income tax (Addizionale IRPEF).

³⁰Figure 7 refers to a survey question about the municipal property tax (IMU, *Imposta Municipale Unica*). However, we base our empirical analysis on the municipal surcharge on personal income tax (Addizionale IRPEF), since the IMU was subject to several national reforms during the period under study, resulting in highly unstable revenues. The Addizionale IRPEF, by contrast, remained relatively stable and constitutes one of the main and most salient sources of municipal taxation together with the IMU. Although the survey specifically concerns the IMU, it still provides a useful indication that voters, on average, dislike local taxation.

old after the reform, and thus identifies the causal impact of the anti-revolving door policy on local tax policy. In column (1), the estimates indicate that the policy leads to a statistically significant reduction in per capita revenues from the municipal income tax, consistent with the idea that mayors may lower taxes to improve their re-election prospects. When the analysis is disaggregated by education level, however, the results reveal that this effect is entirely driven by non-graduate mayors (column 2), with no significant response among graduate mayors (column 3). This pattern is consistent with the theoretical framework and with the pandering literature (Maskin and Tirole, 2004; Besley, 2006; Merzoni and Trombetta, 2022): the decrease in the value of politically connected outside options has a stronger impact on low-human capital politicians, leading to a more pronounced behavioral adjustment. Panel B of Table 6 reports analogous results for the local income tax rate.

Table 6: The effect of anti-revolving door policy on the performance of mayors
Municipal income tax

	(1)	(2)	(3)
Dep. Var.	Income tax	Income tax	Income tax
	All sample	Non-graduate mayors	Graduate mayors
Control Function	Linear	Linear	Linear
Bandwidth	CCT	CCT	CCT
Controls	No	No	No
Panel A: per capita revenues			
(> 15000)	-12.657 (10.189)	-2.456 (14.669)	-18.815 (13.095)
Post	32.290*** (11.573)	50.646*** (17.130)	20.823 (13.043)
Post*(> 15000)	-27.723* (14.531)	-47.072** (21.416)	-13.623 (19.199)
Observations	629	326	368
Bandwidth	1076	1297	1079
Mean outcome	64.468	67.863	64.241
Panel B: average tax rate			
(> 15000)	-0.095 (0.088)	-0.081 (0.123)	-0.068 (0.078)
Post	0.079 (0.088)	0.254** (0.120)	0.061 (0.088)
Post*(> 15000)	-0.094 (0.113)	-0.176 (0.157)	0.021 (0.138)
Observations	456	257	495
Bandwidth	782	1021	1418
Mean outcome	0.534	0.507	0.506

Notes. Diff-in-disc estimates of the impact of anti-revolving door on the performance of mayors. Initial sample: municipalities between 10,000 and 30,000 inhabitants. Years between 2009 and 2016. Variables in the Table: 1) (> 15000) = 1 for municipalities with more than 15,000 inhabitants; 2) (Post) = 1 for years starting from 2013. The outcome variable is the per capita revenue from the municipal surcharge on personal income tax (Addizionale IRPEF) in Panel A, and the average tax rate of the same surcharge in Panel B. Samples: 1) all sample in column 1; 2) only non-graduate mayors in column 2; c) only graduate mayors in column 3. Robust standard errors clustered at the municipality level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Table 7 explores the mechanism underlying the change in policymaking among low-

educated mayors. Specifically, we divide the sample between non-graduate mayors who were term-limited and those who were not, and estimate the same difference-in-discontinuity specification using the outcome variables from Table 6. According to the theoretical model, the politicians most likely to increase pandering behavior after the introduction of the anti-revolving door policy are those with low education who are not term-limited. The evidence in Table 7 supports this prediction. The overall effect observed for non-graduate mayors (column 1) is clearly driven by those eligible for re-election after the policy change: the interaction term in column (2) is large and statistically significant. By contrast, the interaction coefficient in column (3), which focuses on non-graduate mayors who are term-limited, is smaller and not statistically different from zero. We interpret this as evidence that the observed effects operate through the mechanism described in the theoretical model.³¹

Finally, having provided evidence consistent with the main prediction of the theoretical model, we examine two natural follow-up questions in Appendix F. The first is how the tax cut is absorbed by the municipal budget. As shown in Table F1, the policy does not increase the probability that a municipality runs a deficit, nor its recourse to new borrowing, in the full sample or in any subsample: the tax cut is not financed through fiscal irresponsibility, at least in a detectable way.³² The second question is whether pandering behavior is also associated with worse outcomes in the management of the municipal administration. To address it, we use outcome variables that capture the quality of the municipal bureaucracy: the number of municipal employees per 1,000 inhabitants and their average years of education. The results, reported in Table F2, indicate that the policy is indeed associated with a deterioration in the management of the municipal bureaucracy: the municipal workforce shrinks above the threshold irrespective of the education of the mayor, while the decline in the average education of municipal employees emerges only for non-graduate mayors who are not term-limited.

5 Conclusion

Our paper studies how anti-revolving door policies affect political selection and in-office behaviour. Guided by a theoretical model, we show that the introduction of a “cooling off” period between political position and important roles in SOEs or in the bureaucracy increases the human capital level of those running for office. On the other hand, it may also increase the incentives to choose policies that help re-election, even

³¹The dependent variables in Tables 6–7 are winsorized at the 1st and 99th percentiles to account for outliers. In Tables D5–D6, we repeat the analysis using the non-winsorized variables and obtain virtually identical results.

³²It should be noted that, even in the simplified realm of the model, pandering is not always “bad” behaviour. It is worse than acting on the whole available information, but it implies choosing the correct policy with positive and non-negligible probability.

Table 7: Effect of the anti-revolving door policy on municipal income tax
Non-Graduate Mayors

	(1)	(2)	(3)
Dep. Var.	Income tax Non-graduate All	Income tax Non-graduate No term limit	Income tax Non-graduate Term limit
Control Function	Linear	Linear	Linear
Bandwidth	CCT	CCT	CCT
Controls	No	No	No
Panel A: per capita revenues			
(> 15000)	-2.456 (14.669)	5.213 (16.917)	-4.740 (23.523)
Post	50.646*** (17.130)	65.488*** (16.372)	21.856 (21.573)
Post*(> 15000)	-47.072** (21.416)	-81.238*** (23.485)	-14.112 (25.612)
Observations	326	178	130
Bandwidth	1297	1139	1493
Mean outcome	67.863	64.884	68.236
Panel B: tax rates			
(> 15000)	-0.081 (0.123)	-0.046 (0.152)	0.007 (0.138)
Post	0.254** (0.120)	0.451*** (0.109)	-0.015 (0.107)
Post*(> 15000)	-0.176 (0.157)	-0.406** (0.166)	0.072 (0.166)
Observations	257	152	147
Bandwidth	1021	930	1778
Mean outcome	0.507	0.502	0.522

Notes. Diff-in-disc estimates of the impact of anti-revolving door on the performance of mayors. Initial sample: municipalities between 10,000 and 30,000 inhabitants. Years between 2009 and 2016. Variables in the Table: 1) (> 15000) = 1 for municipalities with more than 15,000 inhabitants; 2) (Post) = 1 for years starting from 2013. The outcome variable is the per capita revenue from the municipal surcharge on personal income tax (Addizionale IRPEF) in Panel A, and the average tax rate of the same surcharge in Panel B. Samples: 1) only non-graduate mayors in column 1; 2) only non-term limited non-graduate mayors in column 2; c) only term limited non-graduate mayors in column 3. Robust standard errors clustered at the municipality level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

when they may be suboptimal, or at least imply a worsening of less visible governance tools.³³

We believe these results are important and policy-relevant, as they help a comprehensive assessment of this type of anti-revolving door policies, going beyond the concerns about regulatory capture or patronage. Revolving doors between politics and the private sector, or between politics and state-owned firms or the bureaucracy, can be seen as ways to increase the value of a political career. Therefore, one could expect that reducing their availability would have roughly the same implications as reducing office wages. We show that the reality is more complicated. In fact, the effect of those particular outside options must be studied while keeping into account the asymmetries in their relevance for

³³In a different context, Deserranno et al. (2021) studies the effect of meritocratic promotions on public sector employees' performance. In our case, shutting down a not-meritocratic channel may actually worsen performance.

different types of prospective politicians, arising from the equilibria of the political game. First, in terms of policymaking, we show that a reduction in the availability of politically connected outside option is like an increase in office wages, as they both increase the payoff difference between winning and losing. Second, it may well be that restrictions in outside options disproportionately relevant for low human capital politicians actually raise the overall education of candidates. Therefore, our results also underline the importance of studying how institutional features of a political system affect the type of candidates willing to run. As far as we know, this is the first paper able to comprehensively analyse the impact of anti-revolving door policies on both entry into politics and policymaking.

Finally, this paper highlights the importance of the institutional context where anti-revolving door policies apply. According to the model, our empirical results are driven by the fact that PCOs are relatively more attractive for low human capital individuals than for high human capital individuals. As a consequence, reducing their availability hurts the former relatively more. The result would be the opposite if, instead, PCOs are more valuable for high human capital individuals, for example if they were private sector jobs where relatively less educated individuals are unlikely to be hired. Those are also potentially important “revolving doors”. The policy change we focus on does not allow us to study them as well, because it concerns only public sector jobs (or jobs controlled by the State), but there is evidence that shutting down the revolving doors toward private sector jobs for highly educated individuals obtain the opposite effect in terms of political selection (Fisman et al., 2025). As a consequence, the overall effect of anti-revolving door policies is likely to depend on the specific context of application.

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Appendix

A Proofs

Proof of Lemma 1. We drop the time subscript for convenience. This proof follows very closely the proof of Lemma 3 in the working paper version of Ashworth and Shotts (2010).

Suppose there exists an equilibrium where $r(x = \theta) = 1$ and $r(x \neq \theta) = 0$. Furthermore, suppose $s = B$. A low human capital incumbent gets the following expected payoff by choosing $x = A$ and $x = B$ respectively:

$$\mathbb{E}u_L^P(x = A, s = B) = u\lambda_B + (\rho\lambda_B + (1 - \rho)r_A)v(L) + (\rho(1 - \lambda_B) + (1 - \rho)(1 - r_A))O \quad (\text{A.1})$$

$$\mathbb{E}u_L^P(x = B, s = B) = u(1 - \lambda_B) + (\rho(1 - \lambda_B) + (1 - \rho)r_B)v(L) + (\rho\lambda_B + (1 - \rho)(1 - r_B))O \quad (\text{A.2})$$

where $v(L) = \phi_L u + E$ and $\lambda_B = Pr(\theta = A | s = B) = \frac{\pi(1 - \phi_L)}{\pi(1 - \phi_L) + (1 - \pi)\phi_L} < \frac{1}{2}$. The difference between (A.1) and (A.2) measures the net benefit of pandering for the low type, and it is equal to

$$\Delta \mathbb{E}u_L^P = -(1 - 2\lambda_B)(u + \rho(v(L) - O)) + (1 - \rho)(r_A - r_B)(v(L) - O) \quad (\text{A.3})$$

A high human capital incumbent gets the following expected payoff by choosing $x = A$ and $x = B$ respectively:

$$\mathbb{E}u_H^P(x = A, s = B) = (1 - \rho)r_A v(H) + (\rho + (1 - \rho)(1 - r_A))\max[O, w(\phi_H)] \quad (\text{A.4})$$

$$\mathbb{E}u_H^P(x = B, s = B) = u + (\rho + (1 - \rho)r_B)v(H) + (1 - \rho)(1 - r_B)\max[O, w(\phi_H)] \quad (\text{A.5})$$

where $v(H) = u + E$. The difference between (A.4) and (A.5) measures the net benefit of pandering for the high type, and it is equal to

$$\Delta \mathbb{E}u_H^P = -(u + \rho(v(H) - \max[O, w(\phi_H)]) + (1 - \rho)(r_A - r_B)(v(H) - \max[O, w(\phi_H)])) \quad (\text{A.6})$$

As in the working paper version of Ashworth and Shotts (2010), we show that the difference between (A.3) and (A.6) is always positive. Therefore, whenever the L type prefers to choose $x = B$ (i.e. whenever $\Delta \mathbb{E}u_L^P$ is negative), the H type must prefer it as well. To see this, note that

$$\begin{aligned}\Delta \mathbb{E}u_L^P - \Delta \mathbb{E}u_H^P &= 2\lambda_B(u + \rho(v(L) - O)) + \rho(v(H) - \max[O, w(\phi_H)] - v(L) + O) + \\ &\quad - (1 - \rho)(r_A - r_B)(v(H) - \max[O, w(\phi_H)] - v(L) + O) \\ &\geq 2\lambda_B(u + \rho(v(L) - O)) + \rho(v(H) - \max[O, w(\phi_H)] - v(L) + O) + \\ &\quad - (1 - \rho)(v(H) - \max[O, w(\phi_H)] - v(L) + O)\end{aligned}$$

where the second line follows from the fact that $v(H) - \max[O, w(\phi_H)] - v(L) + O = (1 - \phi_L)u - (\max[O, w(\phi_H)] - O)$ is positive by assumption and hence the negative part of the difference is maximized when $r_A = 1$ and $r_B = 0$. Furthermore, setting $\rho = 0$ we obtain

$$RHS(\rho = 0) = 2\lambda_B u - ((1 - \phi_L)u - (\max[O, w(\phi_H)] - O))$$

Since $\max[O, w(\phi_H)] - O$ is weakly positive, a sufficient condition for $RHS(\rho = 0) > 0$ is

$$\begin{aligned}2\lambda_B &> 1 - \phi_L \\ 2\pi &> \pi(1 - \phi_L) + (1 - \pi)\phi_L\end{aligned}$$

that is always verified because $\pi > 0.5$. To see this, note that at $\pi = 0.5$ we have $1 > \frac{1}{2}$. As π increases, the inequality is easier to be satisfied. Therefore, $RHS(\rho = 0) > 0$. Furthermore, we show that

$$\begin{aligned}\frac{\partial RHS(\rho)}{\partial \rho} &= 2\lambda_B(v(L) - O) + 2(v(H) - \max[O, w(\phi_H)] - v(L) + O) \\ &> 0\end{aligned}$$

therefore, $\Delta \mathbb{E}u_L^P - \Delta \mathbb{E}u_H^P > 0$. ■

Proof of Lemma 2. In every perfect accountability equilibrium, $Pr(\phi = 1|x = A) = \frac{\kappa\pi}{\kappa\pi + (1-\kappa)(\pi\phi_L + (1-\pi)(1-\phi_L))} > \kappa$ and $Pr(\phi = 1|x = B) = \frac{\kappa(1-\pi)}{\kappa(1-\pi) + (1-\kappa)((1-\pi)\phi_L + \pi(1-\phi_L))} < \kappa$. Therefore, $r_A = 1$ and $r_B = 0$. Finally, a perfect accountability equilibrium requires $\Delta \mathbb{E}u_L^P \leq 0$. Therefore,

$$\begin{aligned}&-(1 - 2\lambda_B)(u + \rho(v(L) - O)) + (1 - \rho)(v(L) - O) \leq 0 \\ &\frac{(v(L) - O) - (1 - 2\lambda_B)u}{2(1 - \lambda_B)(v(L) - O)} \leq \rho := \bar{\rho}\end{aligned}$$

Note that, because of Lemma 1, it is enough to focus on the low type incentives. Finally, note that if $\rho \geq \bar{\rho}$ we can always construct a perfect accountability equilibrium, and that in this equilibrium it is sequentially rational to choose $r(x_1 \neq \theta_1) = 0$ and $r(x_1 = \theta_1) = 1$ because $Pr(x_1 \neq \theta_1|H) = 0 < 1 - \phi_L = Pr(x_1 \neq \theta_1|L)$ and $Pr(x_1 = \theta_1|H) = 1 > \phi_L = Pr(x_1 = \theta_1|L)$. ■

Proof of Lemma 3. Suppose $\rho < \bar{\rho}$. In any equilibrium where the L type mixes after observing $s = B$, the H type strictly prefers $x = B$. Thus, the H type must choose $x = s$ for every signal. For such an equilibrium to exist, r_A and r_B must be such that $\Delta \mathbb{E}u_L^P = 0$. Two cases are possible: either V is indifferent after observing $x = A$ or after observing $x = B$. As we focus on equilibria that maximize the re-election chances of the incumbent, we choose the equilibrium where V is indifferent after $x = B$. Therefore, r_A must be 1. Define $\sigma := \Pr(x = A | s = B, \phi_L)$. In this equilibrium, it must be that $\hat{\kappa}(x = B) = \frac{(1-\pi)\kappa}{(1-\pi)\kappa + (1-\kappa)(\pi(1-\phi_L) + (1-\pi)\phi_L)(1-\sigma)} = \kappa$. Therefore, it must be that

$$\sigma = 1 - \frac{1 - \pi}{\pi(1 - \phi_L) + (1 - \pi)\phi_L}$$

Furthermore, the low type must be kept indifferent between the two actions after observing $s = B$. Hence, since $r_A = 1$, r_B must be such that

$$-(1 - 2\lambda_B)(u + \rho(v(L) - O)) + (1 - \rho)(1 - r_B)(v(L) - O) = 0$$

Hence,

$$r_B = 1 - (1 - 2\lambda_B) \frac{(v(L) - O)\rho + u}{(1 - \rho)(v(L) - O)}$$

Note that both the equilibrium σ and the equilibrium r_B are between 0 and 1 for the range of parameters we are considering. Finally, note that in this equilibrium it is sequentially rational to choose $r(x_1 \neq \theta_1) = 0$ and $r(x_1 = \theta_1) = 1$ because $\Pr(x_1 \neq \theta_1 | H) = 0 < \Pr(x_1 \neq \theta_1 | L)$ and $\Pr(x_1 = \theta_1 | H) = 1 > \Pr(x_1 = \theta_1 | L)$. Therefore the desired equilibrium exists. ■

Proof of Proposition 1. Recall that $\bar{\rho} = \frac{(v(L)-O)-(1-2\lambda_B)u}{2(1-\lambda_B)(v(L)-O)}$. To prove this proposition, we show that $\frac{\partial \bar{\rho}}{\partial O}$ is negative. To see this:

$$\begin{aligned} \frac{\partial \bar{\rho}}{\partial O} &= \frac{-2(1 - \lambda_B)(v(L) - O) + 2(1 - \lambda_B)((v(L) - O) - (1 - 2\lambda_B)u)}{(2(1 - \lambda_B)(v(L) - O))^2} \\ &= \frac{-2(1 - \lambda_B)(1 - 2\lambda_B)u}{(2(1 - \lambda_B)(v(L) - O))^2} \\ &< 0 \end{aligned}$$

■

Proof of Proposition 2. When choosing whether to enter politics or not, prospective candidates anticipate the type of equilibrium that will be in place. Importantly, this equilibrium does not depend on κ , but just on the other parameters of the model and in particular on the relationship between ρ and $\bar{\rho}$. In practice, when making the entry choice, prospective politicians anticipate that the voter assigns to the challenger the same (pre-policy choice) expected human capital. Therefore, the re-election chances are those outlined above.

Irrespective of the equilibrium in the political game, we can define the utility of a career in the private sector as $\mathbb{E}u^P(mkt|\phi) = 2w(\phi) \forall \phi \in \{\phi_H, \phi_L\}$. We now move to the

entry decision in the two equilibria we are considering.

First, consider the pandering equilibrium. We calculate the expected utility from a political office for both types.

$$\begin{aligned}
\mathbb{E}u^P(pol|\phi_L) &= E + (\pi\phi_L + \pi(1 - \phi_L)\sigma + (1 - \pi)\phi_L(1 - \sigma))u + \pi\phi_L v(L) + \\
&+ \pi(1 - \phi_L)[\sigma v(L) + (1 - \sigma)(\rho O + (1 - \rho)(r_B v(L) + (1 - r_B)O))] + \\
&+ (1 - \pi)\phi_L[\sigma(\rho O + (1 - \rho)v(L)) + (1 - \sigma)(\rho v(L) + (1 - \rho)(r_B v(L) + (1 - r_B)O))] + \\
&+ (1 - \pi)(1 - \phi_L)(\rho O + (1 - \rho)v(L)) = \\
&= 2v(L) - \frac{(\phi_L - \pi)(1 - \phi_L)(2\pi - 1)}{\pi(1 - \phi_L) + (1 - \pi)\phi_L}u - \rho(v(L) - O)(1 - \pi) - (1 - 2\lambda_B)(1 - \pi)u
\end{aligned} \tag{A.7}$$

where r_B , σ and λ_B are defined above.

$$\begin{aligned}
\mathbb{E}u^P(pol|\phi_H) &= E + u + \pi v(H) + \\
&+ (1 - \pi)[\rho v(H) + (1 - \rho)(r_B v(H) + (1 - r_B)max[w(\phi_H), O])]
\end{aligned}$$

Where $v(H) = E + u$. If $w(\phi_H) < O$, this simplifies to

$$\begin{aligned}
\mathbb{E}u^P(pol|\phi_H, w(\phi_H) < O) &= 2v(H) - (1 - \pi)(v(H) - O)(1 - 2\lambda_B)\rho + \\
&- \frac{(1 - \pi)(v(H) - O)(1 - 2\lambda_B)u}{v(L) - O}
\end{aligned} \tag{A.8}$$

If $w(\phi_H) > O$, this simplifies to

$$\begin{aligned}
\mathbb{E}u^P(pol|\phi_H, w(\phi_H) > O) &= 2v(H) - (1 - \pi)(v(H) - w(\phi_H))(1 - 2\lambda_B)\rho + \\
&- \frac{(1 - \pi)(v(H) - w(\phi_H))(1 - 2\lambda_B)u}{v(L) - O}
\end{aligned} \tag{A.9}$$

We now differentiate all the expected utilities with respect to O :

$$\begin{aligned}
\frac{\partial \mathbb{E}u^P(pol|\phi_L)}{\partial O} &= \rho(1 - \pi) \\
\frac{\partial \mathbb{E}u^P(pol|\phi_H, w(\phi_H) < O)}{\partial O} &= \rho(1 - \pi)(1 - 2\lambda_B) - \frac{(1 - \pi)(1 - 2\lambda_B)u(v(H) - v(L))}{(v(L) - O)^2} \\
&= (1 - \pi)(1 - 2\lambda_B) \left(\rho - \frac{u(v(H) - v(L))}{(v(L) - O)^2} \right)
\end{aligned}$$

Note that the sign is ambiguous, in this case.

$$\frac{\partial \mathbb{E}u^P(pol|\phi_H, w(\phi_H) > O)}{\partial O} = - \frac{(1 - \pi)(v(H) - w(\phi_H))(1 - 2\lambda_B)u}{(v(L) - O)^2}$$

It is immediate to see that, irrespective of the ranking between $w(\phi_H)$ and O , $\frac{\partial \mathbb{E}u^P(pol|\phi_L)}{\partial O}$ is positive and strictly bigger than $\frac{\partial \mathbb{E}u^P(pol|\phi_H)}{\partial O}$. Moreover, those derivatives show the two different effects that an increase in O has on the expected payoffs from politics. The direct effect is obvious, and always positive for all the types interested in the PCO, i.e. such that $w(\phi_P) < O$. However, there is also a second effect. In the pandering equilibrium, an increase in O increases the incentives to choose $x_1 = B$, for the low h.c. type receiving $s_1 = B$. As she must be kept indifferent in equilibrium, an increase in O must also imply

a reduction in r_B . In fact,

$$\frac{\partial r_B}{\partial O} = -(1 - 2\lambda_B) \frac{(1 - \rho)u}{((1 - \rho)(v(L) - O))^2} < 0$$

This decrease in r_B hurts high h.c. types, especially when they are not interested in O as an outside option. In fact, $\frac{\partial \mathbb{E}u^P(pol|\phi_H, w(\phi_H) > O)}{\partial O} < 0$.

To complete the proof, note that $\frac{\partial \kappa}{\partial O} < 0$ implies $\frac{\partial \mathbb{E}u^P(pol|\phi_L)}{\partial O} Pr(run|\phi_H) > \frac{\partial \mathbb{E}u^P(pol|\phi_H)}{\partial O} Pr(run|\phi_L)$. Clearly, whenever $w(\phi_H) > O$, the condition is satisfied. The same is true whenever $w(\phi_H) < O$ and $\rho < \frac{u(v(H) - v(L))}{(v(L) - O)^2}$, hence the derivative is negative. Suppose instead that $\frac{\partial \mathbb{E}u^P(pol|\phi_H)}{\partial O}$ is positive. In this case, we have that κ is decreasing in O when:

$$\begin{aligned} & \rho(1 - \pi) \left(\frac{1}{2} - \frac{\psi}{2} [2w(\phi_H) - \mathbb{E}u^P(pol|\phi_H)] \right) > \\ & \left(\rho(1 - \pi)(1 - 2\lambda_B) - \frac{(1 - \pi)(1 - 2\lambda_B)u(v(H) - v(L))}{(v(L) - O)^2} \right) \left(\frac{1}{2} - \frac{\psi}{2} [2w(\phi_L) - \mathbb{E}u^P(pol|\phi_L)] \right) \\ & \left(2\rho\lambda_B + \frac{(1 - 2\lambda_B)u(v(H) - v(L))}{(v(L) - O)^2} \right) \left(\frac{1}{2} - \frac{\psi}{2} [2w(\phi_L) - \mathbb{E}u^P(pol|\phi_L)] \right) > \\ & \rho \frac{\psi}{2} [2(w(\phi_H) - w(\phi_L)) - \mathbb{E}u^P(pol|\phi_H) + \mathbb{E}u^P(pol|\phi_L)] \end{aligned}$$

The sign of the RHS is ambiguous, while the LHS is positive. Therefore, either the RHS is negative, and so the condition is always satisfied, or the RHS is positive. Note that a sufficient condition for a negative RHS is $Pr(run|\phi_H) \geq Pr(run|\phi_L)$, or $\mathbb{E}u^P(pol|\phi_H) - \mathbb{E}u^P(pol|\phi_L) \geq 2(w(\phi_H) - w(\phi_L))$. Even if the RHS is positive, however, there exists a sufficiently small ψ such that the inequality is satisfied (note that for ψ going to 0 the LHS is strictly positive and bounded away from 0, while goes to 0).

Consider now the full accountability equilibrium, where all the players choose $x_1 = s_1$.

$$\begin{aligned} \mathbb{E}u^P(pol|\phi_L) &= E + \phi_L u + \pi \phi_L v(L) + \pi(1 - \phi_L)[\rho O + (1 - \rho)O] + \\ &+ (1 - \pi)\phi_L[\rho v(L) + (1 - \rho)O] + (1 - \pi)(1 - \phi_L)(\rho O + (1 - \rho)v(L)) \end{aligned} \quad (\text{A.10})$$

$$\mathbb{E}u^P(pol|\phi_H) = E + u + \pi v(H) + (1 - \pi)[\rho v(H) + (1 - \rho)\max[w(\phi_H), O]] \quad (\text{A.11})$$

We now differentiate all the expected utilities with respect to O :

$$\frac{\partial \mathbb{E}u^P(pol|\phi_L)}{\partial O} = \pi + \phi_L - 2\pi\phi_L - (1 - \pi)(2\phi_L - 1)\rho > 0$$

To see the last inequality, note that the derivative is positive even for the biggest possible ρ , i.e. $\rho = 1$.

$$\begin{aligned} \frac{\partial \mathbb{E}u^P(pol|\phi_H, w(\phi_H) < O)}{\partial O} &= (1 - \pi)(1 - \rho) \\ \frac{\partial \mathbb{E}u^P(pol|\phi_H, w(\phi_H) > O)}{\partial O} &= 0 \end{aligned}$$

In order to be able to use the same logic of the first part of the proof, we need to show

that $\frac{\partial \mathbb{E}u^P(pol|\phi_L)}{\partial O} > \frac{\partial \mathbb{E}u^P(pol|\phi_H, w(\phi_H) < O)}{\partial O} = (1 - \pi)(1 - \rho)$. To see this, note that:

$$\begin{aligned} \pi + \phi_L - 2\pi\phi_L - (1 - \pi)(2\phi_L - 1)\rho &> (1 - \pi)(1 - \rho) \\ \pi(1 - \phi_L) + (1 - \pi)\phi_L - (1 - \pi)(2\phi_L - 1)\rho - (1 - \pi) + \rho(1 - \pi) &> 0 \\ \pi(1 - \phi_L) - (1 - \pi)(1 - \phi_L) + (1 - \pi)\rho 2(1 - \phi_L) &> 0 \\ (1 - \phi_L)(2\pi - 1) + (1 - \pi)\rho 2(1 - \phi_L) &> 0 \end{aligned}$$

that is always verified. The same steps as in the previous part complete the proof. ■

Proof of Proposition 3.

We use the same logic as in the previous proof. First, consider the pandering equilibrium. We differentiate (A.7), (A.8) and (A.9) with respect to E :

$$\begin{aligned} \frac{\partial \mathbb{E}u^P(pol|\phi_L)}{\partial E} &= 2 - \rho(1 - \pi) > 0 \\ \frac{\partial \mathbb{E}u^P(pol|\phi_H, w(\phi_H) < O)}{\partial E} &= 2 - \rho(1 - \pi)(1 - 2\lambda_B) + \\ &+ \frac{(1 - \pi)(1 - 2\lambda_B)u(v(H) - v(L))}{(v(L) - O)^2} \\ \frac{\partial \mathbb{E}u^P(pol|\phi_H, w(\phi_H) > O)}{\partial E} &= 2 - \rho(1 - \pi)(1 - 2\lambda_B) + \\ &+ \frac{(1 - \pi)(1 - 2\lambda_B)u((v(H) - v(L)) - (w(\phi_H) - O))}{(v(L) - O)^2} \end{aligned}$$

To complete the proof, note that $\frac{\partial \kappa}{\partial E} > 0$ implies $\frac{\partial \mathbb{E}u^P(pol|\phi_L)}{\partial E} Pr(run|\phi_H) < \frac{\partial \mathbb{E}u^P(pol|\phi_H)}{\partial E} Pr(run|\phi_L)$. As it is clear that $\frac{\partial \mathbb{E}u^P(pol|\phi_H)}{\partial E} > \frac{\partial \mathbb{E}u^P(pol|\phi_L)}{\partial E}$, we can use the same logic as above to find a sufficiently small ψ .

Consider now the full accountability equilibrium. We differentiate (A.10) and (A.11) with respect to E :

$$\begin{aligned} \frac{\partial \mathbb{E}u^P(pol|\phi_L)}{\partial E} &= 1 + \pi\phi_L + (1 - \pi)\phi_L\rho + (1 - \pi)(1 - \phi_L)(1 - \rho) \\ \frac{\partial \mathbb{E}u^P(pol|\phi_H)}{\partial E} &= 1 + \pi + (1 - \pi)\rho \end{aligned}$$

In order to be able to use the same logic of the first part of the proof, we need to show that $\frac{\partial \mathbb{E}u^P(pol|\phi_L)}{\partial E} < \frac{\partial \mathbb{E}u^P(pol|\phi_H)}{\partial E}$. To see this, note that:

$$\begin{aligned} 1 + \pi + (1 - \pi)\rho - 1 - \pi\phi_L - (1 - \pi)\phi_L\rho - (1 - \pi)(1 - \phi_L)(1 - \rho) &= \\ \pi(1 - \phi_L) + (1 - \pi)\rho(2 - 2\phi_L) - (1 - \pi)(1 - \phi_L) &= \\ (1 - \phi_L)(2\pi - 1) + (1 - \pi)\rho 2(1 - \phi_L) &> 0 \end{aligned}$$

that is always verified. The same steps as in the previous part complete the proof. ■

Online Appendix

“Jumping Without Parachutes. Revolving Doors and Political Incentives”

Matteo Gamalerio and Federico Trombetta

B Empirics: additional results

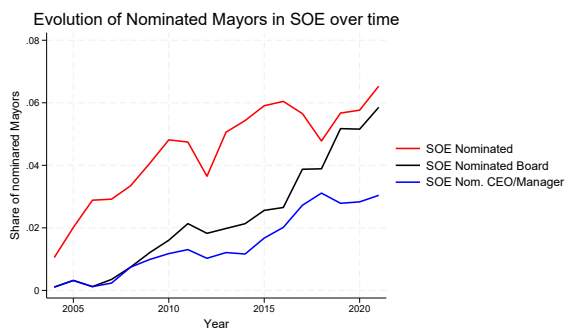
B.1 Descriptive statistics

Table B1: Descriptive statistics

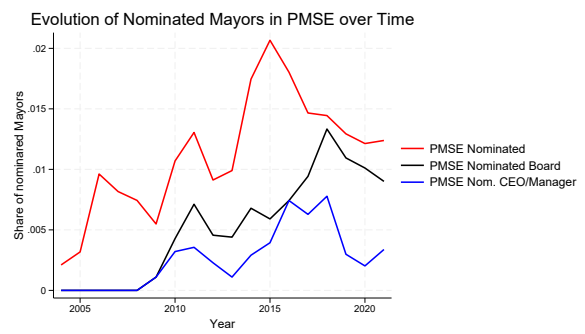
	Below 15,000		Above 15,000		p-value
	Mean	N	Mean	N	
Avg. years of educ. (candidates)	15.520	477	15.975	318	0.000
Female candidate	0.152	477	0.140	318	0.231
Candidate age	49.848	477	49.771	318	0.807
Years of educ. (mayor)	15.693	477	16.121	318	0.004
Female mayor	0.130	477	0.120	318	0.540
Mayor age	49.641	477	49.208	318	0.356
Number of candidates	3.547	477	4.857	318	0.000
Unemployment rate (2011)	0.106	473	0.116	315	0.047
College share (%)	0.085	457	0.096	304	0.000
Foreign-born pop. (2011)	0.072	473	0.067	315	0.078
Total income (per capita)	12.907	473	13.034	315	0.602
Non-profit orgs (per 1k)	0.005	473	0.005	315	0.054
Age 0–14 (%) (2011)	0.148	473	0.143	315	0.000
Age 65+ (%) (2011)	0.192	473	0.201	315	0.002
Latitude	43.621	477	43.295	318	0.031
Longitude	12.097	477	12.305	318	0.291

Notes. Descriptive statistics (municipality average over time) for municipalities with population between 10,000 and 30,000 inhabitants.

Figure B1: Mayors and important positions in SOEs and PMSEs



(a) Share of mayors with positions in SOE.



(b) Share of mayors with positions in PMSE.

B.2 Nomination: term and post-term years

Table B2: The effect of anti-revolving doors policy on mayors' appointment in State-participated companies ("cooling off" period only)

	(1)	(2)
Dep. Var.	=1 appointed in SOE	=1 appointed in PMSE
Control Function	Linear	Linear
Bandwidth	CCT	CCT
Controls	No	No
(> 15000)	0.022** (0.011)	0.000 (0.015)
Post	0.026* (0.016)	0.002 (0.016)
Post*(> 15000)	-0.039** (0.018)	-0.009 (0.018)
Observations	1056	1549
Bandwidth	1414	2098
Mean outcome	0.015	0.007

Notes. Diff-in-disc estimates of the impact of anti-revolving door on the probability that a Mayor is appointed to a leading position in a SOE (column 1) and in a PMSE (column 2). Initial sample: municipalities between 10,000 and 30,000 inhabitants. Electoral terms between 1993 and 2021. Variables in the Table: 1) (> 15000) = 1 for municipalities with more than 15,000 inhabitants; 2) (Post) = 1 for electoral terms starting from 2013. The outcome variable is a dummy equal to 1 if a mayor holds a leading position in a SOE in column 1, and it is a dummy equal to 1 if a mayor holds a leading position in a PMSE in column 2. Robust standard errors clustered at the municipality level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Table B3: The effect of anti-revolving doors policy on mayors' appointment in State-participated companies (term period only)

	(1)	(2)
Dep. Var.	=1 appointed in SOE	=1 appointed in PMSE
Control Function	Linear	Linear
Bandwidth	CCT	CCT
Controls	No	No
(> 15000)	-0.010 (0.016)	0.002 (0.002)
Post	0.035 (0.028)	0.000 (0.000)
Post*(> 15000)	-0.050* (0.029)	0.001 (0.004)
Observations	5070	5035
Bandwidth	1872	1849
Mean outcome	0.021	0.000

Notes. Diff-in-disc estimates of the impact of anti-revolving door on the probability that a Mayor is appointed to a leading position in a SOE (column 1) and in a PMSE (column 2). Initial sample: municipalities between 10,000 and 30,000 inhabitants. Electoral terms between 1993 and 2021. Variables in the Table: 1) (> 15000) = 1 for municipalities with more than 15,000 inhabitants; 2) (Post) = 1 for electoral terms starting from 2013. The outcome variable is a dummy equal to 1 if a mayor holds a leading position in a SOE in column 1, and it is a dummy equal to 1 if a mayor holds a leading position in a PMSE in column 2. Robust standard errors clustered at the municipality level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

B.3 Selection of politicians: other characteristics

The next set of tables (Tables B4 and B5) examines the effect of the anti-revolving door policy on politicians' characteristics other than education. We find no effect on age, but a positive and statistically significant effect on both the share of female candidates and the probability of observing a female mayor. This gender effect is likely to be a by-product of the overall increase in human capital among politicians. Two mechanisms may contribute to this result. First, leading positions in state-owned enterprises (SOEs) were likely to be disproportionately allocated to male politicians, meaning that the policy—by restricting access to these positions—affected men more strongly. Second, women tend to have, on average, higher levels of education than men, making them less negatively affected by the reform. Finally, Table B6 shows a negative coefficient on the number of candidates for office. Although not statistically significant, the coefficient is sizable and consistent with the model's prediction of a general discouragement effect induced by the policy.

Table B4: The effect of anti-revolving door policy on the gender of politicians

	(1)	(2)
Dep. Var.	Share of female mayoral candidates	Probability of female elected mayor
Control Function	Linear	Linear
Bandwidth	CCT	CCT
Controls	No	No
(> 15000)	-0.196** (0.086)	-0.272** (0.119)
Post	-0.075 (0.087)	-0.220* (0.127)
Post*(> 15000)	0.230** (0.113)	0.495*** (0.174)
Observations	475	487
Bandwidth	1144	1188
Mean outcome	0.175	0.165

Notes. Diff-in-disc estimates of the impact of anti-revolving door on the education of politicians. Initial sample: municipalities between 10,000 and 30,000 inhabitants. Electoral terms between 2003 and 2021. Variables in the Table: 1) (> 15000) = 1 for municipalities with more than 15,000 inhabitants; 2) (Post) = 1 for electoral terms starting from 2013. The outcome variable is the share of female mayoral candidates in column (1), and the probability that the elected mayor is a woman in column (2). Robust standard errors clustered at the municipality level are reported in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Table B5: The effect of anti-revolving door policy on the age of politicians

	(1)	(2)
Dep. Var.	Age mayoral candidates	Age elected mayor
Control Function	Linear	Linear
Bandwidth	CCT	CCT
Controls	No	No
(> 15000)	-0.885 (2.031)	0.640 (2.599)
Post	-0.509 (1.845)	1.018 (2.723)
Post*(> 15000)	1.812 (2.591)	-2.303 (3.826)
Observations	596	613
Bandwidth	1542	1566
Mean outcome	49.559	49.435

Notes. Diff-in-disc estimates of the impact of anti-revolving door on the education of politicians. Initial sample: municipalities between 10,000 and 30,000 inhabitants. Electoral terms between 2003 and 2021. Variables in the Table: 1) (> 15000) = 1 for municipalities with more than 15,000 inhabitants; 2) (Post) = 1 for electoral terms starting from 2013. The outcome variable is the average age of mayoral candidates in column 1, and the age of elected mayors in column 2. Robust standard errors clustered at the municipality level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Table B6: The effect of anti-revolving door policy on the number of candidates

(1)	
Dep. Var.	N of candidates
Control Function	Linear
Bandwidth	CCT
Controls	No
(> 15000)	1.078** (0.433)
Post	0.232 (0.337)
Post*(> 15000)	-0.727 (0.503)
Observations	569
Bandwidth	1636
Mean outcome	3.713

Notes. Diff-in-disc estimates of the impact of anti-revolving door on the education of politicians. Initial sample: municipalities between 10,000 and 30,000 inhabitants. Electoral terms between 2003 and 2021. Variables in the Table: 1) (> 15000) = 1 for municipalities with more than 15,000 inhabitants; 2) (Post) = 1 for electoral terms starting from 2013. The outcome variable is the number of mayoral candidates. Robust standard errors clustered at the municipality level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

B.4 Selection of politicians: Cross-sectional RDD coefficients over time

Table B7: Cross-sectional RDD coefficients over time

	(1)	(2)	(3)	(4)
Dep. variable: Average years education				
Control Function	Linear	Linear	Linear	Linear
Bandwidth	CCT	CCT	CCT	CCT
Controls	No	No	No	No
Elections	-2	-1	0	1
Panel A: mayoral candidates				
(> 15000)	-0.842 (0.752)	-1.460 (0.895)	0.094 (0.649)	2.040** (0.790)
Observations	131	134	147	120
Bandwidth	1334	1334	1334	1334
Panel B: mayors				
(> 15000)	-0.761 (0.962)	-1.759* (0.946)	1.056 (0.795)	0.965 (0.803)
Observations	177	181	217	176
Bandwidth	1933	1933	1933	1933

Notes. RDD coefficients capturing the effect of being above the 15,000-inhabitants threshold vs. being below it. Initial sample: municipalities between 10,000 and 30,000 inhabitants. Electoral terms between 2003 and 2021. Variable (> 15000) = 1 for municipalities with more than 15,000 inhabitants. The outcome variable is the average years of education of mayoral candidates in panel A, and the average years of education of elected mayors in panel B. Robust standard errors clustered at the municipality level are in parentheses. We run the cross-section RDD regressions using the optimal CCT bandwidths reported in Table 3. Estimated coefficients and the timing of elections are the same as in Figure 4. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

C Model: additional results and extensions

C.1 Future motivation

In the main body of the paper, we focus on the case where, if $w(\phi_H) > O$, we have that $u - w(\phi_H) \geq \phi_L u - O$. Its only role was to ease the proof of Lemma 1, and it plays no further role in defining the equilibrium strategies. In this section, we show that, as long as equilibria are such that action A is rewarded electorally, absent additional information (i.e., $r(x_1 = A) \geq r(x_1 = B)$), then a version of Lemma 1 can be proven even when $u - w(\phi_H) < \phi_L u - O$. As $r(x_1 = A) \geq r(x_1 = B)$ in all the equilibria we are considering, our results are unchanged also in the case considered in this section.

Lemma C1 *Suppose low human capital politicians are more motivated than high human capital politicians in being re-elected, i.e. $u - w(\phi_H) < \phi_L u - O$. In every where $r(x_1 = A) \geq r(x_1 = B)$, $r(\theta_1 = x_1) = 1$ and $r(\theta_1 \neq x_1) = 0$, for any parameters at which a low human capital incumbent wants to follow a B signal, a high human capital incumbent also wants to follow a B signal.*

Proof of Lemma C1. First, suppose than in equilibrium $r(x_1 = A) \geq r(x_1 = B)$. To ease the notation, define $r(x_1 = A) := r_A$ and $r(x_1 = B) := r_B$. Using (A.3), note that if $r_A \geq r_B$ then it is strictly decreasing in ρ . Furthermore, the level of ρ such that $\Delta \mathbb{E} u_L^P = 0$, i.e. the level of ρ above which the low h.c. type prefers to follow the signal when $s_1 = B$, is

$$\rho_L := \frac{(v(L) - O)(r_A - r_B) - (1 - 2\lambda_B)u}{(v(L) - O)(r_A - r_B + 1 - 2\lambda_B)} \quad (\text{C.1})$$

Using (A.6), note that if $r_A \geq r_B$ then it is strictly decreasing in ρ . Furthermore, the level of ρ such that $\Delta \mathbb{E} u_H^P = 0$, i.e. the level of ρ above which the high h.c. type prefers to follow the signal when $s_1 = B$, is

$$\rho_H := \frac{(v(H) - \max[w(\phi_H), O])(r_A - r_B) - u}{(v(H) - \max[w(\phi_H), O])(r_A - r_B + 1)} \quad (\text{C.2})$$

To complete the proof, we show that if $w(\phi_H) > O$ and $u - w(\phi_H) < \phi_L u - O$, then $\rho_H < \rho_L$, hence whenever parameters are such that the low h.c. type prefers to follow the signal, the high h.c. type does the same. Using (C.2) and (C.1), we have that

$$\begin{aligned} \rho_H &< \rho_L \\ \frac{(v(H) - w(\phi_H))(r_A - r_B) - u}{(v(H) - w(\phi_H))(r_A - r_B + 1)} &< \frac{(v(L) - O)(r_A - r_B) - (1 - 2\lambda_B)u}{(v(L) - O)(r_A - r_B + 1 - 2\lambda_B)} \end{aligned}$$

To ease the exposition, define $\Delta r := r_A - r_B$, $T_H := v(H) - w(\phi_H)$ and $T_L := v(L) - O$. Recall that we are considering parameters where $T_L > T_H$. Hence, we have that

$$\begin{aligned} \frac{T_H \Delta r - u}{T_H(\Delta r + 1)} &< \frac{T_L \Delta r - (1 - 2\lambda_B)u}{T_L(\Delta r + 1 - 2\lambda_B)} \\ T_H T_L \Delta r (\Delta r + 1 - 2\lambda_B) - u T_L (\Delta r + 1 - 2\lambda_B) &< T_H T_L \Delta r (\Delta r + 1) - u T_H (\Delta r + 1) + \\ &\quad + 2\lambda_B u T_H (\Delta r + 1) \\ -2\lambda_B T_H T_L \Delta r - u(\Delta r + 1)(T_L - T_H) + 2\lambda_B u T_L &< 2\lambda_B u T_H (\Delta r + 1) \\ 2\lambda_B u (T_L - T_H) &< 2\lambda_B u T_H \Delta r + 2\lambda_B T_H T_L \Delta r + \\ &\quad + u(T_L - T_H)(\Delta r + 1) \end{aligned}$$

Note, however, that both $2\lambda_B u T_H \Delta r$ and $2\lambda_B T_H T_L \Delta r$ are weakly positive. Moreover, $u(T_L - T_H)(\Delta r + 1 - 2\lambda_B)$ is strictly positive, because $\lambda_B < \frac{1}{2}$. Hence, $\rho_H < \rho_L$. ■

C.2 Extension: Positive selection on the PCO

In this extension, we show that a sufficiently strong positive selection on the PCO may imply the opposite effect in the comparative statics between O and the average human capital of candidates.

More formally, suppose that the PCO can be obtained by former politicians with high human capital with probability z_H , and by politicians with low human capital with probability z_L , with $z_H > z_L$. If they do not obtain the PCO, they go back to the private market earning $w(\phi)$. The assumption that $z_H > z_L$ captures the idea that, conditional on asking for a PCO, high human capital politicians are more likely to obtain it. We do not think this is likely to be the case in the context of our empirical application (local politicians and SOEs in Italy), but it may well be the case in other contexts, like state-level politicians and lobbying firms in the United States (Fisman et al., 2025).

Given our assumption on the probability of getting O , we can now define $O_H := z_H O + (1 - z_H)w(\phi_H)$ and $O_L := z_L O + (1 - z_L)w(\phi_L)$. Furthermore, we focus on full accountability equilibria where $O > w(\phi_H)$ (otherwise, a decrease in O would only discourage low human capital politicians, and therefore it cannot improve the average human capital of candidates). The expected utility from a political career is now given by

$$\begin{aligned} \mathbb{E}u^P(pol|\phi_L) &= E + \phi_L u + \pi \phi_L v(L) + \pi(1 - \phi_L)[\rho O_L + (1 - \rho)O_L] + \\ &\quad + (1 - \pi)\phi_L[\rho v(L) + (1 - \rho)O_L] + (1 - \pi)(1 - \phi_L)(\rho O_L + (1 - \rho)v(L)) \end{aligned} \quad (C.3)$$

$$\mathbb{E}u^P(pol|\phi_H) = E + u + \pi v(H) + (1 - \pi)[\rho v(H) + (1 - \rho)O_H] \quad (C.4)$$

We now differentiate both the expected utilities (C.3) and (C.4) with respect to O :

$$\frac{\partial \mathbb{E}u^P(pol|\phi_L)}{\partial O} = z_L [\pi + \phi_L - 2\pi\phi_L - (1 - \pi)(2\phi_L - 1)\rho] > 0$$

$$\frac{\partial \mathbb{E}u^P(pol|\phi_H)}{\partial O} = z_H(1 - \pi)(1 - \rho)$$

In order to be able to use the same logic of the benchmark model, we need to show that $\frac{\partial \mathbb{E}u^P(pol|\phi_L)}{\partial O} < \frac{\partial \mathbb{E}u^P(pol|\phi_H)}{\partial O}$. Re-arranging, we find that the inequality above requires

$$\frac{z_H}{z_L} > \frac{\pi + \phi_L - 2\pi\phi_L - (1 - \pi)(2\phi_L - 1)\rho}{(1 - \pi)(1 - \rho)} \quad (\text{C.5})$$

When condition (C.5) is satisfied, we can then find conditions on ψ such that the direct effect of O prevails on the level effect in the comparative statics on the average human capital of candidates, and therefore an increase in O increases the average human capital of candidates.

Note that condition (C.5) is more likely to be satisfied the stronger the positive selection is, i.e. the bigger is z_H compared to z_L . In those contexts, where PCOs are sufficiently valuable (i.e. $O > w(\phi_H)$) and there is a sufficiently strong positive selection, a reduction in O can actually lead to a reduction in the average human capital of candidates. We believe those conditions are likely to be met in the case considered by Fisman et al. (2025), and much less likely to be met in our application.

D Empirics: additional robustness checks

D.1 Selection of politicians

Table D1: The effect of anti-revolving door policy on the education of politicians
Control for Region and Year of election FE

	(1)	(2)
Dep. Var.	Average years education mayoral candidates	Average years education elected mayor
Control Function	Linear	Linear
Bandwidth	CCT	CCT
Controls	Region FE El. year FE	Region FE El. year FE
(> 15000)	-1.205 (0.730)	-1.481* (0.859)
Post*(> 15000)	2.022** (0.887)	2.249** (1.084)
Observations	532	751
Bandwidth	1334	1933
Mean outcome	15.646	15.819

Notes. Diff-in-disc estimates of the impact of anti-revolving door on the education of politicians. Initial sample: municipalities between 10,000 and 30,000 inhabitants. Electoral terms between 2003 and 2021. Variables in the Table: 1) (> 15000) = 1 for municipalities with more than 15,000 inhabitants; 2) (Post) = 1 for electoral terms starting from 2013. The outcome variable is the average years of education of mayoral candidates in column 1, and the average years of education of elected mayors in column 2. Region and Year of Elections FE in both columns. Robust standard errors clustered at the municipality level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Table D2: The effect of anti-revolving door policy on the education of politicians
Exclude municipalities in Unions of municipalities with more than 15,000 inhabitants

	(1)	(2)
Dep. Var.	Average years education mayoral candidates	Average years education elected mayor
Control Function	Linear	Linear
Bandwidth	CCT	CCT
Controls	No	No
(> 15000)	-0.813 (0.608)	-1.625 (1.097)
Post	-0.723 (0.479)	-1.076 (0.954)
Post*(> 15000)	1.925** (0.792)	3.731*** (1.420)
Observations	610	468
Bandwidth	1882	1404
Mean outcome	15.750	15.771

Notes. Diff-in-disc estimates of the impact of anti-revolving door on the education of politicians. Initial sample: municipalities between 10,000 and 30,000 inhabitants. Electoral terms between 2003 and 2022. Variables in the Table: 1) (> 15000) = 1 for municipalities with more than 15,000 inhabitants; 2) (Post) = 1 for electoral terms starting from 2013. The outcome variable is the average years of education of mayoral candidates in column 1, and the average years of education of elected mayors in column 2. Robust standard errors clustered at the municipality level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Table D3: The effect of anti-revolving door policy on the education of candidates
Different polynomials

Dep. Var.: Average years education, mayoral candidates			
	(1)	(2)	(3)
Control Function	Linear	Quadratic	Cubic
Bandwidth	CCT	CCT	CCT
Controls	No	No	No
Post	-0.975 (0.595)	-1.824** (0.716)	-1.988** (0.934)
(> 15,000)	-1.141 (0.711)	-1.953** (0.917)	-2.244* (1.272)
Post*(> 15,000)	2.126** (0.901)	2.937*** (1.130)	2.647* (1.466)
Observations	532	729	834
Bandwidth	1334	1892	2096
Mean outcome	15.646	15.731	15.684

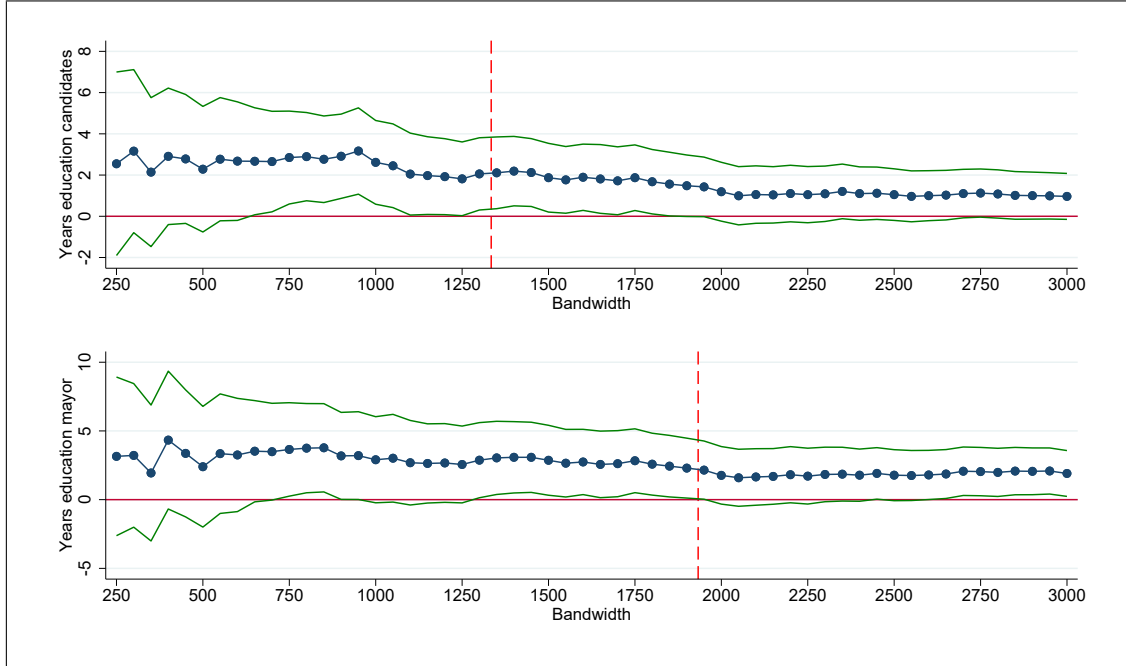
Notes. Diff-in-disc estimates of the impact of anti-revolving door on the education of politicians. Initial sample: municipalities between 10,000 and 30,000 inhabitants. Electoral terms between 2003 and 2021. Variables in the Table: 1) (> 15000) = 1 for municipalities with more than 15,000 inhabitants; 2) (Post) = 1 for electoral terms starting from 2013. The outcome variable is the average years of education of mayoral candidates in column 1, and the average years of education of elected mayors in column 2. Robust standard errors clustered at the municipality level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Table D4: The effect of anti-revolving door policy on the education of mayors
Different polynomials

Dep. Var.: Average years education of elected mayors			
	(1)	(2)	(3)
Control Function	Linear	Quadratic	Cubic
Bandwidth	CCT	CCT	CCT
Controls	No	No	No
Post	-0.458 (0.671)	-0.767 (1.185)	-0.441 (1.406)
(> 15,000)	-1.258 (0.829)	-1.537 (1.419)	-1.724 (1.801)
Post*(> 15,000)	2.270** (1.093)	3.054* (1.744)	2.830 (2.114)
Observations	751	680	773
Bandwidth	1933	1761	1966
Mean outcome	15.819	15.845	15.827

Notes. Diff-in-disc estimates of the impact of anti-revolving door on the education of politicians. Initial sample: municipalities between 10,000 and 30,000 inhabitants. Electoral terms between 2003 and 2021. Variables in the Table: 1) (> 15000) = 1 for municipalities with more than 15,000 inhabitants; 2) (Post) = 1 for electoral terms starting from 2013. The outcome variable is the average years of education of mayoral candidates in column 1, and the average years of education of elected mayors in column 2. Robust standard errors clustered at the municipality level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Figure D1: Diff-in-disc estimates: different bandwidths



Notes. Diff-in-disc estimates. Horizontal axis: different bandwidths used to estimate the diff-in-disc coefficients. Vertical axis: diff-in-disc coefficients. Dashed red vertical line: optimal bandwidth as in Table 3. The central blue lines connect the estimated coefficients, while the green lines the 95 percent confidence intervals.

D.2 Performance: non-winsorized dependent variables

Table D5: The effect of anti-revolving door policy on the performance of mayors
Municipal income tax

	(1)	(2)	(3)
Dep. Var.	Income tax All sample	Income tax Non-graduate mayors	Income tax Graduate mayors
Control Function	Linear	Linear	Linear
Bandwidth	CCT	CCT	CCT
Controls	No	No	No
Panel A: per capita revenues			
(> 15000)	-16.179 (10.254)	0.177 (14.569)	-19.180 (12.003)
Post	28.563** (11.528)	53.357*** (17.032)	19.120 (12.537)
Post*(> 15000)	-25.807* (14.648)	-49.705** (21.695)	-13.635 (18.995)
Observations	650	334	420
Bandwidth	1088	1316	1171
Mean outcome	63.208	68.967	61.973
Panel B: tax rate			
(> 15000)	-0.069 (0.077)	-0.081 (0.123)	-0.076 (0.085)
Post	0.140* (0.077)	0.254** (0.120)	0.069 (0.088)
Post*(> 15000)	-0.123 (0.107)	-0.176 (0.157)	-0.038 (0.141)
Observations	602	257	451
Bandwidth	998	1062	1287
Mean outcome	0.524	0.507	0.506

Notes. Diff-in-disc estimates of the impact of anti-revolving door on the performance of mayors. Initial sample: municipalities between 10,000 and 30,000 inhabitants. Years between 2009 and 2016. Variables in the Table: 1) (> 15000) = 1 for municipalities with more than 15,000 inhabitants; 2) (Post) = 1 for years starting from 2013. The outcome variable is the per capita revenue from the municipal surcharge on personal income tax (Addizionale IRPEF) in Panel A, and the average tax rate of the same surcharge in Panel B. Samples: 1) all sample in column 1; 2) only non-graduate mayors in column 2; c) only graduate mayors in column 3. Robust standard errors clustered at the municipality level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Table D6: Effect of the anti-revolving door policy on municipal income tax
Non-Graduate Mayors

	(1)	(2)	(3)
Dep. Var.	Income tax Non-graduate All	Income tax Non-graduate No term limit	Income tax Non-graduate Term limit
Control Function	Linear	Linear	Linear
Bandwidth	CCT	CCT	CCT
Controls	No	No	No
Panel A: per capita revenues			
(> 15000)	0.177 (14.569)	5.409 (16.960)	-4.740 (23.523)
Post	53.357*** (17.032)	65.684*** (16.416)	21.856 (21.573)
Post*(> 15000)	-49.705** (21.695)	-81.434*** (23.508)	-14.112 (25.612)
Observations	334	178	130
Bandwidth	1316	1141	1493
Mean outcome	68.967	64.942	68.236
Panel B: tax rate			
(> 15000)	-0.081 (0.123)	-0.046 (0.152)	0.007 (0.138)
Post	0.254** (0.120)	0.451*** (0.109)	-0.015 (0.107)
Post*(> 15000)	-0.176 (0.157)	-0.407** (0.166)	0.072 (0.166)
Observations	257	152	147
Bandwidth	1062	931	1778
Mean outcome	0.507	0.502	0.522

Notes. Diff-in-disc estimates of the impact of anti-revolving door on the performance of mayors. Initial sample: municipalities between 10,000 and 30,000 inhabitants. Years between 2009 and 2016. Variables in the Table: 1) (> 15000) = 1 for municipalities with more than 15,000 inhabitants; 2) (Post) = 1 for years starting from 2013. The outcome variable is the per capita revenue from the municipal surcharge on personal income tax (Addizionale IRPEF) in Panel A, and the average tax rate of the same surcharge in Panel B. Samples: 1) only non-graduate mayors in column 1; 2) only non-term limited non-graduate mayors in column 2; c) only term limited non-graduate mayors in column 3. Robust standard errors clustered at the municipality level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

E Campaign-spending limits and the campaign-expenditure data

E.1 The law 96/2012

The pre-reform baseline. Before Law 96/2012 there were no campaign-spending limits in Italian municipal elections at all. The title of Article 13 announces the limits as new (*Introduzione di limiti massimi delle spese elettorali dei candidati e dei partiti politici per le elezioni comunali*), and the article operates by extending to municipal elections a set of provisions — on electoral agents, reporting, controls and sanctions — that Law 515/1993 had introduced for *national parliamentary* elections. The law was published on 9 July 2012 and entered into force on 24 July 2012, after the May 2012 round of municipal elections. The first electoral round subject to the limits is therefore 2013, which is why

we treat 2013 as the first post-reform year for this policy as well as for the Severino Law.

The limits. Article 13 sets three separate ceilings: one for candidates for mayor (commi 1–3), one for candidates for municipal councillor (comma 4), and one for the parties, movements and lists themselves (comma 5). All three apply only above 15,000 inhabitants. Population determines only which bracket a municipality falls into; the euro multiplier is applied to the number of registered voters (*cittadini iscritti nelle liste elettorali comunali*), not to population. Table E1 reports the schedule, with V denoting registered voters. In the bracket that contains our bandwidth, a mayoral candidate in a municipality of 15,000 inhabitants faces a ceiling of roughly €37,000, and a list one of roughly €12,000. A candidate who spends less than €2,500 drawing solely on his or her own funds is exempt from the obligation to appoint an electoral agent and to route all funds through a dedicated account, but must still file the spending report.

Table E1: Campaign-spending limits introduced by Art. 13 of Law 96/2012. V = number of registered voters. Population selects the row; the multiplier applies to V .

Population bracket	Mayoral candidate (commi 1–3)	Councillor candidate (comma 4)	Party / list (comma 5) [†]
$\leq 15,000$	no limit	no limit	no limit
15,001 – 100,000	$\text{€}25,000 + \text{€}1.00 \times V$	$\text{€}5,000 + \text{€}0.05 \times V$	$\text{€}1.00 \times V$
100,001 – 500,000	$\text{€}125,000 + \text{€}1.00 \times V$	$\text{€}12,500 + \text{€}0.05 \times V$	$\text{€}1.00 \times V$
$> 500,000$	$\text{€}250,000 + \text{€}0.90 \times V$	$\text{€}25,000 + \text{€}0.05 \times V$	$\text{€}1.00 \times V$

[†] The party/list ceiling excludes the spending of the individual mayoral and councillor candidates, and is uniform at $\text{€}1.00 \times V$ in all brackets above 15,000.

Enforcement. Two different bodies are involved, and the law keeps the two reporting duties rigorously separate: individual candidates report to one organ, party lists to another (Table E2). Mayoral and councillor candidates file a *rendiconto* with the *Collegio regionale di garanzia elettorale*, sitting at the Court of Appeal of each regional capital; this duty applies above 15,000 inhabitants throughout the period and its records are not published. Parties and lists file a *consuntivo* with the regional control section of the Court of Auditors, which publishes a report on each municipality it audits. As originally enacted, this control applied above 15,000; Article 33, comma 3 of Decree-Law No. 91 of 24 June 2014 (converted by Law 116/2014) restricted it to municipalities above 30,000. For every electoral round from late 2014 onwards — the bulk of our post-reform sample — crossing the 15,000 threshold therefore brings only the individual-candidate reporting duty, and not the intensive, published, list-by-list audit, which begins at 30,000, well outside our bandwidth.

Deadlines and sanctions. Candidates must file within three months of the election; parties and lists must deposit their *consuntivo* within 45 days of the installation of the

Table E2: Who files what, who controls it, and at which population threshold.

Filing subject	Document	Controlling body	Population threshold
Mayoral and councillor candidates	<i>rendiconto</i>	<i>Collegio regionale di garanzia elettorale</i> , sitting at the Court of Appeal	> 15,000, unchanged throughout
Parties, movements, lists	<i>consuntivo</i>	<i>Sezione regionale di controllo</i> of the Court of Auditors (<i>Corte dei conti</i>)	> 15,000 until mid-2014; > 30,000 thereafter

new council, and the Court of Auditors must conclude its control within six months of the filing. The sanctions, inherited from Law 515/1993, are pecuniary: a candidate who fails to file is fined between roughly €26,000 and €103,000, and one who exceeds the ceiling pays between one and three times the excess; a list that exceeds the ceiling pays between one half and three times the excess, and one that fails to deposit its *consuntivo* at all is fined between €50,000 and €500,000 — the only sanction that is itself restricted to municipalities above 30,000.

E.2 The campaign-expenditure data

Where each unit’s accounts can be found. Which source a spending figure comes from is dictated by the law. Party lists file with the Court of Auditors, whose reports are published: they are the source for lists. Mayoral and councillor candidates file with the *Collegio regionale di garanzia elettorale*, whose records are not published; their spending becomes public only when a municipality posts the statements in its *albo pretorio*, or when a newspaper reports them. We therefore collected from three sources: (i) 331 Court of Auditors reports (*referti*), one per audited municipality and electoral year, each listing the declared spending of every list; (ii) 287 local-press articles reporting the accounts of individual candidates and lists; and (iii) the electoral statements published in the *albo pretorio* of 53 Lombard municipalities, of which 34 are image-only scans read from the page images. Two legal facts bound what can be collected at all: below 15,000 inhabitants there is no limit, no reporting duty and no controller, so no official record of spending exists; and before 24 July 2012 the same was true everywhere. Sub-threshold and pre-2013 spending can therefore only ever be observed through the press.

Extraction and validation. Each source document was read and its figures transcribed into one observation per candidate or list, per municipality, per election, with the municipality, year, unit name, amount, and the registered-voter and ceiling figures stated in the source where available. Every observation carries the verbatim passage of the source document from which its amount was taken, and two automatic checks are run on every one of them: *containment* — the transcribed passage must appear word

for word in the source — and *amount-in-snippet* — the euro figure must appear in that passage. Figures that the source does not print are never computed: an amount that appears only as the sum of its components is recorded as its components, not as a total. The resulting dataset has 4,730 observations in 225 municipalities, of which 1,821 come from the Court of Auditors, 2,816 from the press and 93 from the municipal *albo*; 463 are pre-2013. Observations are flagged when they are duplicates of one another, when they belong to a special-statute region, when several lists file a single joint account for a whole coalition, and when the figure is a *planned* budget (*preventivo*) rather than actual spending.

Sample and the counterfactual ceiling. The estimation sample keeps the 15 ordinary-statute regions, to match the sample of the difference-in-discontinuity design; keeps one observation per candidate or list, preferring the official filing to the press report where both exist;³⁴ and drops joint coalition filings, for which a combined total cannot be compared with a per-unit ceiling. Planned budgets are *kept*, which is conservative: a planned budget is weakly larger than the spending that follows it, so keeping them can only make spending look closer to the ceiling. This leaves 3,587 observations in 199 municipalities (2,853 lists, 384 mayoral candidates, 350 councillor candidates). For each of them the ceiling is computed from Table E1, using the registered voters stated in the source where the source states them, the municipal electoral roll otherwise, and 80% of the population where neither is available. Before 2013 no ceiling existed, so for every pre-reform election we compute the *counterfactual* ceiling that Article 13 would have imposed on that election given its actual electoral roll, and measure pre-reform spending against it. The outcome variable throughout is

$$\text{ratio} = 100 \times \frac{\text{expenditure}}{\text{ceiling}},$$

the expenditure as a percentage of the maximum allowed, which is unit-free and therefore comparable across municipalities of different size, across the three types of unit, and across the two periods.

E.3 The distribution of spending, before and after the law

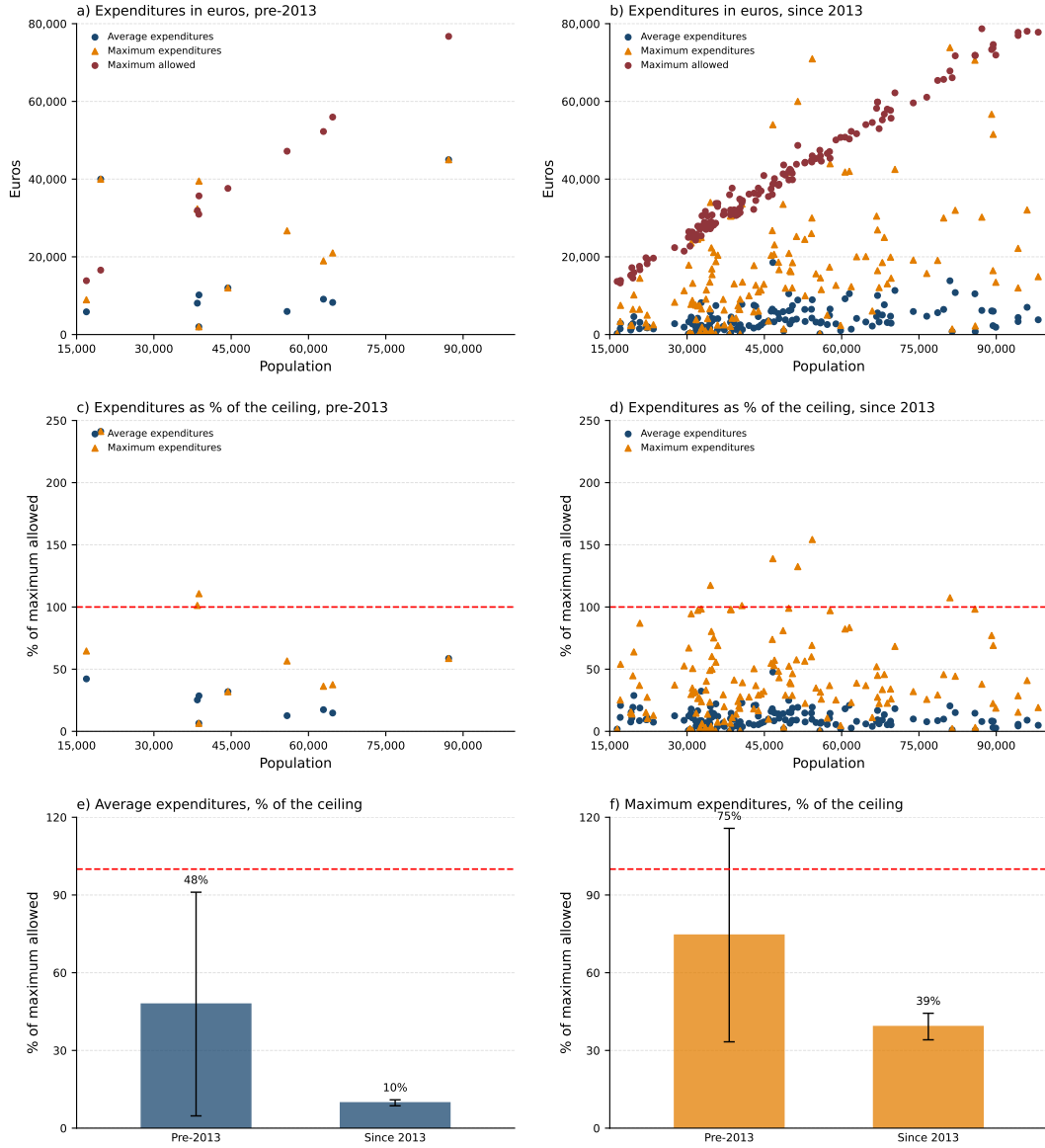
³⁴The same list often files with the Court of Auditors *and* is reported in the press, and the two sources spell its name differently (“PARTITO DEMOCRATICO” against “Partito democratico”). The deduplication key therefore normalises case, accents and punctuation in the unit name; keying on the raw name leaves the unit counted twice.

Table E3: Campaign expenditures relative to the ceiling: how many units were ever near it?

Unit	Population	<i>n</i>	Median	% of observations with spending			
				< 50%	[90, 100)%	≥ 100%	Max
<i>Panel A. Before 2013 (no ceiling in force; counterfactual ceiling)</i>							
All units pooled	>15,000	334	11.3%	84.1	2.1	5.4	784.8%
All units pooled	15,000–100,000	126	14.0%	83.3	1.6	6.3	241.2%
Party lists	>15,000	197	9.3%	89.8	1.0	3.0	301.1%
Party lists	15,000–100,000	90	13.5%	90.0	0.0	3.3	241.2%
Mayoral candidates	>15,000	84	15.4%	71.4	4.8	10.7	784.8%
Mayoral candidates	15,000–100,000	36	22.2%	66.7	5.6	13.9	191.5%
<i>Panel B. Since 2013 (ceiling in force)</i>							
All units pooled	>15,000	3,221	3.7%	95.8	0.6	0.2	154.3%
All units pooled	15,000–100,000	2,374	4.0%	96.0	0.5	0.3	154.3%
Party lists	>15,000	2,642	3.5%	97.0	0.5	0.2	154.3%
Party lists	15,000–100,000	1,958	4.1%	96.7	0.6	0.3	154.3%
Mayoral candidates	>15,000	286	12.3%	87.4	1.4	0.0	99.6%
Mayoral candidates	15,000–100,000	203	10.5%	88.7	0.5	0.0	93.6%

Notes. One observation is one candidate or one list, in one municipality, in one election. Spending is expressed as a percentage of the maximum allowed by Art. 13 of Law 96/2012; before 2013 no ceiling was in force and the benchmark is the counterfactual ceiling the law would have imposed on that election, given its actual electoral roll. Ordinary-statute regions; joint coalition filings excluded. The pre-2013 observations come entirely from press reports, which cover high-spending races disproportionately.

Figure E1: Campaign expenditures and the legal limit: party lists



Notes. Party lists in municipalities between 15,000 and 100,000 inhabitants, 15 ordinary-statute regions. One dot is one municipality: within each municipality and period we take the average and the maximum expenditure across all lists and all elections. Panels (a) and (b): expenditures in euros, before 2013 and since 2013. Navy dots: average expenditure. Orange triangles: maximum expenditure. Maroon dots: the maximum expenditure allowed by law (€1 per registered voter, uniform across brackets, and excluding the spending of the mayoral and councillor candidates themselves). Panels (c) and (d): the same expenditures as a percentage of the maximum allowed; the dashed line at 100% is the legal limit. Panels (e) and (f): mean across municipalities of the average and of the maximum expenditure, respectively, as a percentage of the maximum allowed; spikes are 95% confidence intervals. No spending limit existed before 2013: the pre-2013 benchmark is the *counterfactual* ceiling. Lists that file a single joint account for a whole coalition are excluded, since the ceiling applies to each list separately. The pre-2013 panels rest on 10 municipalities (90 lists) and the post-2013 panels on 145 municipalities (1,958 lists).

F Performance of mayors: fiscal health and the quality of the municipal bureaucracy

The main prediction of the theoretical model is that a reduction in the value of politically connected outside options increases the incentives of low human capital politicians to pander toward the voters, choosing popular but possibly suboptimal policies. Section 4.3.4 provides evidence consistent with this prediction: after the introduction of the anti-revolving door policy, non-graduate mayors—and in particular non-graduate mayors who are not term-limited—reduce the municipal surcharge on the personal income tax. Two natural follow-up questions arise. The first is how this tax cut is absorbed by the municipal budget: mayors facing a higher cost of losing office may be tempted to finance electorally rewarding tax cuts by running deficits or by issuing new debt. The second is whether this pandering behavior is also associated with worse outcomes in the day-to-day management of the municipal administration: if low human capital mayors respond to the policy by concentrating their efforts on electorally rewarding actions, such as tax cuts, we may expect the quality of the municipal machine they run to deteriorate.

We address the first question with two outcome variables that capture the fiscal health of the municipality: a dummy equal to 1 if the municipality closes the year in deficit on the accrual (*competenza*) balance, excluding financing items, and the per capita revenues from new borrowing. We estimate the same difference-in-discontinuity model of Equation (2), using the same sample of the analysis of Section 4.3.4: municipalities between 10,000 and 30,000 inhabitants, years between 2009 and 2016, and only mayors who were already in office at the time of the introduction of the policy in 2013. Table F1 reports the results. The anti-revolving door policy has no effect on the probability of running a deficit: the interaction term is a precise zero in the full sample (0.011, with a standard error of 0.162, against a mean outcome of about 0.20), and it remains statistically and economically insignificant in every subsample—including the non-graduate, non-term-limited mayors who drive the tax cut (column 4). New borrowing (Panel B) behaves in the same way: the only marginally significant coefficient, for graduate mayors, is negative, i.e. of the opposite sign of what a debt-financing story would imply. Two conclusions follow. First, the tax cut documented in Section 4.3.4 is not financed by deficits or by new debt: pandering operates through the level of taxation, not through fiscal irresponsibility. Second, the absence of any offsetting improvement in the fiscal aggregates suggests that the lower taxes chosen by low human capital mayors do not reflect efficiency gains in the management of the municipal budget.

To investigate the second question, we follow the example of Bellodi et al. (2024), who show that the quality of the municipal bureaucracy is a key determinant of government performance in Italian municipalities. As in their paper, we build measures of the quality of the municipal bureaucracy from the *Conto Annuale* data of the Italian General

Table F1: The effect of the anti-revolving door policy on municipal fiscal health

	(1)	(2)	(3)	(4)	(5)
Sample	All	Non-graduate mayors	Graduate mayors	Non-graduate no term limit	Non-graduate term limit
Control Function	Linear	Linear	Linear	Linear	Linear
Bandwidth	CCT	CCT	CCT	CCT	CCT
Controls	No	No	No	No	No
Panel A: probability of running a deficit					
Post*(> 15000)	0.011 (0.162)	-0.065 (0.174)	0.114 (0.232)	-0.182 (0.243)	-0.013 (0.203)
Observations	718	376	434	257	130
Bandwidth	1183	1587	1223	1662	1467
Mean outcome	0.201	0.186	0.198	0.194	0.175
Panel B: per capita revenues from new borrowing					
Post*(> 15000)	-19.188 (90.062)	-13.281 (218.255)	-125.770* (67.785)	37.730 (251.713)	-22.644 (179.173)
Observations	846	272	426	162	111
Bandwidth	1426	1121	1189	1026	1195
Mean outcome	61.90	86.15	55.22	90.28	84.47

Notes. Diff-in-disc estimates of the impact of the anti-revolving door policy on the fiscal health of municipalities. Initial sample: municipalities between 10,000 and 30,000 inhabitants. Years between 2009 and 2016. The sample includes only mayors who were already in office at the time of the introduction of the policy in 2013. Variables in the Table: 1) (> 15000) = 1 for municipalities with more than 15,000 inhabitants; 2) (Post) = 1 for years starting from 2013. The outcome variable is a dummy equal to 1 if the municipality closes the year in deficit on the accrual (*competenza*) balance, excluding financing items, in Panel A (estimated as a linear probability model), and the per capita revenue from new borrowing, in constant 2015 euros and winsorized at the 1st and 99th percentiles, in Panel B. Both outcome variables are built from municipal balance sheets (2009–2015) and from the harmonized *rendiconto* accounts (2016). Samples: 1) all sample in column 1; 2) only non-graduate mayors in column 2; 3) only graduate mayors in column 3; 4) only non-graduate mayors without term limit in column 4; 5) only non-graduate mayors with term limit in column 5. Robust standard errors clustered at the municipality level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

Accounting Office (*Ragioneria Generale dello Stato*). Specifically, we use two outcome variables: the number of municipal employees (in full-time equivalent units) per 1,000 inhabitants, and the average years of education of municipal employees. We estimate the same difference-in-discontinuity model of Equation (2), on the same sample.

Table F2 reports the results. Panel A shows that, after the reform, municipalities above the 15,000-inhabitant threshold operate with a smaller municipal workforce: the interaction term $Post \times (> 15,000)$ implies a reduction of about 1.3 employees per 1,000 inhabitants in the full sample (column 1), roughly a quarter of the mean outcome, and the effect is negative and statistically significant also when we split the sample between non-graduate (column 2) and graduate (column 3) mayors. Panel B looks at the average level of education of municipal employees. Here, the effect is absent in the full sample and in the two education subsamples (columns 1–3), but it emerges precisely where the model predicts pandering incentives to be strongest: for non-graduate mayors who are not term-limited (column 4), the average years of education of the municipal bureaucracy fall by roughly 0.9 years, an effect statistically significant at the 10% level. By contrast, for term-limited non-graduate mayors (column 5), who face no re-election incentives, the coefficient

is small and not statistically different from zero. Taken together, these results suggest that the pandering behavior documented in Section 4.3.4 is indeed accompanied by a worse management of the municipal administration: after the introduction of the anti-revolving door policy, the municipal workforce shrinks above the threshold irrespective of the education of the mayor, while the bureaucracy becomes less educated only where the model predicts pandering incentives to be strongest, that is, in municipalities run by non-graduate mayors who can seek re-election.

Table F2: The effect of the anti-revolving door policy on the quality of the municipal bureaucracy

	(1)	(2)	(3)	(4)	(5)
Sample	All	Non-graduate mayors	Graduate mayors	Non-graduate no term limit	Non-graduate term limit
Control Function	Linear	Linear	Linear	Linear	Linear
Bandwidth	CCT	CCT	CCT	CCT	CCT
Controls	No	No	No	No	No
Panel A: municipal employees per 1,000 inhabitants					
Post*(> 15000)	-1.274** (0.579)	-2.557*** (0.952)	-2.069** (1.002)	-1.904 (1.294)	-2.016 (1.210)
Observations	983	278	354	180	138
Bandwidth	1676	1124	981	1163	1584
Mean outcome	4.935	4.816	4.771	4.558	5.300
Panel B: average years of education of municipal employees					
Post*(> 15000)	-0.037 (0.398)	-0.395 (0.557)	0.231 (0.482)	-0.867* (0.494)	0.211 (1.017)
Observations	776	322	502	219	121
Bandwidth	1282	1277	1456	1422	1284
Mean outcome	12.99	12.88	13.00	12.92	12.87

Notes. Diff-in-disc estimates of the impact of the anti-revolving door policy on the quality of the municipal bureaucracy. Initial sample: municipalities between 10,000 and 30,000 inhabitants. Years between 2009 and 2016. The sample includes only mayors who were already in office at the time of the introduction of the policy in 2013. Variables in the Table: 1) (> 15000) = 1 for municipalities with more than 15,000 inhabitants; 2) (Post) = 1 for years starting from 2013. The outcome variable is the number of municipal employees (full-time equivalent) per 1,000 inhabitants in Panel A, and the average years of education of municipal employees in Panel B. Both outcome variables are built from the *Conto Annuale* data of the Italian General Accounting Office (*Ragioneria Generale dello Stato*), following Bellodi et al. (2024), and are winsorized at the 1st and 99th percentiles. Samples: 1) all sample in column 1; 2) only non-graduate mayors in column 2; 3) only graduate mayors in column 3; 4) only non-graduate mayors without term limit in column 4; 5) only non-graduate mayors with term limit in column 5. Robust standard errors clustered at the municipality level are in parentheses. Significance at the 10% level is represented by *, at the 5% level by **, and at the 1% level by ***.

G Anecdotal evidence on the political salience of the municipal income tax

The analysis of Section 4.3.4 uses the municipal surcharge on the personal income tax (Addizionale IRPEF) as its measure of policymaking, on the premise that the surcharge is salient to voters, so that reducing it (or avoiding increases) is the ex-ante popular action. Figure 7 provides survey evidence that Italian voters, on average, dislike local taxation. This appendix complements that evidence by documenting that the surcharge itself is

a visible and contested instrument in Italian municipal politics: we provide anecdotal evidence that candidates campaign on abolishing it, incumbents claim credit for reducing it, and oppositions attack increases as broken electoral promises.

Systematic evidence on the salience of the surcharge is provided by Giommoni (2019), who shows that Google searches for the municipal surcharge display strong seasonality, peaking in June, when the tax is due, and in January, right after rates are set or updated. Consistently, the amount paid is visible on the monthly payslips of employees and retirees, municipal rates are published by the Ministry of Economy and Finance, and the local press routinely covers them (Alpino et al., 2022).

We collected statements by mayors, mayoral candidates and local political groups concerning the level of the surcharge, from press agencies, local newspapers, official municipal communications and campaign materials.³⁵ The statements below date from 2022 to 2026, hence after our estimation window: we read them as documenting a stable institutional feature — the political salience of the instrument. Four of the municipalities involved lie within the 10,000–30,000 band used in our empirical analysis: Spresiano (about 12,000 inhabitants), Tarquinia (16,000), Muggiò (23,000) and Giussano (26,000).

Candidates campaigning on abolition. In Perugia, mayoral candidate Massimo Monni (Perugia Merita) opened his 2024 platform with the “immediate abolition of the municipal income tax surcharge”, to be brought to a vote at the first meeting of the new executive, arguing that the measure would “significantly lighten the fiscal pressure on citizens”.³⁶ In Ravenna, the 2025 centre-right candidate Nicola Grandi closed his campaign with the pledge to abolish the municipal Irpef surcharge in the first year of his mandate — a measure worth €12–13 million of yearly municipal revenue, with savings of up to €240 per year depending on income — to be financed by a spending review of about €10 million.³⁷ In Puegnago del Garda (about 3,400 inhabitants), candidate Cristina Cinquetti presented her list with the guarantee that “there will never be an

³⁵All links in this appendix were last accessed on 1 August 2026. Translations from the Italian are ours; the original wording is reported in the footnotes.

³⁶«Immediata abolizione dell’addizionale Irpef comunale»; «sono convinto che questa misura, congiuntamente ad altre che seguiranno a breve, alleggerirà sensibilmente la pressione fiscale sui cittadini». Source: ANSA, 5 June 2024, https://www.ansa.it/umbria/notizie/2024/06/05/monni-subito-abolizione-delladdizionale-comunale-irpef_9a4a08e7-14c3-4cf2-a94a-ea9c34510b73.html.

³⁷The pledge is reported as «potremo liberare fino a 10 milioni di euro all’anno. Una cifra che ci consentirà di azzerare l’addizionale Irpef già dal primo anno di mandato»; the headline of the report renders it as «Azzeriamo l’addizionale Irpef del comune già il primo anno». Sources: *RavennaNotizie*, 21 May 2025, <https://www.ravennanotizie.it/rubriche/ravenna-al-voto-2025/2025/05/21/nicola-grandi-centrodestra-azzeriamo-laddizionale-irpef-del-comune-gia-il-primo-anno-siamo-gli-unic-i-in-grado-di-battere-barattoni>; *Ravenna e Dintorni*, 21 May 2025, <https://www.ravennaedintorni.it/politica/2025/05/21/nicola-grandi-candidato-sindaco-fdi-azzeramento-irpef-cittadini-ravennati/>; *RavennaToday*, May 2025, <https://www.ravennatoday.it/politica/programma-ravenna-snella-elezioni-grandi.html>.

Irpef surcharge with our list leading the town hall”.³⁸

Incumbents reducing the surcharge and claiming credit. The mayor of Como, elected in 2022 on a platform including the commitment “we will lower the municipal IRPEF surcharge by 0.1 percentage points”, reduced the rate from 0.80% to 0.77% in 2023, 0.74% in 2024 and 0.70% in 2025, and presents the sequence of cuts as the fulfilment of that promise: “as long as monstrous budget surpluses persist [...] we will keep lowering the monstrous taxes”.³⁹ In Giussano, the mayor cut the rate twice — from 0.80% to 0.74% in 2021, and to 0.69% from 2024 — commenting: “the vote of the City Council marks an important step: continuing the reduction of the fiscal pressure on taxpayers, while guaranteeing the quantity and the quality of the services provided to citizens”.⁴⁰ In Muggiò, the exemption threshold of the surcharge was the object of an explicit political exchange: in January 2025 the opposition proposed raising it from €15,000 to €17,000 — observing that even the latter figure “would still be below what Istat defines as the poverty threshold in Lombardy” — and the mayor replied that “in the next budget we will be in a position to do it”; the 2026 budget indeed raised the threshold to €18,000, exempting almost a thousand additional taxpayers, a measure the mayor presented as the delivery of a qualifying point of his electoral programme.⁴¹

Increases as electoral ammunition. In Tarquinia, the 2026 increase of the surcharge from 0.6% to 0.8% — the statutory maximum — was met by the opposition with the words: “a choice we consider serious and unjustifiable [...] the bill for the administration’s incapacity and broken promises cannot and must not be presented to the people of Tarquinia”;⁴² the local left added that “if new sacrifices are asked of citizens, the first

³⁸ «Non ci sarà mai una addizionale Irpef con la nostra lista alla guida del Municipio». Source: *QuiBrescia*, 3 May 2024, <https://www.quibrescia.it/provincia/garda/2024/05/03/cinquetti-candidata-sindaco-a-puegnago-no-addizionale-irpef-e-nuova-fiera/697382/>.

³⁹ «Abbasseremo l’addizionale IRPEF comunale dello 0,1%»; «Fino al permanere di avanzi di bilancio mostruosi [...] continueremo ad abbassare le mostruose tasse». Sources: campaign website of mayor Alessandro Rapinese, 22 July 2026, <https://www.rapinesesindaco.com/2026/07/22/071-tasse-giu/>; *ComoZero*, 23 October 2024, <https://comozero.it/attualita/como-la-giunta-abbassa-ancora-le-tasse-cala-laddizionale-irpef-ecco-la-nuova-aliquota/>.

⁴⁰ «Il voto del Consiglio Comunale sancisce un passo importante: proseguire nella diminuzione della pressione fiscale sui contribuenti, garantendo la quantità e la qualità dei servizi resi alla cittadinanza» (mayor Marco Citterio). Source: *Monza in Diretta*, 28 December 2023, <https://monzaindiretta.it/societa/il-comune-di-giussano-diminuisce-lirpef/>.

⁴¹ «Una cifra che comunque sarebbe al di sotto di quella che l’Istat definisce come soglia di povertà in Lombardia» (Riccardo Sala, opposition councillor); «Nel prossimo Bilancio saremo nelle condizioni di poterlo fare» (mayor Michele Messina). Sources: *Prima Monza*, 12 January 2025, <https://primamonza.it/politica/con-lanno-nuovo-le-tasse-non-si-abbasseranno/>; *MonzaToday*, January 2026, <https://www.monzatoday.it/economia/muggio-esenzione-addizionale-comunale-carico-fiscale-2026.html>.

⁴² «Una scelta che riteniamo grave e ingiustificabile»; «Il conto delle incapacità e delle promesse disattese dell’amministrazione non può e non deve essere presentato ai tarquiniesi». Source: *L’Extra*, 25 July 2026, <https://www.lextra.news/tarquinia-opposizione-aumento-addizionale-irpef-2026/>.

thing to do is to show that one has governed with rigour [...] first non-essential spending is cut; then, only if truly unavoidable, sacrifices are asked of citizens”.⁴³ In Vicenza, the mere hypothesis of an increase led the former mayor to react publicly: “the hypothesis of an increase in the municipal Irpef surcharge is a deeply worrying signal [...] raising the fiscal pressure on the people of Vicenza cannot and must not be the shortcut”, while claiming credit for having avoided increases during his own tenure despite the pandemic.⁴⁴

Abolitions and non-increases claimed as achievements. The municipality of Spresiano kept the surcharge at zero for four years thanks to savings and reorganisations, and presented its reintroduction in 2023 as forced by the increase in energy costs.⁴⁵ In Palermo, the withdrawal of a planned increase was announced by the mayor as “a political step of great significance for our city” — “it is not a gift, but the recognition of our work” — and by the *assessore* for the budget as “a concrete and significant result for our community”.⁴⁶

Taken together, these statements indicate that the municipal income tax surcharge is an instrument politicians expect voters to notice: candidates promise its abolition, incumbents advertise reductions as promises kept, and increases are framed by the oppositions as betrayals of electoral commitments. This is consistent with the premise of the analysis in Section 4.3.4: for an incumbent concerned with re-election, reducing (or not raising) the surcharge is the ex-ante popular action.

⁴³ «Se si chiedono nuovi sacrifici ai cittadini, la prima cosa da fare è dimostrare di aver amministrato con rigore»; «Prima si riducono le spese non essenziali, poi, solo se davvero inevitabile, si chiedono sacrifici ai cittadini». Source: *Terzo Binario News*, 30 July 2026, <https://www.terzobinario.it/tarquinia-prima-alzano-la-spesa-poi-le-tasse-e-il-conto-lo-pagano-i-cittadini-sinistra-italiana-vota-contro-laumento-delladdizionale-irpef/>.

⁴⁴ «L'ipotesi di un aumento dell'addizionale comunale Irpef è un segnale che preoccupa profondamente»; «Ritoccare al rialzo la pressione fiscale sui vicentini non può e non deve essere la scorciatoia» (Francesco Rucco, mayor of Vicenza 2018–2023). Source: *ViPù*, 26 March 2025, <https://www.vipiu.it/leggi/vicenza-ipotesi-aumento-dellirpef-comunale-il-centrodestra-attacca/>.

⁴⁵Source: *Il Gazzettino*, December 2022, https://www.ilgazzettino.it/nordest/treviso/spresiano-costi_bollette_entrare_addizionale_irpef_della_pietra-7131516.html.

⁴⁶ «Il risultato raggiunto sull'addizionale Irpef rappresenta un passaggio politico di grande rilievo per la nostra città» and «Non è un regalo, ma il riconoscimento al nostro lavoro» (mayor Roberto Lagalla); «La decisione di mantenere invariata l'aliquota dell'addizionale Irpef rappresenta un risultato concreto e significativo per la nostra comunità» (Brigida Alaimo, *assessore* for the budget). Sources: Comune di Palermo, official statement, 15 April 2026, <https://www.comune.palermo.it/novita/addizionale-dellirpef-dichiarazioni-del-sindaco-lagalla-e-dellassessore-al-bilancio/>; *PalermoToday*, April 2026, <https://www.palermotoday.it/politica/addizionale-irpef-sindaco-lagalla.html>.