Jumping without parachutes. Revolving doors and political incentives*

Matteo Gamalerio† Federico Trombetta‡

September 5, 2024

Abstract

This paper investigates how the interplay between politics and business influences the profiles of political candidates and their policy decisions. Specifically, we analyze the effects of anti-revolving door laws, which impose a mandatory "cooling-off" period before former politicians can take significant positions in the bureaucracy or state-owned enterprises. We develop a political agency model where politicians can access "politically connected outside options" (PCOs), and examine how the reduction in the expected value of these PCOs impacts candidate selection. Our findings suggest that a decline in the value of PCOs disproportionately affects candidates with lower human capital, thereby increasing the proportion of high human capital candidates. Simultaneously, this shift heightens the likelihood that low human capital politicians will pander toward the voters, even when such policies are suboptimal. Using data from Italian municipalities, we empirically test these predictions. Leveraging a population threshold that triggers the implementation of anti-revolving door policies, we employ a difference-in-discontinuity approach. Our results show that the cooling-off period raises the average education levels of candidates and elected mayors. Additionally, we find that the reform reduces the tendency of low human capital mayors to adopt electorally costly policies.

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

JEL Classification: D72, D73, H75.

*We thank Paolo Gambacciani and Carlos Di Bonifacio for excellent research assistance, and Emanuele Andreis for legal consultancy. We thank Audinga Baltrunaite, Federico Franzoni, Francesco Porcelli and Eugenio Songia for helping with the data. We thank Agustin Casas, Benoit Crutzen, Massimo Bordignon, Antoni-Italo de Moragas, Luisa Doerr, Elisa Facchetti, Gabriele Gratton, Giorgio Gulino, Max-Emil King, Massimo Morelli, Albert Sole-Olle, Domenico Rossignoli, Guido Tabellini, Silvia Vannutelli, Michele Valsecchi and participants to the Petralia 2023 workshop, Bocconi Pericles and Political Economy Breakfast, UniCatt Political Economy Work in progress seminar, UniTo Lunch Seminars, Autonoma seminar, EIEF seminar, 2024 EPCS conference, 7th Marco Fanno Alumni workshop, Pericles online seminar, BSE Public Economics Summer Forum, 2nd ZEW-Ifo Young Scholar Political Economy Workshop, and XIII IBEO workshop for their comments. Any remaining mistake is ours. Funding from the Einaudi Institute for Economics and Finance, Research Grant 2022, is gratefully acknowledged.

†Institut d'Economia de Barcelona (IEB), 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. We uncover those 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., 2022; Snowberg and Ting, 2019)[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 (Shleifer and Vishny, 1994): for example, 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.

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, in terms of whether they run or which policies they choose.[2] For example, officeholders may want to exploit their power or 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).[3] This behaviour does not necessarily mean that they are instrumental to regulatory capture: the possibility of a "parachute" in the bureaucracy or on the board of a State-owned firm[4] is a way to increase the expected benefits of a

[1] In 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).

[2] Two relevant 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.

[3] In 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.

[4] By "State-owned firm" we mean firms controlled either by national or local Governments.

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) 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 and the policies they implement once in office? This paper shows, 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.[5] 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 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 posturing, 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 wages. A wage reduction decreases the value of a political career by making holding office generally less valuable, relative to not running and relative to losing it. Anti-revolving

[5]Several other countries, as well as the European Union, adopted similar laws.

door policies also reduce the total value of a political career, but they do that by decreasing the outside option once this career ends. This 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 endogenous entry into politics, policymaking, 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 on 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 behaviour of low human capital politicians relatively more. In particular, the model shows that a reduction in the PCOs expected value can increase the range of parameters where low human capital politician finds it optimal to choose the ex-ante popular action, rather than the action that is optimal given the information they posses. 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.

Guided by the model, we bring its predictions to the data using a difference-in-discontinuity design (Grembi et al., 2016; Gamalerio and Trombetta, 2023). In particular, we compare the average years of education for mayoral candidates and mayors in Italian municipalities around the 15,000 inhabitants threshold, pre and post 2013. We show that indeed the introduction of cooling off periods increases the average years of education of both mayoral candidates and elected mayors by 2 years, consistently with the prediction of the model. The relative cost of cooling off periods are higher for individuals with lower outside options, as they are more likely to need this type of political appointments. As a consequence, the introduction of this anti-revolving door policy discourages low human capital perspective politicians relatively more than high human capital perspective candidates, thus increasing the overall share of the latter. If better educated mayors lead to better policy outcomes,[6] this is good news for the voters.

On top of this, we show that the reform is indeed reducing the probability that a former mayor holds a leading position in a SOE, while it has no effect on the probability that a former mayor holds a similar position in a firm where the State holds a minority of shares (henceforth, PMSE). To do so, we exploit a newly constructed dataset of individuals holding top positions in firms where the State owns a fraction of the shares, and we run the difference-in-discontinuity

[6]Few papers argue against this idea (Carnes and Lupu, 2016), but most of the recent empirical results (Carreri, 2021; Sørensen, 2023; Meriläinen, 2022; Gamalerio and Trombetta, 2023) find a positive effect of politicians' education on outcomes.

design using as an outcome variable the probability that a mayor holds a leading position in a SOE or in a PMSE. As PMSE were not affected by the introduction of the Severino law, this result is consistent with the idea that the policy change affects politicians' incentives.

Finally, we exploit the staggered election calendar of Italian municipalities to study the effect of the anti-revolving door policy on in-office performance, disentangling it as much as possible from selection. Theoretically, the model predicts more pandering by low human capital politicians, because of the increased cost of losing office. Outside the realm of the model, this implies that low human capital politicians should be relatively more prone to choose policies not likely to upset voters, irrespective of whether they are socially optimal or not. Empirically, we move to a municipality-year dataset and we compare the in office behaviour of mayors elected before the approval of the reform (hence unaffected by the change in selection incentives outlined above), pre and post 2013, in municipalities just above and just below 15,000 inhabitants. For those mayors, the reform essentially implies that the possibility of a PCO is taken away for one or two years (in municipalities above 15,000), hence losing the next election may be costlier. Our first outcome variable is the share of recycled waste, as a proxy for a policy that can be welfare improving but electorally costly. Secondly, we look at the effect on per capita revenues from the municipality component of the income tax: politicians more concerned about re-election may be tempted to cut local taxes. We find that low human capital mayors slow down the share of separate waste collection because of the Severino law, while there is no statistically significant effect for high human capital mayors. Furthermore, we find a negative effect of the reform on local income tax revenues, almost entirely driven by low human capital mayors. Using the logic of the model, we interpret this result as low human capital politicians being relatively more concerned about losing the next elections, because they cannot immediately join the board of a SOE, and hence being less willing to implement eco-friendly but electorally costly policies (more recycling implies more monitoring of citizens' behaviour, perhaps a more costly service), and more willing to cut local taxes.

Taken together, our results suggest that cooling off periods 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 inferior but electorally rewarding policies, because the cost of losing elections increases. More broadly, our paper highlights the importance of connections between politics and other sectors in shaping politicians' incentives. 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 policies across different types of candidates, are also crucial. Finally, this paper shred lights on the political role of SOEs, that represent a sizeable share of the economy (they employ 3.4% of Italian workers in industry and service). we see this contribution as complementary

with respect to the small but growing literature studying how politics affect the objectives of those firms (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.[7] In this respect, we are closer to Shepherd and You (2020), who studies how career concerns and the possibility of a job in the lobbying industry affects the behaviour 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 labour 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 behaviour 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 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

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

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. Cingano and Pinotti (2013) documents a revenue-premium for politically-connected firms in Italy because of a shift of public demand in their favour, 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.[8] 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 behaviour 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 of external rewards on politicians' behaviour (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),[9] 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 induce "non-achievers" politicians to leave. Our result 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. Second, we are able to say something also about effects of this policy on the in-office behaviour. Third,

[8]Related 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 disproportionally more in the public sector, vis-a-vis the private one.

[9]Importntly, they typically look at the ex post career of elected politicians, while we can look at the entry decision as well.

we use a difference-in-discontinuity design, rather than a structural model. Overall, we believe that our result is important 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 perspective candidates.

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, 2023), 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 competence 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 $\phi_P \in \{\phi_L = \phi, \phi_H = 1\}$. 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 $\alpha + E$ if $x_t = \theta_t$ and of E otherwise. Hence, α 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 $\phi \in \{0, \phi_H\}$. The pool is such that $Pr(\phi = 1) = \kappa_0$, common knowledge. At the beginning of the game, one of the perspective 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 $w(\phi) < w(1)$, and a new perspective candidate is drawn. The first perspective 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 $\left[-\frac{1}{\psi}, \frac{1}{\psi}\right]$, 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

$$Eu^P(pol|\phi_P) + \epsilon \geq Eu^P(mkt|\phi_P) \tag{1}$$

where $Eu^P(pol|\phi_P)$ is the expected utility of a political career and $Eu^P(mkt|\phi_P)$ 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, and that $(1-\phi)u \geq w(\phi_H) - O$, so that high h.c. types are at least as motivated as low h.c. types in being re-elected.

2.1.1 Timing and solution concept

To sum up, timing is as follows:

Period 1:

1. Perspective politicians choose between market ($w(\phi)$ forever) or politics: the first perspective 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 $w(\phi)$. If in office, signal and policy choice again. If a new politician is elected, she receives the signal and chooses the policy;
2. Payoffs are paid and the game ends.

Our solution concept is Perfect Bayesian Nash equilibrium (PBNE). As in Ashworth and Shotts (2010), we define full accountability equilibria those where politicians of every type choose $x_t = s_t$. Note that those equilibria maximize V's welfare, at the policymaking stage. We focus on full accountability equilibria, whenever available. When they are absent, we choose equilibria 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). More importantly, 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.

2.2 Analysis

2.2.1 Policymaking

We solve the game by backward induction, starting 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. 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 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* $v(L) = u\phi + E$.

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.[10]

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 $\sigma = 1 - \frac{1-\pi}{\pi(1-\phi)+(1-\pi)\phi}$. 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. 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 final thing 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 behaviour of high human capital politicians (they keep following the signal).

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

[10] Note: there is at least another equilibrium that is welfare-equivalent from V's perspective, and for the "selection" analysis this choice is not wlog.

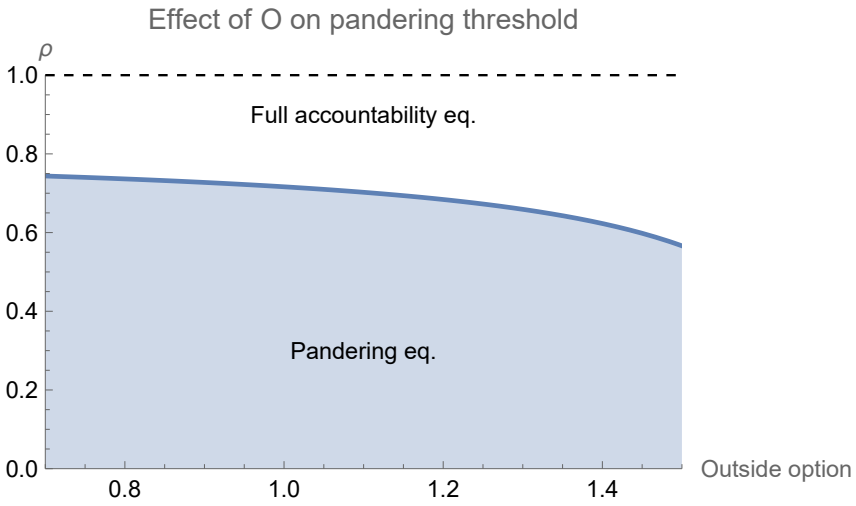


Figure 1: Values of ρ where the full accountability or the pandering equilibrium exists, as a function of O.

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

$$Pr(run|\phi_P) = \frac{1}{2} - \frac{\psi}{2}\left(Eu^P(mkt|\phi_P) - Eu^P(pol|\phi_P)\right)$$

Finally, note that

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

As $O > w(\phi_L)$, so a not re-elected L politician chooses O. A H politician chooses O if $O > w(1)$ and the private sector salary otherwise. $Eu^P(pol|\phi)$ 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, $\frac{\partial Eu^P(pol|\phi_L)}{\partial O} > Max[\frac{\partial Eu^P(pol|\phi_H)}{\partial O}, 0]$. In other words, the direct effect of O is always stronger for low h.c. politicians.[11] They are more likely to choose the PCO (high h.c. politicians may prefer the private market, when $O < w(1)$) and, at least in perfect accountability equilibria, they are always more likely to need it, because they are more likely

[11]Together with the first effect of making a political career more attractive, O has also a second effect going trough 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.

to lose office. However, this is not always enough to cause a negative effect of O on κ, because it may be that $Pr(run|\phi_L) > Pr(run|\phi_H)$. Proposition 2 shows the existence of a sufficient condition for the direct effect to always dominate the "level effect".

Proposition 2 *There exists a sufficiently small ψ such that $\frac{\partial \kappa}{\partial O} < 0$.*

It is important to stress that Proposition 2 shows the existence of a sufficient condition, but weaker conditions (or even conditions that do not depend on ψ) can also be found. Second, 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 trough re-election probabilities. Finally, 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 *There exists a sufficiently small ψ such that $\frac{\partial \kappa}{\partial E} > 0$.*

The intuition is exactly the opposite. E has a positive direct effect on $Eu^P(pol)$ for both types, but it is stronger for high h.c. types that, among other things, are more likely to remain in office in a full accountability equilibrium. Figures 2 and 2 show the effect on κ of O and E.

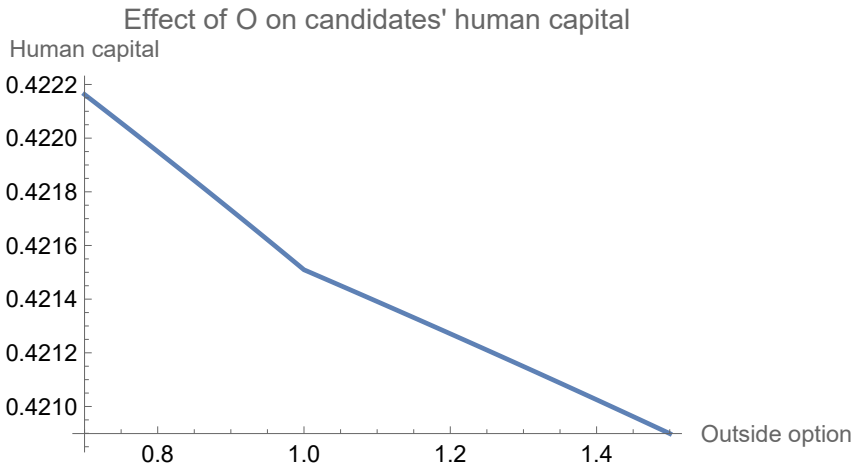


Figure 2: Effect of O on κ.

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.

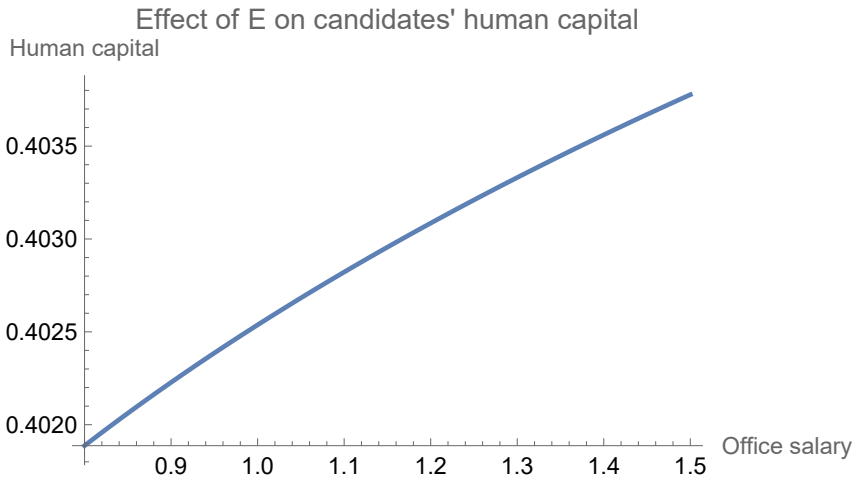


Figure 3: Effect of E on κ.

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 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 consider one of the decrees composing the so called "Legge Severino" (d.l. 8th April 2013 number 39), which introduced a series of anti-corruption measures, applied to the whole spectrum of municipalities. On top of that, it introduced "cooling off" periods for mayors, members of the municipal executive and members of the municipal council for municipalities above 15,000 inhabitants. More in details, they have to wait one year after the end of their political term in office before they can take leading positions in the bureaucracy or in publicly owned enterprises controlled the regional administration, provincial administrations or municipalities with

a population bigger than 15,000 inhabitants within the same region where their municipality is located (art. 7). The cooling off period is extended to two years if the public entity controlling the publicly owned enterprise is the same municipality where they served. Furthermore, they have to wait for two years before they can be appointed as director of the "local health authority" ("azienda sanitaria locale") whose area of responsibility includes their municipality (art. 8). Furthermore, the law mandates that current mayors, executive members, and council members of municipalities whose population is above 15,000 inhabitants cannot be appointed to leading positions in State owned enterprises controlled by regional, provincial governments, or large municipalities within the same region, or to leading positions in the bureaucracy or health authorities. Politicians already serving in large municipalities and holding leading positions in State owned enterprises or in the bureaucracy or in health authorities within the same region must choose between the two roles. Importantly, it applies to politicians already in office in 2013 (artt. 12-14). ANAC (Anti-corruption authority), AGCOM (Anti-trust authority) and Corte dei Conti 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.[12] 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 4.3% of the total number of employees for industry and services (Istat, 2024a).

41% of all the SOEs are controlled by local governments (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.

[12]See: `https://www.ansa.it/sito/notizie/economia/2023/12/14/borsa-partecipate-statali-pesano-30-della-capitali 36d76117-dde2-433a-964d-3797c112fe0d.html`.

4 Empirical Evidence

4.1 Empirical strategy

We use Italian municipality-level data for 1993-2019 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' board 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, 2023):

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

where Y_{it} is our outcome variable (candidates and elected mayors' education, the probability that a politician holds executive positions in a SOE, 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. Our assessment of this assumption is documented in Figure 5, where we illustrate the absence of any discontinuity in R_{it} at the 15,000-inhabitant threshold. The second assumption pertains to the necessity of balance in other potential outcomes and municipal characteristics around the threshold before and after 2013. This entails an examination of whether various factors, aside from the running variable, exhibit disparities on either side of the threshold. To scrutinize this assumption, we employ model (2) with municipal characteristics as dependent variables. We present the outcomes of this analysis in Table 4, which reveals that municipal and geographical characteristics are balanced across the threshold. The third assumption stipulates that municipalities positioned just below and just above the 15,000-inhabitant threshold should follow parallel trends leading up to the 2013 reform. This parallel trend assumption, a common requirement in difference-in-differences analyses, is tested in Table 3, showing no evidence of pre-trends. Additional robustness tests are discussed in Section 4.3.3.

4.2 Data

To study the political effects of anti-revolving door policies we combine several datasets. We have municipality-level data for the period 1993-2022, organized by election year (i.e. one observation every 5 years per municipality) or by year. Those datasets include information on socio-demographic variables (from ISTAT), electoral results (from the Ministry of Interior), waste collection (from the "Catasto rifiuti"), balance sheet (from Aida PA) and revenues coming from the local add-on on the national income tax ("addizionale Irpef", from the Ministery of Economics and Finance). On top of this, we have individual level information on elected politicians and candidate mayors, which include demographics, education, occupational experience and political career (from the "Anagrafe degli amministratori locali").

Finally, 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). At the moment, we are including all the positions available in the Aida archives. Roughly half of the observations are members of the board, but we have also may CEOs, presidents of the board, general directors,

statutory auditors ("sindaco") and authorized signatories ("procuratore"). It is unclear, from the letter of the law, which of those positions is actually affected. This dataset is at the person x firm x year x position level, with a total of almost 700,000 observations. It includes names, positions, years the position was hold 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.

4.3 Main results

4.3.1 Nomination in State-owned companies

Our first outcome variable is, in a sense, a test on the effectiveness of the reform. In fact, we study the probability that a mayor is appointed in a firm where the State owns shares, during or after its mandate. To measure this outcome, we match the list of mayors with the list of people holding leading positions in either a State-owned enterprise (SOE) or an enterprise where the State owns a minority of the shares (a "public minority share of ownership", PMSE). To define them, 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.[13] 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. Our outcome variable is equal to 1 if a mayor begins holding a leading position in a SOE or in a PMSE during or one year after his or her mandate. Note that the Severino law applies to SOE, and not to PMSE, hence we should observe an effect only in the former.

Table 1 reports the results of a diff-in-disc estimation, using observation at municipality x election 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). The probability that a mayor holds a leading position in a SOE decreases, because of the reform, by 14 percentage points. The effect on PMSE is much smaller and, importantly, not statistically different from zero.

[13] More in details, the Ministery 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 explicitely 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.

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

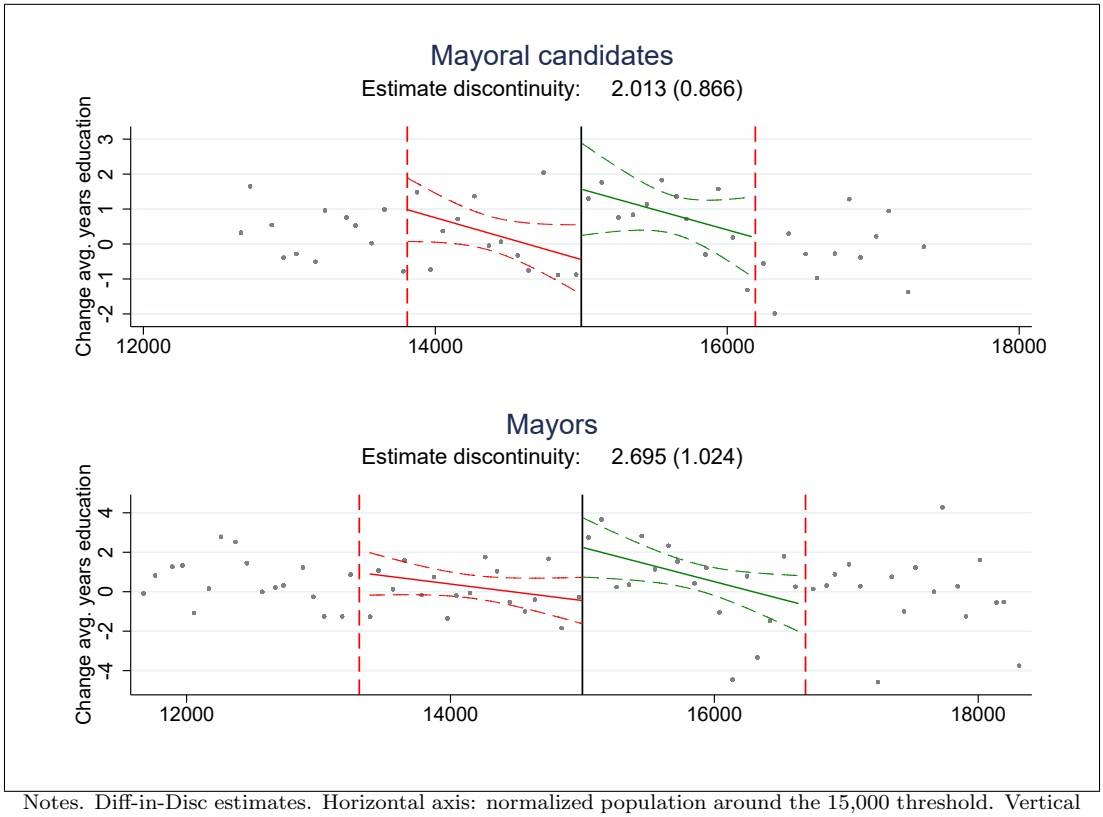
	(1)	(2)
Dep. Var.	=1 appointed in SOE	=1 appointed in PMSE
Control Function	Linear	Linear
Bandwidth	CCT	CCT
Controls	No	No
(Post)*(> 15000)	-0.140**	-0.050
	(0.065)	(0.041)
Observations	1,154	1,242
R-squared	0.037	0.037
Bandwidth	1340	1490
Mean outcome	0.0617	0.00954

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). Original sample: municipalities between 10,000 and 30,000 inhabitants. Electoral terms between 1993 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; 3) (Post)*(> 15000) = interaction term between (> 15000) and Post. 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 ***.

4.3.2 Selection of politicians

Using the difference-in-discontinuity approach described above, we show that the anti-revolving doors policy increases the average education of mayoral candidates, consistently with the prediction of the model. We report the results of the difference-in-discontinuity analysis in Table 2 and Figure 4. Specifically, Table 2 and Figure 4 provide evidence that, in municipalities just above the 15,000 thresholds compared to municipalities just below the cutoff, the anti-revolving door policy led to an increase in the average years of education of mayoral candidates. The coefficient of interest, in both columns, is the interaction between Post and (> 15000), capturing the effect of the reform just around the relevant population threshold. As the outcome variable is the average years of education of mayoral candidates, measured at municipality level, those coefficients imply an increase of about 2 years. This is approximately a 13% increase, given the average of 15 years of education. This peace of evidence confirms the model's prediction, i.e., the elimination of PCO reduces the expected value of holding office relatively more for candidates of lower human capital, thus improving the share of high-human capital candidates. A similar effect translates into the average education of elected mayors.

Figure 4: Diff-in-Disc graphical evidence



Notes. Diff-in-Disc estimates. Horizontal axis: normalized 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 black line represents a split linear polynomial of the outcome variable in the normalized population, fitted separately on each side of the threshold. The estimated discontinuity is the (Post)*(> 15000) coefficient and the standard error as reported in Table 2.

Table 2: 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)	-1.392**	-1.962***
	(0.587)	(0.661)
(Post)	-0.444	-0.446
	(0.507)	(0.601)
(Post)*(> 15000)	2.013**	2.695***
	(0.866)	(1.024)
Observations	716	954
Bandwidth	1192	1691
Mean outcome	15.53	15.80

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. Electoral terms between 1993 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; 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 ***.

4.3.3 Robustness

Our findings are robust to a series of checks. First, as the diff-in-disc requires the same assumptions as difference-in-differences and regression discontinuity designs, we use table 3 to check for pre-trends. Formally, we interact the $(> 15,000)$ variable with dummies equal to 1 two, three and four electoral cycles before the one following the reform (i.e. the first one after year 2013). We keep the electoral cycle immediately before the reform as benchmark year and show that none of the "pre" coefficients is statistically significant, showing the absence of pre-trends.

Second, we use table 4 to show that pre-determined covariates (measured before the policy chance of 2013) are balanced at the 15,000 inhabitants threshold. To do so, we run the diff-in-disc using those covariates as outcome variables. In none of the columns we fund a significant coefficient, hence we have no evidence of other covariates jumping at the same population threshold we use.

Third, Figure 5 shows that the running variable is continuous at the 15,000 inhabitants threshold, thus there are no evidence of manipulation. In particular, Figure 5 plots an histogram with the density of the running variable and test 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

Table 3: Anti-revolving doors and selection: absence of pre-trends

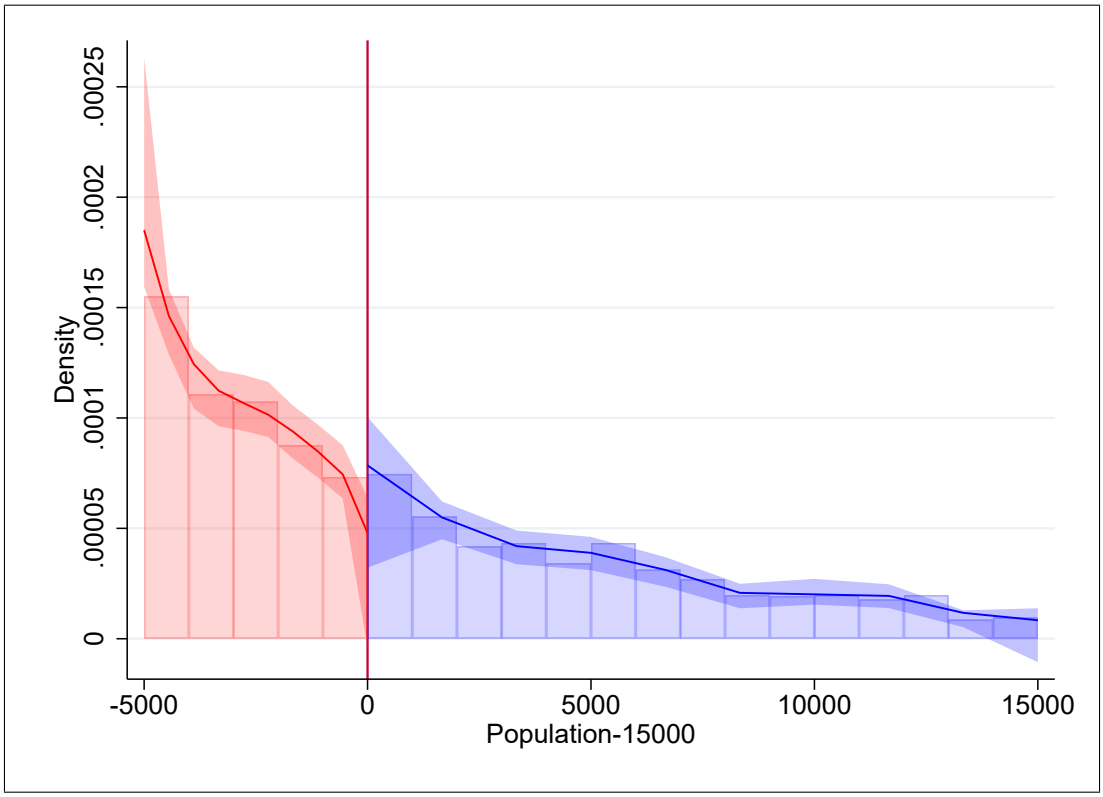
	(1)	(2)
Dep. Var.	Average years education mayoral candidates	Average years education elected mayor
Control Function	Linear	Linear
Bandwidth	CCT	CCT
Controls	No	No
(Pre -4)*(> 15000)	-0.802	-1.118
	(1.428)	(1.357)
(Pre -3)*(> 15000)	0.676	0.076
	(1.374)	(1.414)
(Pre -2)*(> 15000)	0.395	1.180
	(0.828)	(1.017)
(Post 0)*(> 15000)	1.499	2.499*
	(1.129)	(1.419)
(Post 1)*(> 15000)	2.637**	2.970**
	(1.257)	(1.320)
Observations	716	954
Bandwidth	1192	1691
Mean outcome	15.53	15.80

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. Electoral terms between 1993 and 2022. Variables in the Table: 1) (> 15000) = 1 for municipalities with more than 15,000 inhabitants; 2) (Post 0) and (Post 1) are = 1 for electoral terms starting from 2013; 3) (Pre -2), (Pre - 3), and (Pre -4) are =1 for electoral terms before 2013, while (Pre -1) is excluded as default category. 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 ***.

discontinuity (p-value 0.141).

Fourth, in Table 5, we repeat the analysis excluding Five Star Movement (M5S) candidates. This is because the Five Star Movement became prominent in Italy roughly at the same time: they got 25.56% at the 2013 parliamentary elections, while being virtually non-existent in 2008. Furthermore, it has been shown that, locally, they tend to perform better in places with a run-off electoral system, hence in municipalities above 15,000 inhabitants (Bordignon and Colussi, 2020). It is therefore possible that the prominence of M5S interacts with the may we define the treatment group, both across time and space. To show that our results are not driven by this, Table 5 shows that the baseline results of our analysis are robust to the exclusion of all the candidates of this political party.

Figure 5: Density of the running variable



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

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)	0.017	-0.010	0.016	-995.719	-0.001	0.008	-0.011	-0.781	0.754
	(0.027)	(0.009)	(0.017)	(1,565.782)	(0.001)	(0.009)	(0.014)	(1.015)	(1.196)
Observations	877	1,195	970	797	1,184	813	1,256	854	1,227
Bandwidth	1300	1836	1476	1176	1771	1199	1886	1269	1819
Mean outcome	0.107	0.0878	0.0665	13058	0.00485	0.145	0.196	43.51	12.36

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; 3) (Post)*(> 15000) = interaction term between (> 15000) and Post. 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 ***.

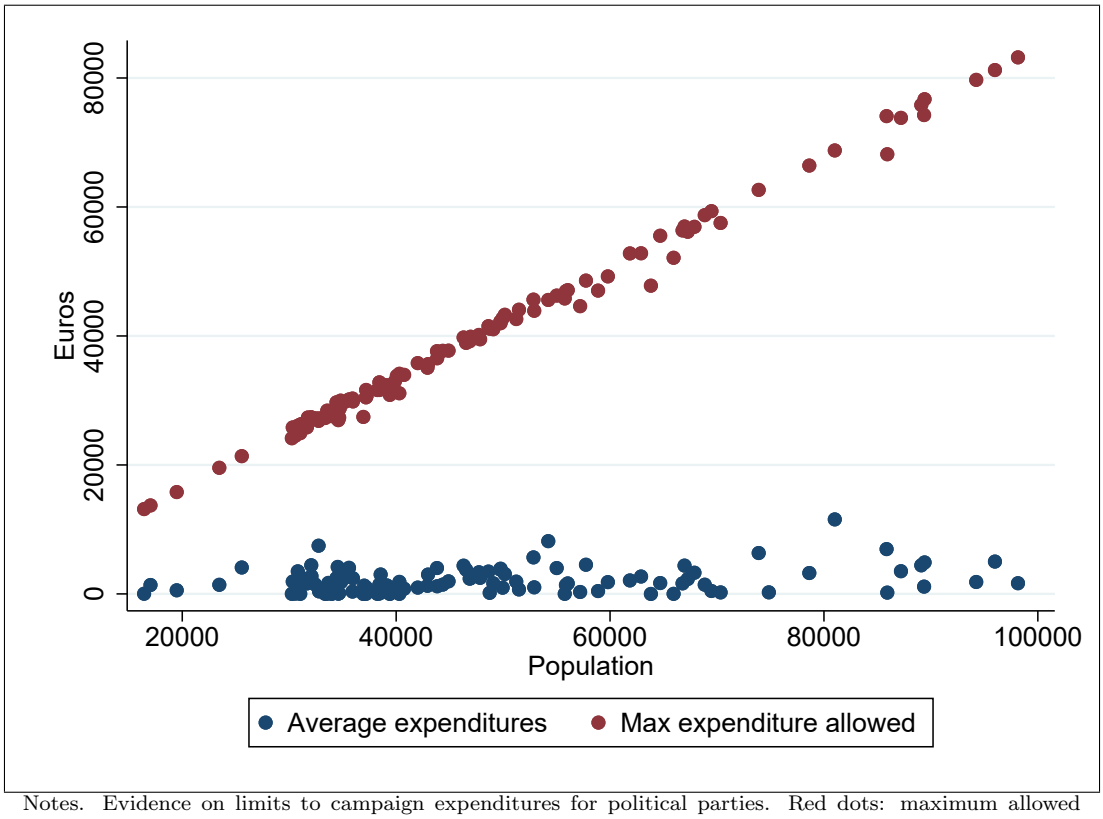
Table 5: The effect of anti-revolving door policy on the education of politicians
Excluding Five Star candidates

	(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)	-1.289**	-1.923***
	(0.629)	(0.663)
(Post)	-0.140	-0.407
	(0.557)	(0.603)
(Post)*(> 15000)	1.590*	2.621**
	(0.928)	(1.026)
Observations	648	953
Bandwidth	1097	1695
Mean outcome	15.59	15.81

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 1993 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; 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 ***.

Fifth, in Figure 6, we show that the legal limits imposed to campaign expenditures in municipalities above 15,000 are quite high and never binding if compared to average expenditures by political parties and lists. Those limits[14] have been introduced by article 13 of the law number 96 on the 6th of July 2012, hence they overlap both in space and time with our reform. To show that this other reform is unlikely to be important for our results, we digitized list-level expenditures for the sample of municipal elections available on the "Corte dei Conti"[15] website.[16] We then plot the average expenditure per list in every municipality against the maximum sum allowed, showing that the two numbers are very far from each other. Hence, the introduction of a spending limit is unlikely to be important for our result.

Figure 6: Campaign expenditures



Notes. Evidence on limits to campaign expenditures for political parties. Red dots: maximum allowed expenditures per list in a given municipality. Blue dots: average expenditures.

4.3.4 Performance of mayors

Exploiting the fact that the law applies to local politicians already in charge in 2013, and the staggered nature of Italian local elections, we can also see the effect of the cooling off period

[14] Basically, an amount of money proportional to the total number of voters in a municipality

[15] The Italian court of justice responsible for monitoring expenditures from the public sector, including local and national government. In particular, they monitor the respect of those spending limits in municipalities above 30,000 inhabitants.

[16] The website is `banchedati.corteconti.it`. We searched for "rendicontazione spese elettorali comunali + legge 96 del 2012 + 30.000 abitanti" downloading all the documents in the search.

on the in-office performance of mayors elected before 2013, hence before the selection effect can kick in. As an outcome, we first use the efficiency of waste management, measured by the percentage of separate waste collection. This variable has several advantages: first, it involves a clear policymaking trade off: more separate waste implies a more eco-friendly and perhaps more efficient policy, but it also complicates the waste management and may be perceived as more complicated and more time-consuming by the citizens. Furthermore, the responsibility for waste management is clearly in the hands of the mayor and the municipal council. As a consequence, choosing a policy more recycling-oriented may alienate some voters. Secondly, we use per capita revenues from the local add-on on the national income tax. This tax rate is decided at the local level. As a consequence, mayors can use that lever to increase or reduce local taxes. Mayors more scared about losing office may be more tempted to cut taxes, in order to win voters and maximize the chances of victory.

For this analysis we use municipality x year data, as we want to exploit differences within the same mandate. Furthermore, we limit our sample to mayors elected before 2013 and whose mandate ends after 2013, so that we can have both pre and post periods for the same mayor. Using the percentage of recycled waste in a given municipality in a given year and the per capita revenues from the local income tax as our outcome variables, we run a diff-in-disc model similar to (2).

Consistently with the logic of the model, Table 6 shows that the introduction of cooling off periods affects the policymaking of low human capital politicians only, as the reduced value of their outside option is more important for them. And, consistently with the pandering literature (Maskin and Tirole, 2004; Besley, 2006; Merzoni and Trombetta, 2022), they choose the strategy that is less likely to alienate voters.

Table 6 presents the analysis in three columns: column (1) represents the results for all mayors, column (2) shows the results for graduate mayors only, and column (3) shows the results for non-graduate mayors only. For each category, the table presents the impact of the policy on municipalities of different sizes and before and after the policy implementation, denoted by the "Post" variable. The variable (> 15000) refers to municipalities with more than 15,000 inhabitants, while the "Post" variable is a binary variable indicating whether the year is before or after the policy implementation in 2013. The interaction term "Post*(> 15000)" captures the differential effect of the policy on larger municipalities post-implementation. As the policy applies only to municipalities above the threshold, this captures the causal effect of introducing a cooling off period.

In column (1), the results suggest that for all mayors, the anti-revolving door policy had no statistically significant effect on the percentage of separate waste collection. The same is true for graduate mayors (column 2). However, for non-graduate mayors (column 3), the policy

change has a significant effect on the percentage of separate waste collection. The interaction term (Post)*(> 15000) has a negative coefficient and is statistically significant at the 5% level, suggesting that the introduction of cooling off periods decreased separate waste collection rates by around 34.616 percentage points in larger municipalities led by non-graduate mayors, post-2013.

Table 6: The effect of anti-revolving door policy on the performance of mayors
Separate Waste Collection

	(1)	(2)	(3)
Dep. Var.	Separate waste collection All sample	Separate waste collection Graduate mayors	Separate waste collection Non-graduate mayors
Control Function	Linear	Linear	Linear
Bandwidth	CCT	CCT	CCT
Controls	No	No	No
(> 15000)	-8.115	-13.861	21.635
	(9.524)	(8.956)	(13.244)
(Post)	6.166	4.788	29.636**
	(8.738)	(8.052)	(13.394)
(Post)*(> 15000)	6.265	10.705	-34.616**
	(11.544)	(10.582)	(16.632)
Observations	494	439	236
Bandwidth	1123	1875	1245
Mean outcome	51.54	48.72	55.59

Notes. Diff-in-disc estimates of the impact of anti-revolving door on the performance of mayors. Original sample: municipalities between 10,000 and 30,000 inhabitants. Electoral years between 1993 and 2022. Variables in the Table: 1) (> 15000) = 1 for municipalities with more than 15,000 inhabitants; 2) (Post) = 1 for years starting from 2013; 3) (Post)*(> 15000) = interaction term between (> 15000) and Post. The outcome variable is the percentage of separate waste collection. Samples: 1) all sample in column 1; 2) only graduate mayors in column 2; c) only 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 ***.

Table 7 shows similar results: the introduction of cooling off periods implies a general reduction in local income tax (column 1), which is driven almost entirely by low human capital mayors (column 3).

More in details, as before column (1) represents the results for all mayors, column (2) shows the results for graduate mayors only, and column (3) shows the results for non-graduate mayors only. The interaction term "Post*(> 15000)" captures the differential effect of the policy on larger municipalities post-implementation, hence the causal effect of cooling off period on the local income tax.

In column (1), the results suggest that the anti-revolving door policies cause a statistically significant reduction in per capita revenues from the local income tax, consistent with the idea that mayors are tempted to implement a tax reduction in order to secure their position. When we run the analysis for graduate (column 2) and non graduate (column 3) mayors separately, however, it becomes clear that the effect is driven by the latter. The interaction coefficient is not statistically significant, probably because of the reduced sample size, but direction and magnitude are pretty clear. Once again, this is consistent with the logic of the model: the reduction in value of the politically-connected outside option has a stronger effect on low human

capital politicians, hence they tend to react in a stronger way.

Table 7: The effect of anti-revolving door policy on the performance of mayors
Income tax

	(1)	(2)	(3)
Dep. Var.	Income tax All sample	Income tax Graduate mayors	Income tax Non-graduate mayors
Control Function	Linear	Linear	Linear
Bandwidth	CCT	CCT	CCT
Controls	No	No	No
(> 15000)	-8.463	-19.222	-10.822
	(13.384)	(11.884)	(36.185)
(Post)	35.837**	20.467	35.213
	(14.668)	(13.449)	(37.271)
(Post)*(> 15000)	-36.570**	-2.273	-45.677
	(18.441)	(17.569)	(41.742)
Observations	399	350	191
Bandwidth	861.2	1323	893.7
Mean outcome	70.47	67.71	71.31

Notes. Diff-in-disc estimates of the impact of anti-revolving door on the performance of mayors. Original sample: municipalities between 10,000 and 30,000 inhabitants. Electoral years between 1993 and 2022. Variables in the Table: 1) (> 15000) = 1 for municipalities with more than 15,000 inhabitants; 2) (Post) = 1 for years starting from 2013; 3) (Post)*(> 15000) = interaction term between (> 15000) and Post. The outcome variable is the per capita revenues from the municipal surcharge on to the income tax (Addizionale Irpef). Samples: 1) all sample in column 1; 2) only graduate mayors in column 2; c) only 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 ***.

5 Conclusion

Our paper studies how anti-revolving door policies affect political selection and in-office performance. 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 when they may be suboptimal.

We believe those 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. Furthermore, they 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.

In the next steps of the project, we plan to analyze if the policy affected the career of politicians, given that the cooling-off period may have induced them to look for alternative career opportunities in political offices at higher levels, such as regions and the national and European parliaments. Moreover, we want to dig deeper into the new data on politicians holding top positions in SOEs and PMSEs, exploiting the time-varying dimension of State control and the

geographic limits of the application of the Severino law. Exploiting the fact that the application of the law is limited to State-owned enterprises and bureaucratic positions belonging to the same region of the municipality where the politicians held office, we will look for the presence of spillover effects across regions. Specifically, politicians may attempt to enter the board of State-owned enterprises outside their region of residence due to the geographical limitation of the law.

Finally, it would be important to expand the scope of the inquiry, looking at different anti-revolving door policies and different political environments. 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 chance 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 it would be interesting to study whether policies that shut down the revolving doors toward private sector jobs for highly educated individuals obtain the opposite effect in terms of political selection.

References

Akcigit, U., S. Baslandze, and F. Lotti (2023). Connecting to power: political connections, innovation, and firm dynamics. *Econometrica 91*(2), 529–564.

Akhtari, M., D. Moreira, and L. Trucco (2022). Political Turnover, Bureaucratic Turnover, and the Quality of Public Services. *American Economic Review 112*, 442–493.

Ashworth, S. and E. B. De Mesquita (2014). Is voter competence good for voters?: Information, rationality, and democratic performance. *American Political Science Review 108*(3), 565–587.

Ashworth, S. and K. W. Shotts (2010). Does informative media commentary reduce politicians' incentives to pander? *Journal of Public Economics 94*(11-12), 838–847.

Auerbach, J. (2022). Productive office and political elitism.

Baltrunaite, A., M. Cannella, S. Mocetti, and G. Roma (2021). Board Composition and Performance of State-owned Enterprises: Quasi-experimental Evidence. *SSRN Electronic Journal*.

Bartlett, W. (2023, May). The performance of politically connected firms in South East Europe: state capture or business capture? *Post-Communist Economies 35*(4), 351–367.

Bellodi, L., M. Morelli, and M. Vannoni (2022). A costly commitment: Populism, economic performance, and the quality of bureaucracy. *American Journal of Political Science*.

Bertrand, M., M. Bombardini, and F. Trebbi (2014). Is it whom you know or what you know? an empirical assessment of the lobbying process. *American Economic Review 104*(12), 3885–3920.

Besley, T. (2004). Paying politicians: theory and evidence. *Journal of the European Economic Association 2*(2-3), 193–215.

Besley, T. (2006). *Principled agents?: The political economy of good government*. Oxford University Press on Demand.

Besley, T., J. G. Montalvo, and M. Reynal-Querol (2011). Do educated leaders matter? *The Economic Journal 121*(554), F205–227.

Besley, T. and M. Reynal-Querol (2011). Do democracies select more educated leaders? *American political science review 105*(3), 552–566.

Besley, T. J., R. Burgess, A. Khan, and G. Xu (2021). Bureaucracy and Development.

Bils, P. and G. Judd (2020). Working for the revolving door.

Blanes i Vidal, J., M. Draca, and C. Fons-Rosen (2012, December). Revolving Door Lobbyists. *American Economic Review 102*(7), 3731–3748.

Boffa, F., V. Mollisi, and G. A. Ponzetto (2023). Do incompetent politicians breed populist voters?: evidence from italian municipalities.

Bordignon, M. and T. Colussi (2020). Dancing with the populist. new parties, electoral rules and italian municipal elections.

Brassiolo, P., R. Estrada, and G. Fajardo (2020). My (running) mate, the mayor: Political ties and access to public sector jobs in Ecuador. *Journal of Public Economics 191*, 104286.

Broso, M. (2023). Privatization under political ties.

Calonico, S., M. D. Cattaneo, and M. H. Farrell (2018). On the effect of bias estimation on coverage accuracy in nonparametric inference. *Journal of the American Statistical Association 113*(522), 767–779.

Calonico, S., M. D. Cattaneo, and R. Titiunik (2014). Robust nonparametric bias corrected inference in the regression discontinuity design. *Econometrica 82*(6), 2285–2396.

Canes-Wrone, B., M. C. Herron, and K. W. Shotts (2001). Leadership and pandering: A theory of executive policymaking. *American Journal of Political Science*, 532–550.

Carnes, N. and N. Lupu (2016). What good is a college degree? education and leader quality reconsidered. *The Journal of Politics 78*(1), 35–49.

Carreri, M. (2021). Can good politicians compensate for bad institutions? evidence from an original survey of italian mayors. *The Journal of Politics 83*(4), 1229–1245.

Caselli, F. and M. Morelli (2004). Bad politicians. *Journal of public economics 88*(3-4), 759–782.

Casey, K., A. B. Kamara, and N. F. Meriggi (2021). An experiment in candidate selection. *American Economic Review 111*(5), 1575–1612.

Cattaneo, M. D., M. Jansson, and X. Ma (2018). Manipulation testing based on density discontinuity. *The Stata Journal 18*(1), 234–261.

Cingano, F. and P. Pinotti (2013, April). Politicians at work: the private returns and social costs of political connections. *Journal of the European Economic Association 11*(2), 433–465.

Colonnelli, E., M. Prem, and E. Teso (2020, October). Patronage and Selection in Public Sector Organizations. *American Economic Review 110*(10), 3071–3099.

Dal Bó, E. and F. Finan (2018). Progress and perspectives in the study of political selection. *Annual Review of Economics 10*, 541–575.

De Angelis, I., G. de Blasio, and L. Rizzica (2020, July). Lost in Corruption. Evidence from EU Funding to Southern Italy. *Italian Economic Journal 6*(2), 355–377.

de Blasio, G., A. D'Ignazio, and M. Letta (2020). Predicting Corruption Crimes with Machine Learning. A Study for the Italian Municipalities.

Diegmann, A., L. Pohlan, and A. Weber (2024). Do politicians affect firm outcomes? evidence from connections to the german federal parliament.

Diermeier, D., M. Keane, and A. Merlo (2005). A political economy model of congressional careers. *American Economic Review 95*(1), 347–373.

Egerod, B. C. K. (2022, October). The lure of the private sector: career prospects affect selection out of Congress. *Political Science Research and Methods 10*(4), 722–738.

Eggers, A. C. and J. Hainmueller (2009). Mps for sale? returns to office in postwar british politics. *American Political Science Review 103*(4), 513–533.

Fiorina, M. P. (1994). Divided government in the american states: A byproduct of legislative professionalism? *American Political Science Review 88*(2), 304–316.

Fisman, R., F. Schulz, and V. Vig (2014, August). The Private Returns to Public Office. *Journal of Political Economy 122*(4), 806–862.

Gagliarducci, S. and T. Nannicini (2013). Do better paid politicians perform better? disentangling incentives from selection. *Journal of the European Economic Association 11*(2), 369–398.

Gailmard, S. and J. W. Patty (2007). Slackers and zealots: Civil service, policy discretion, and bureaucratic expertise. *American Journal of Political Science 51*(4), 873–889.

Galasso, V. and T. Nannicini (2011). Competing on good politicians. *American political science review 105*(1), 79–99.

Gamalerio, M. and F. Trombetta (2023). Fiscal rules and the selection of politicians: theory and evidence from italy. *American Economic Journal: Economic Policy, conditionally accepted*.

Gelman, A. and G. Imbens (2018). Why high-order polynomials should not be used in regression discontinuity designs. *ournal of Business & Economic Statistics*.

Golden, M., E. Nazrullaeva, and D. Potts (2022). Effects on Reelection Rates of the Introduction of Merit Civil Service Appointments in U.S. States.

Gratton, G., L. Guiso, C. Michelacci, and M. Morelli (2021). From weber to kafka: Political instability and the overproduction of laws. *American Economic Review 111*(9), 2964–3003.

Gratton, G. and B. E. Lee (2023). Drain the swamp: A theory of anti-elite populism.

Green, C. P. and S. Homroy (2022). Incorporated in westminster: Channels and returns to political connection in the united kingdom. *Economica 89*(354), 377–408.

Grembi, V., T. Nannicini, and U. Troiano (2016). Do fiscal rules matter? *American Economic Journal: Applied Economics*, 1–30.

Groseclose, T. and K. Krehbiel (1994). Golden parachutes, rubber checks, and strategic retirements from the 102d house. *American Journal of Political Science*, 75–99.

Gulzar, S. (2021). Who enters politics and why? *Annual Review of Political Science 24*, 253–275.

Hall, A. B. (2019). *Who wants to run?: How the devaluing of political office drives polarization*. University of Chicago Press.

Hall, R. L. and R. P. Van Houweling (1995). Avarice and ambition in congress: Representatives' decisions to run or retire from the us house. *American Political Science Review 89*(1), 121–136.

Istat (2024a). Conti economici delle imprese e dei gruppi di impresa. Technical report, Istituto Nazionale di Statistica. Report for the year 2021.

Istat (2024b). Le partecipate pubbliche in italia: Anno 2021. Technical report, Istituto Nazionale di Statistica. Report for the year 2021.

Keane, M. P. and A. Merlo (2010). Money, political ambition, and the career decisions of politicians. *American Economic Journal: Microeconomics 2*(3), 186–215.

Laffont, J.-J. and J. Tirole (1991). The politics of government decision-making: A theory of regulatory capture. *The quarterly journal of economics 106*(4), 1089–1127.

Li, C., G. Sasso, and I. R. Turner (2023). Managing government hierarchy: Electoral turnover and intra-governmental cooperation. *Available at SSRN 4445588*.

Luechinger, S. and C. Moser (2020, August). The European Commission and the revolving door. *European Economic Review 127*, 103461.

Martinez-Bravo, M., P. Mukherjee, and A. Stegmann (2017). The Non-Democratic Roots of Elite Capture: Evidence From Soeharto Mayors in Indonesia. *Econometrica 85*(6), 1991–2010.

Maskin, E. and J. Tirole (2004). The politician and the judge: Accountability in government. *American Economic Review 94*(4), 1034–1054.

Mattozzi, A. and A. Merlo (2008, April). Political careers or career politicians? *Journal of Public Economics 92*(3-4), 597–608.

McCrain, J. (2018, October). Revolving Door Lobbyists and the Value of Congressional Staff Connections. *The Journal of Politics 80*(4), 1369–1383.

Meriläinen, J. (2022). Political selection and economic policy. *The Economic Journal 132*(648), 3020–3046.

Merzoni, G. and F. Trombetta (2022). Pandering and state-specific costs of mismatch in political agency. *Games and Economic Behavior 135*, 132–143.

Mocetti, S. and T. Orlando (2019, December). Corruption, workforce selection and mismatch in the public sector. *European Journal of Political Economy 60*, 101809.

Palmer, M. and B. Schneer (2016). Capitol gains: the returns to elected office from corporate board directorships. *The Journal of Politics 78*(1), 181–196.

Riaño, J. F. (2021). Bureaucratic Nepotism. *SSRN Electronic Journal*.

Sasso, G. and M. Morelli (2021). Bureaucrats under populism. *Journal of Public Economics 202*, 104497.

Shepherd, M. E. and H. Y. You (2020, February). Exit Strategy: Career Concerns and Revolving Doors in Congress. *American Political Science Review 114*(1), 270–284.

Shleifer, A. and R. W. Vishny (1994). Politicians and firms. *The quarterly journal of economics 109*(4), 995–1025.

Snowberg, E. and M. Ting (2019). An organizational theory of state capacity. *NBER Working Paper*.

Sørensen, R. J. (2023). Educated politicians and government efficiency: Evidence from norwegian local government. *Journal of Economic Behavior & Organization 210*, 163–179.

Stigler, G. J. (1971). The theory of economic regulation. *The Bell journal of economics and management science*, 3–21.

Turner, I. R. (2019). Political agency, oversight, and bias: the instrumental value of politicized policymaking. *The Journal of Law, Economics, and Organization 35*(3), 544–578.

Weschle, S. (2022, September). Politicians' Private Sector Jobs and Parliamentary Behavior. *American Journal of Political Science*, ajps.12721.

Wolton, S. et al. (2021). Lobbying, inside and out: How special interest groups influence policy choices. *Quarterly Journal of Political Science 16*(4), 467–503.

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:

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

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

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

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

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

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

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

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

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

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 ΔEu_L^P is negative), the H type must prefer it as well. To see this, note

that

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

where the second line follows from the fact that $v(H) - max[O, w(1)] - v(L) + O = (1-\phi)u - (max[O, w(1)] - O)$ 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

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

Since $max[O, w(1)] - O$ is weakly positive, a sufficient condition for $RHS(\rho = 0) > 0$ is

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

that is always verified because $\pi > 0.5$. Therefore, $RHS(\rho = 0) > 0$. Furthermore, we show that

$$\begin{aligned}\frac{\partial RHS(\rho)}{\partial \rho} &= 2\lambda_B(v(L) - O) + 2(v(H) - max[O, w(1)] - v(L) + O) \\ &> 0\end{aligned}$$

therefore, $\Delta Eu_L^P - \Delta Eu_H^P > 0$. ■

Proof of Lemma 2. Suppose a perfect accountability equilibrium exists. Then, note that in every perfect accountability equilibrium, $Pr(\phi_P = H | x = A) = \frac{\kappa\pi}{\kappa\pi + (1-\kappa)(\pi\phi + (1-\pi)(1-\phi))} > \kappa$ and $Pr(\phi_P = H | x = B) = \frac{\kappa(1-\pi)}{\kappa(1-\pi) + (1-\kappa)((1-\pi)\phi + \pi(1-\phi))} < \kappa$. Therefore, $r_A = 1$ and $r_B = 0$. Finally, a perfect accountability equilibrium requires $\Delta Eu_L^P \leq 0$. 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. ■

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 $\Delta E u_L^P = 0$. 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 $\hat{\kappa}(x = B) = \frac{(1-\pi)\kappa}{(1-\pi)\kappa+(1-\kappa)(\pi(1-\phi)+(1-\pi)\phi)(1-\sigma)} = \kappa$. Therefore, it must be that

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

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, 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, perspective candidates anticipate the type of equilibrium that will be in place First, consider the pandering

equilibrium. We calculate the expected utility from a political office for both types.

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

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:

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

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

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

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 $\phi_H > O$, the condition is satisfied. Suppose instead that $\frac{\partial \mathbb{E}u^P(pol|\phi_H)}{\partial O}$ is positive. In this case, we have

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

The sigh 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 and so there exists a sufficiently small ψ such that the inequality is satisfied.

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

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

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

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

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

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

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

$$\frac{\partial \mathbb{E}u^P(pol|\phi_H, w(\phi_H) > O)}{\partial O} = 0$$

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:

$$\pi + \phi - 2\pi\phi - (1-\pi)(2\phi-1)\rho > (1-\pi)(1-\rho)$$
$$\pi(1-\phi) + (1-\pi)\phi - (1-\pi)(2\phi-1)\rho - (1-\pi) + \rho(1-\pi) > 0$$
$$\pi(1-\phi) - (1-\pi)(1-\phi) + (1-\pi)\rho 2(1-\phi) > 0$$
$$(1-\phi)(2\pi-1) + (1-\pi)\rho 2(1-\phi) > 0$$

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:

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

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

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

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:

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

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

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:

$$1 + \pi + (1-\pi)\rho - 1 - \pi\phi - (1-\pi)\phi\rho - (1-\pi)(1-\phi)(1-\rho) =$$
$$\pi(1-\phi) + (1-\pi)\rho(2-2\phi) - (1-\pi)(1-\phi) =$$
$$(1-\phi)(2\pi - 1) + (1-\pi)\rho 2(1-\phi) > 0$$

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