Who Seeks Re-Election: Local Fiscal Restraints and Political Selection

Susana Peralta and João Pereira dos Santos

Who Seeks Re-Election: Local Fiscal Restraints and Political Selection[1]

Susana Peralta[2] e João Pereira dos Santos[3]

Abstract

This paper analyses the consequences of local fiscal autonomy for political selection. We propose a model of political careers where both decisions to become candidates and seek re-election are endogenous. Market and political ability are private information, and the latter is revealed to the incumbent during her first period in office. Following an unanticipated reduction in the returns from holding office, we show that incumbents with high market ability are more likely to refrain from running again for office than their lower ability counterparts. We test this prediction exploiting an unexpected reduction in the upper bound of the municipal property tax rate, announced by the Portuguese Prime Minister in July 2008, just 15 months before the local elections. We rely on a comprehensive dataset on all Portuguese mainland municipalities for the 2005 and 2009 elections, including municipality and individual mayor characteristics. We follow a difference-in-differences strategy to show that affected mayors – those who were forced to decrease the property tax rate, and thus faced a sharp tax revenue decrease – are less likely to seek re-election. This effect is driven by high quality incumbents, as proxied by their previous occupation.

JEL Classification: C23, D71, H71, H72

Keywords: Political Selection, Fiscal Autonomy, Local Governments

[2] Corresponding author. Nova School of Business and Economics, Universidade NOVA de Lisboa, Campus de Campolide, 1099-032 Lisbon, Portugal. Email: peralta@novasbe.pt
[3] Nova School of Business and Economics, Universidade NOVA de Lisboa, Campus de Campolide, 1099-032 Lisbon, Portugal. Email: joao.santos@novasbe.pt

1. Introduction

Politicians have a strong impact on political outcomes. Jones and Olken (2005) use natural death or terminal illness of leaders while in office as a source of exogenous variation to show that politicians's quality affect economic growth. Besley, Montalvo, and Reynal-Querol (2011), following and expanding the data for the previous paper, obtain that growth is higher when political leaders are more educated. A natural research question is then how to best attract and retain high quality politicians into the political market. In this paper, we focus on local government autonomy as a determinant of political selection, following recent contributions by Brollo et al. (2013), Bordignon, Gamalerio, and Turati (2017), and Gamalerio (2017). We use a quasi-natural experiment – an unexpected decrease of the maximum local property tax rate in Portugal, announced on July 2, 2008 by the Prime Minister – to show that reduced autonomy leads mayors to retire from municipal politics, mostly for the high quality ones.

In Portugal, the property tax is set at the municipal level, on a range established by the central government. The value of the tax base (i.e., the fiscal value of property) is also decided centrally. It is the municipalities' main source of own revenue. Following the unexpected change in the tax upper bound, there was an immediate protest from the local government association (Associação Nacional de Municípios) just two days later, on July 4. The representative of Portuguese Mayors complained about the likely impact on local government revenues, forecasted at 12.5% of total revenue, claiming that the he did not understand the choice of the central government to ease the taxpayers' fiscal burden at the expense of someone else's money.[4] We study the mayoral decision to seek re-election in the municipal elections held 15 months later, in October 2009.

In order to motivate our analysis, we provide a simple model of political careers in the spirit of Mattozzi and Merlo (2008) where both decisions to become candidates and seek re-election are endogenous. Market and political ability are private information, and the latter is revealed to the incumbent during her first period in office. Following an unanticipated reduction in the returns from holding office, we show that incumbents with high market ability are more likely to refrain from running again for office than the low ability ones. We then test this prediction of the model using a difference-in-differences strategy to show that affected mayors, i.e., those who were forced to decrease the property tax rate and thus faced a sharp decrease in local revenues, are less likely to seek re-election than their non-treated counterparts. This effect is driven by mayors whose previous private occupation required a higher education degree. We use a comprehensive dataset on all mainland Portuguese municipalities that includes economic, fiscal, political variables, and individual characteristics of mayors.

The Portuguese municipal elections, from the first democratic ones in 1979 to 2005, saw almost 80% of the mainland incumbents seeking re-election (Aidt, Veiga, and Veiga, 2011). The motivations of the one fifth that do not seek re-election are not well known. Castro and Martins (2013a) underline the importance of municipal economic performance in the mayor's decision to seek re-election.[5] We depart from Castro and Martins (2013a) in three main aspects: (i) we focus on local autonomy, (ii) we use a quasi-experimental setup, and (iii) we are interested in political selection.

---

[4] http://expresso.sapo.pt/actualidade/descida-de-imi-beneficiara-centenas-de-milhares-de-proprietarios-diz-o-pm=f363754

[5] When it comes to local political careers, there is a number of papers on the determinants of mayors' re-election, which put emphasis on the economic drivers, such as unemployment and fiscal variables, including studies for Brazil (Sakurai and Menezes-Filho,2008), Portugal (Castro and Martins(2013a) and Castro and Martins(2013b)), France (Cassette and Farvaque,2014), Spain (Balaguer-Coll et al.,2015), and Greece (Chortareas, Logothetis, and Papandreou, 2016).

Empirical studies of political selection have focused on the political wage (Besley, 2004, Ferraz and Finan, 2009, Kotakorpi and Poutvaara, 2011, Gagliarducci and Nannicini, 2013, Dal Bó, Finan, and Rossi, 2013, and Fisman et al., 2015), outside option (Gagliarducci, Nannicini, and Naticchioni, 2010), districts' competitiveness (Galasso and Nannicini,2011), monitoring institutions (Grossman and Baldassarri,2012), electoral rules (Beath et al., 2014), gender quotas (Baltrunaite et al.,2014, andBesley et al.,2017), and financial asset disclosure laws (Fisman, Schulz, and Vig,2016). Three recent papers that are particularly related to ours focus on the impact of local autonomy in mayor selection. Brollo et al. (2013) use the fact that central government transfers to municipalities in Brazil depend on local population to employ a regression discontinuity design, and find that larger transfers increase observed corruption and reduce the average education of candidates for mayor. Bordignon, Gamalerio, and Turati (2017) analyse the 1993 electoral and funding reform of Italian municipalities, which included the implementation of property taxes, reduction of central government grants, and introduction of mayor direct election. This reform led voters in richer cities to elect mayors coming from top private professions, with less political experience. Finally, Gamalerio(2017) exploits a Difference-in-Discontinuity (Diff-in-Disc) design to compare the results of elections held before a 2001 Italian central government reform that relaxed fiscal rules for municipalities with less than 5000 inhabitants with results immediately after. This study concludes that fiscal rules negatively affect the quality of politicians, measured by their education levels.

While these three papers analyse all candidates, we focus specifically on the incumbent mayor's decision to seek re-election.[6] We follow the literature and rely on an observable characteristic – previous occupation – as a proxy of politician's quality. The only alter- natives that have been used are education level or previous political experience. The exception is a very recent contribution by Dal Bó et al. (2017), who circumvent this problem using a unique dataset which tracks all Swedish municipal politicians in the pre and post-political office labour market, including non-cognitive capabilities measured at the time of military drafting. This paper concludes that politicians are on average smarter and better educated than the average citizen.

Our paper is also related to the recent public finance literature that uses quasi-natural experiments. The closest to our empirical analysis are Lyytikäinen (2012) and Baskaran (2014), who rely on similar centrally legislated changes in local tax ranges. Lyytikäinen (2012) uses a change in minimum tax rates set by the Finnish central government for property taxes to identify local tax competition. Lyytikäinen(2012) studies an increase in the lower bound of the local tax rate, whereas we analyse a decrease in the upper bound. Baskaran (2014) uses a diff-in-diff approach by comparing two German states, of which North Rhine-Westphalia faced an increase in business and property tax rates.[7]

The remainder of the paper is organized as follows. In Section 2, we introduce a simple model of political careers. In Section 3, we provide a short tour on the institutional background. We present our dataset and explain our empirical strategy in Section 4 while results are shown in Section 5. Finally, Section 6 concludes.

---

[6] The seminal papers on seeking re-election focus on retiring decisions of US members of congress, which is related to a low expected margin of victory, a fractionalized legislative process, shrill constituents and abrasive single-issue interest groups, lack of privacy, the large amount of fund raising required to conduct modern campaigns, the desire to acquire committee power, and the demise of seniority systems (Hibbing (1982), and Moore and Hibbing (1992)).
[7] Other papers in this strand include Isen (2014) uses a regression discontinuity design with close referenda on tax ceilings in Ohio, who analyse the impact of centrally imposed fiscal discipline on local governments.

2. The Model

We begin by providing a model that illustrates the possible mechanism behind our empirical results. Specifically, we setup a simple two-period citizen-candidate model where the incumbent must decide whether or not to seek re-election at the end of the first period in office. We then introduce an unexpected shock to the payoff of holding office that leads high quality incumbents to retire from politics.

Our model borrows a number of important ingredients from Mattozzi and Merlo (2008), but differs from theirs in one crucial aspect. As Mattozzi and Merlo (2008), we consider two sectors – the market and the political – and individuals that live for two periods and must decide whether (i) to run for politics in the first period of their lives, and (ii) to seek re-election in the second period. Elections are held under plurality rule. We also follow Mattozzi and Merlo (2008) in assuming that individuals differ both in their market ability m and their political ability p, which are positively correlated. Contrary to Mattozzi and Merlo (2008), we assume that individuals know their market ability m, which is uniformly distributed on the (0, 1] support, but not their political ability $p \in \{l, h\}$, with l = 0.[8] This information structure can be explained by the fact that individuals know their education level and school quality, together with their family background, which have been found to be important determinants of one's wage (Card, 1999 and Mazumder, 2005). The market ability is private information. The political ability is revealed during the first period in office. The probability that an individual with market ability m has high political ability is given by α + λm, with 0 ≤ α < 1, 0 < λ ≤ 1 − α, both common knowledge.[9] We normalise units such that a type p politician earns a total utility from being in office of p, which includes both the salary and the ego-rent.[10] Individuals make their career decisions to maximise life-time earnings. When indifferent, they opt for politics. They do not discount the future.

In the first period in office, the politician's quality is unknown and her ego-rent is equal to the population average of the political ability

$$r = h \frac{2\alpha + \lambda}{2}$$

Note that the assumption λ ≤ 1 − α ensures that r < h.

We proceed by backward induction, with the second period decision on whether to run for re-election. When an incumbent seeks re-election, she earns l = 0 or h, depending on her revealed political type. If she opts for the private market instead, she earns m > 0. Therefore, low political types do not seek re-election. Conversely, high political types seek re-election if m ≤ h. We now turn to the first period decision. An individual with m > h knows that if she decides to run for politics, she stays in office for only one period. If she runs for politics, her return is r + m, which she compares with the outside option 2m. The outside option is always better, since m > h > r. An individual with market type m ≤ h stays for a further period in office with probability α + λm, while she joins the private market otherwise. Therefore, her expected return from running for politics is

$$r + (\alpha + \lambda m)h + (1 - \alpha - \lambda m)m$$

which she compares to 2m.

The individual runs for office if

$$r - m + (\alpha + \lambda m)(h - m) \geq 0 \qquad (1)$$

---

[8] More precisely, this inverses the assumptions in Mattozzi and Merlo(2008), where the market ability has a discrete support and is not know, and political ability has a continuous support and is known to the individual.

[9] Mattozzi and Merlo(2008) assume that the probability of a high market return, conditional on political ability is α + λp.

[10] Introducing a constant political salary does not change the qualitative nature of the results.

Straightforward algebra allows us to establish that (2) is decreasing in m.[11] The net gain from running for office, given by (2), is equal to r + αh > 0 when m = 0, and r − m < 0 when m = h. Therefore, there exists a unique $\hat{m}(h) \in (0, h)$ such that all individuals with m > $\hat{m}(h)$ do not run for office, and the remaining ones do run for office. Not surprisingly, when h increases so does $\hat{m}(h)$ and therefore more individuals enter politics.[12]

We finally look at voter behaviour. Voters always reelect an incumbent who seeks re-election, since seeking re-election signals high political ability. In the first stage, the equilibrium strategy of the voters is the same as in Mattozzi and Merlo (2008). Since each candidate votes for herself, under plurality rule all these votes are canceled out. Moreover, all candidates are ex-ante identical from the voters' viewpoint, so the first period incumbent is just a random draw from the pool of candidates.

Given the discussion above, we characterise the equilibrium in the following proposition.

Proposition 1 There exists a unique $\hat{m}(h) \in (0, h)$ such that

(i) Individuals with market ability m > $\hat{m}(h)$ do not run for office in the first period of their lives and opt for a career in the private market.

(ii) Individuals with market ability m ≤ $\hat{m}(h)$ run for office in the first period of their lives. In the second period, they seek re-election if and only if their realised political skill is high. Otherwise, they retire from politics and join the private market.

Moreover $\hat{m}(h)$ increases with h.

We have discussed how the equilibrium of the game changes with *h*. Another interesting question, which motivates our empirical analysis, is a surprise decrease in the value of *h*, arising in the second period, when the decision to run is sunk. In other words, an incumbent with $m \leq \hat{m}(h^{o})$ is surprised by a decrease in *h* from h^{o} to h^{i}. If the incumbent's realised political skill is low, her decision not to seek re-election is unaltered. However, if her realised political skill is high, it may happen that she would seek re-election under h^{o} and is better off by going to the private market under h^{i}. This happens if *(i)* the incumbent's market skill is sufficiently high, and *(ii)* the shock is sufficiently strong. This outcome is illustrated in Figure 1.

Figure 1: Effects on unanticipated shock to h
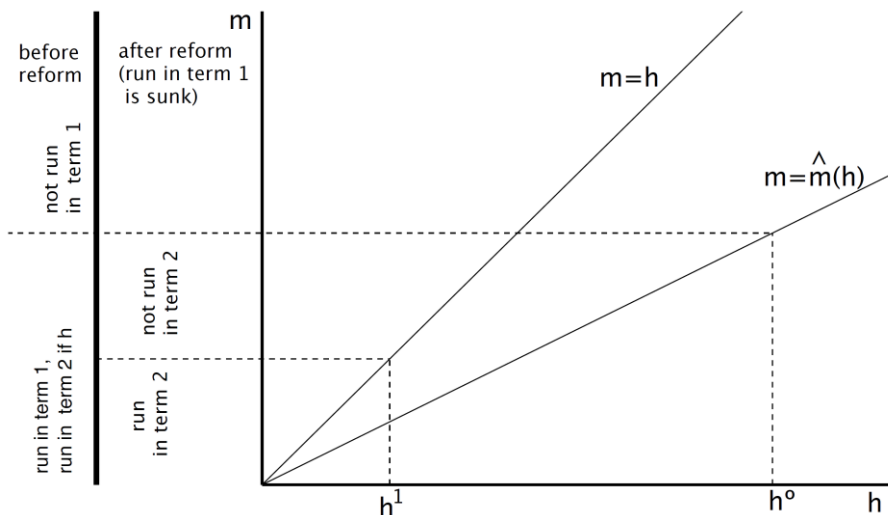
We now test these predictions using Portuguese municipal government data. We use the surprise decrease in the maximum possible property tax rate as a decrease in h. The intuition is that it is more rewarding to hold the political office if the mayor has high political skills and enough autonomy to implement her agenda. As a proxy of market skills m, we use the previous occupation of the mayor in the private market to build an indicator variable of whether or not she holds a university degree.

3. Institutional Background

Mayors are the top decision makers in Portuguese municipalities (Veiga and Veiga, 2017). Besides presiding over the Town Council meetings, they manage human resources, authorize contracts and licenses, choose projects to be implemented and their specific timetable. Mayoral candidates – the heads of municipal electoral lists – play a leading role during political campaigns. According to Castro and Martins (2013b), mayors are "at least as important as the party that supports them, meaning that different candidates may provide different electoral outcomes". Despite their central role in local politics, the mayors are subject to the checks and balances of the legislative branch – the Municipal Assembly and both internal and external control mechanisms from the central government and the Court of Accounts. The political spectrum in municipalities is dominated by the local branches of the parties that are represented in the national parliament.[13]

Local governments are funded with transfers from the central government and the European Union, together with local taxes which vary as to the extent of autonomy enjoyed by the local governments. The central government sets the tax base of all the local taxes, and the tax rate in the tax on transfers of real estate (IMT – Imposto Municipal sobre as Transmissões Onerosas de Imóveis). In the remaining local taxes the municipalities can set the tax rates respecting a given centrally set tax range, which amounts to a maximum tax in the case of the municipal corporate income tax (Derrama) and the municipal personal income tax, and to a minimum and maximum tax rate in the case of the property tax (IMI – Imposto Municipal sobre Imóveis). The property tax is the main source of local tax revenue (Veiga, 2012). Municipalities allocate the bulk of their revenues to provide local public goods such as education, healthcare, transportation, urban planning and culture.[14]

Portuguese municipal elections have several advantages to be used in empirical analysis. First, election dates are exogenously fixed every four years, on the same day for all municipalities. Second, during the two election periods considered in this paper, there were no term limits.[15] Finally, our dataset is based on a single country, ensuring that all local governments operate under the same institutional framework.

3.1 The Reform of 2008

In December 2003, as a result of a general reform of the Portuguese tax system, IMI replaced the previous property tax.[16] Municipalities have a limited discretionary power to set a tax rate within a range defined by the Portuguese Parliament every year, as shown in Section 3.1.

---

[13] From right to left these are the Popular Party (CDS-PP), the center-right Social-Democrats (PSD), the Socialists (PS), the Communist Party (PCP), and the Left Bloc (BE). In addition, lists of organized independent citizens may contest the elections.
[14] Law no. 159/99 September 1999.
[15] In 2005, the Portuguese parliament issued a law limiting the number of consecutive terms to three. However, as the count started in the 2005 local elections for all incumbents, this regulation became binding in 2013.
[16] The former property tax was the (Contribuição Autárquica), implemented in 1989.

6

The reform included new rules to assess the fiscal value of urban properties, which are set centrally by the law and offer no discretion to the municipalities. The law established a transition period of ten years, during which every real estate urban property had to be assessed in accordance with the new rules. All new urban constructions and dwellings which were sold during the period were automatically reassessed. The remaining properties were to follow a pre-established reassessment calendar. During the transition period, which ended in 2013, municipalities set two different tax rates, for reassessed and non-reassessed properties. We shall concentrate on the property tax on non-assessed properties, which anecdotal evidence suggests is the most relevant one. At the time of signing the Memorandum of Understanding with the external institutions (European Commission, European Central Bank, and the International Monetary Fund) in the context of the 2011 bail-out, only the new buildings were assessed upon the new rules.[17] Only one third of the properties had already been re-assessed in July 2012.[18]

Table 1: Property Tax Rate Range (%)

Year	Reassessed	Non-reassessed	Rural
Before 2003		0.7 – 1.3	0.8
2003 - 2007	0.2 – 0.5	0.4 – 0.8	0.8
2008 onwards	0.2 – 0.4	0.4 – 0.7	0.8

Figure 2: IMI Revenue collected per capita
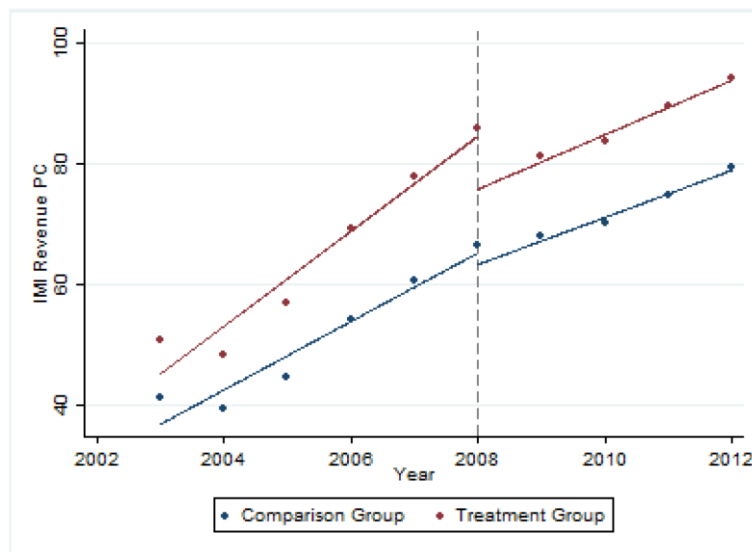
In 2008, the government announced a decrease of one percentage point in the upper bound of the urban property tax, as depicted in Section 3.1.[19] The change forced 127 municipalities (out of a total of 278) to decrease their property tax rate. Section 3.1 shows the steep and discontinuous shock in the property tax revenue of treated municipalities vis-a-vis the comparison ones.

---

[17] http://www.acis.org.pt/website/noticias/241-alteracoes-ao-imi-avaliacao-geral-dos-predios-urbanos
[18] http://www.jornaldenegocios.pt/economia/detalhe/avaliaccedilatildeo-geral-de-imoacuteveis-em-risco-de-derrapagem.html
and http://www.jornaldenegocios.pt/economia/impostos/imi/detalhe/autoridade-tributaria-terminou-avaliacao-geral-de-49-milhoes-de-predios-urbanos.html.
Unfortunately, there is no official data on the pace at which the reassessment was implemented.
[19] Law 64/2008, December.

4. Data and Empirical Strategy

4.1 Data Sources and Description

We use data from all 278 municipalities in mainland Portugal for two consecutive elections, immediately before (October 2005) and after (October 2009) the IMI Reform. Data was mainly collected from Statistics Portugal (henceforth, INE), the government body for internal affairs (DGAI, in the Portuguese acronym), the National Election Committee (CNE), the government body for local institutions (DGAL), and direct contacts with municipal governments.[20] Unemployment data is from the National Employment Agency (IEFP).

Section 4.1 presents descriptive statistics for 2005 and 2009.

The top panel in Section 4.1 pertains to the main variables in our analysis: the first line to our binary dependent variable, which indicates the individual mayor's decision to seek re-election, and the following ones to the reform year, treatment, and interaction term used in the diff-in-diff strategy, respectively.

We take into account observed heterogeneity across observations by including a set of covariates related to the reform, political, mayor, and socioeconomics controls. We now briefly describe the controls used in each category.

Reform controls Given that our treatment relies on a compulsory property tax change, we control for voluntary changes by including the yearly property tax growth rate. Bosch and Solé-Ollé (2007), analysing the outcomes of three Spanish local elections (1995, 1999 and 2003) for nearly 3000 Spanish municipalities, find that property tax increases have a negative impact on the incumbent vote share. We account for the importance of property tax revenue in the municipal budget by including its share on total municipal revenue, including own taxes and transfers from the central government. Finally, we control for the remaining local taxes (personal and corporate income): as explained before, we use the personal income tax surcharge rate in the year before the election (0 in 2005, 2008 tax rate for 2009 election); "derrama tax rate" is the corporate income tax surcharge levied by the municipality.[21]

Political controls As fiscal covariates are concerned, we control for potential re-election opportunism by including primary (i.e., net of interest payments) expenditure per capita.

---

[20] The official data has missing observations on some mayor characteristics, which we had to complement with information from the websites of several municipalities.
[21] As will be explained in Section 4.2, the personal income surtax was introduced with the local finance reform of 2007.

Table 2: Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
Seek Re-election	0,86	0,34	0	1
Year 2009	0,50	0,50	0	1
IMI Reform	0,46	0,50	0	1
Year 2009 × IMI Reform	0,23	0,42	0	1
IMI Growth Rate	-0,004	0,13	-0,5	1
IMI Share	10,80	7,20	1,23	34,65
IRS Tax Rate	2,29	2,42	0	5
Derrama Tax Rate	2,86	3,99	0	10
Political + Mayor controls				
Primary Expenditure PC	982,36	479,59	353,90	3 497,79
Debt Interest Expenditures PC	16,86	16,85	0	188,56
Majority dummy	0,89	0,31	0	1
Winning Margin	19,33	13,74	0,03	60,28
Same Political Party dummy	0,43	0,50	0	1
Leftist Mandates	0,54	0,25	0	1
Abstention Rate	34,21	7,66	17,70	54,60
Party Independent Mayor	0,02	0,14	0	1
Mayor Age	53,81	7,66	32	76
Mayor Age squared	2954,05	825,17	1024	5776
Female Mayor	0,06	0,23	0	1
High-Quality Mayor	0,72	0,45	0	1
1	0,28	0,45	0	1
2	0,27	0,44	0	1
3	0,20	0,40	0	1
4	0,10	0,31	0	1
5	0,06	0,24	0	1
6	0,04	0,19	0	1
7	0,02	0,15	0	1
8	0,01	0,09	0	1
9	0,01	0,09	0	1
Monthly Mayor Wage	4 760,53	480,78	4 053,94	6 155,13
Socioeconomic controls				
Population Density	0,31	0,85	0,01	7,38
Dependency Ratio	0,59	0,12	0,39	1,09
Graduates	0,07	0,03	0,02	0,29
Total Urban Area	11,35	14,76	0	91,279
Electricity Consumption PC	4 266,66	4 540,57	1 446,64	6 2984,48
Unemployment Rate	6,86	2,30	1,52	15,46
Robustness Subsamples				
Property tax rate between 0.6 and 0.8 in 2008	0,93	0,25	0	1
Term Limited	0,37	0,48	0	1
Metropolitan Area Lisbon	0,06	0,25	0	1
Metropolitan Area Porto	0,06	0,23	0	1
Coast	0,19	0,39	0	1

Number of observations: 556. PC stands for per capita.

For Portugal, Aidt, Veiga, and Veiga (2011) find strong evidence of political payoff to opportunistic spending in municipal elections.[22] Additionally we control for financial liabilities generated in previous years with per capita interest payments.[23]

To control for the stock of reputation of the incumbent, we include two variables: a binary indicator that takes value of 1 if the mayor has an absolute majority in the Municipal Assembly; and her winning margin in the previous election (i.e., the difference in vote share between her party and the runner-up). All things equal, a politician with a lower stock of reputation is less likely to seek re-election.[24] The indicator variable for mayors that belong to the same political party as the prime-minister and the fraction of mandates of left-wing parties in each jurisdiction in the Municipal Assembly are local ideology controls. We also control for abstention rates because higher turnout is likely to signal more voter involvement in monitoring the incumbent. The reasons for a lower turnout may also be related to disenchantment, indifference, or contentment.

Mayor controls We add a binary variable for mayors who are not aligned with any political party. Personality may also alter the contenders' electoral fortunes: we include the age and age squared of the incumbent, and a gender indicator.[25] We account for education level with an indicator of whether the incumbent had a job in any of the following areas: law, economics and management, medicine or engineering. While more education increases the mayor's outside option, it may also enhance her credibility amongst voters, increasing her chances of winning.

Evidence of popularity erosion over time in office has been documented in a seminal paper by Mueller(1970) and confirmed for Portugal (Aidt, Veiga, and Veiga, 2011). We thus control for the number of consecutive years in power adding a full set of indicator variables for each possible number of terms that an incumbent mayor as served (ranging from one to nine). Lastly, the wage paid to politicians affects the choice to enter and stay in the political market, and this effect may be higher for mayors with previous occupations that require a university degree.[26] We add the monthly wage – which depends on the municipal population – in 2009 real terms.

Socioeconomic controls Several characteristics of the local environment have attracted attention in the literature on re-election chances and political support. We thus include population density and the age dependency ratio. Akhmedov and Zhuravskaya (2004), in their study of opportunistic business cycles in Russian regions, measure voter awareness using education and urbanization. We proxy the level of education using the percentage of employees with tertiary education who work in each municipality. We take into account differences between urban and rural environment-specific factors using the share of municipal area described as urban space in the Municipal Spatial and Land-use Plan (PMOT, in the Portuguese acronym). The business cycle is controlled for using the consumption of electric energy per capita, and the unemployment rate. For Portugal, Martins and Veiga (2013) find that national and sub-national economic conditions have an impact on municipal electoral outcomes.

---

[22] Similar results were found for Germany (Galli and Rossi, 2002), Russia (Akhmedov and Zhuravskaya, 2004), Brazil (Sakurai and Menezes-Filho, 2008), and Italy (Padovano, 2012).

[23] Brender (2003), and Drazen and Eslava (2010) show that the volume of debt generated by the local government decreases the re-election chances. On the contrary, Cassette and Farvaque (2014) show that the accumulation of debt during the whole term adversely affects their re-election, but in contrast, pre-election debt accumulation favors the election results of incumbents.

[24] Another interesting contribution by Martins and Veiga (2014) analyses the impact of turnout on the incumbent mayor's vote share.

[25] Fox and Lawless (2004) find that women who share the same personal characteristics and professional credentials as men express significantly lower levels of political ambition to hold elective office.

[26] Some models predict that higher salaries attract higher quality individuals (proxied by college education) to run for office (Besley (2004), and Caselli and Morelli (2004)), while others predict the opposite outcome (Messner and Polborn (2004), and Mattozzi and Merlo (2008)).

4.2 Identification strategy and discussion

We estimate the following linear probability model, where our coefficient of interest will be the interaction between the treatment group indicator (IMI Reform) and that of the treatment period (Year 2009), i.e., α_3:

$$SeekRe-election_{it} = \alpha_1 \text{Year 2009}_{it} + \alpha_2\text{IMI Reform}_{it} + \alpha_3\text{IMI Reform} \times \text{Year 2009}_{it}$$
$$+ \alpha_4\text{Reform controls}_{it} + \alpha_5\text{Political} + \text{Mayor controls}_{it} +$$
$$+ \alpha_6\text{Socioeconomic controls}_{it} + \alpha_7\text{Regional dummies}_{it} + s_{it}, \quad (2)$$

where i is municipality, t is election year (t=2005; 2009) and regional time-invariant effects are considered at the Nuts 2, or 3 level. The presence of heteroscedasticity and spatial correlation is controlled for using robust standard errors clustered by municipality since treatment varies at that level (Bertrand, Duflo, and Mullainathan, 2004).

Equation (2) is a simple difference-in-differences specification, in which outcomes are observed for two groups for two time periods. The treatment group contains the 127 municipalities who had a tax rate above the new maximum (i.e., between 0.7 and 0.8) in 2007 and were hit by the surprise announcement in the following year.[27] The comparison group contains the remaining 151 municipalities.

The identification strategy relies on three assumptions that we now discuss: (i) there is no manipulative sorting into the treatment; (ii) municipal characteristics must be balanced around the new threshold; and (iii) municipalities must be on parallel trends in the pre-treatment period.

We tackle the first issue by excluding municipalities with tax rates below 0.6 (recall that treated municipalities are forced to decrease their tax rate from the interval (0.7, 0.8]). In principle, the preferences for public goods and tax rates of these comparison high-tax municipalities are similar to the treated ones. Moreover, the shock was exogenous and unexpected and, as shown in Table 3, there is no evidence that the prime minister was aiming a particular set of mayors, political-wise, with the reform.

As regards the second issue, Table 3 shows that the treated municipalities are, on average, more populous and densely populated, and more urban than the comparison ones. This is confirmed by the map in Figure3. They also spend more, in per capita terms. In addition, there are minor differences in the following observables: local corporate tax surcharge ("derrama"), abstention rate, and age dependency ratio.[28]

We tackle these concerns with two different, complementary, strategies. Firstly, we follow the usual approach in the literature of sequentially introducing vectors of observables as controls in the regression, without changing our results. This fact, as pointed out by Altonji, Elder, and Taber (2005), underscores the stability of the statistical relationships and vindicates their robustness to selection not only to observed explanatory variables but also to unobservables. Secondly, we eliminate the possibility that our results be driven by some sort of "urban" bias or geographical clustering by introducing NUTS 3 fixed effects, and then running our specification for a subsample that excludes, in turn, the Lisbon and Oporto metropolitan areas, coastal municipalities, and the subgroup of municipalities belonging to each of the five NUTS 2 regions of mainland Portugal.[29]

---

[27] A change in the local tax range (in their case, an increase in the lower bound) has been used as a quasi-experimental setup by Lyytikäinen (2012).

[28] The other significant difference is the growth rate of property tax rate, which reflects the treatment, i.e., as expected, treated municipalities have a lower growth.

[29] Nuts 2 areas comprise 5 regions in mainland Portugal (North, Center, Lisbon, Alentejo, and Algarve) while Nuts 3 level comprise 28 smaller groups of local authorities.

Finally, given that Portuguese municipal elections take place every four years, we cannot include a large pre-treatment period without taking into account several previous changes in local laws. This makes it difficult to test the common trends assumption directly. The simple inspection of the share of mayors who seek re-election in previous elections in Table 4 shows no substantive differences between the two groups. As it turns out, even in the short period considered, there are two reforms that are worth discussing as possible sources of bias.

Figure 3: Spatial distribution of the Portuguese municipalities affected by the reform of 2008
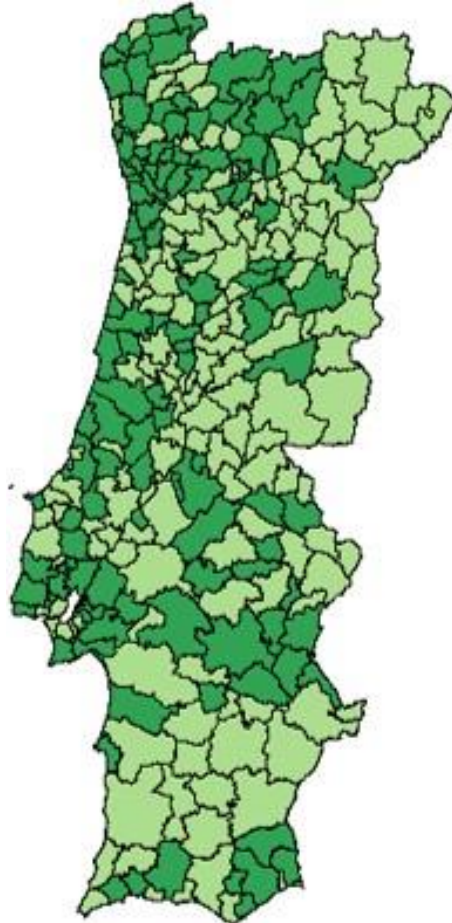
Dark: Treatment group
Light: comparison group

Table 3: Balance Tests (Mean Differences in 2006-07)

Variable	Treatment	Comparison	Difference
Reform controls			
IMI Growth Rate	13,892	9,263	4,629*** (0,803)
IMI Share	0,012	0,004	0,008 (0,008)
IRS Tax Rate	4,622	4,556	0,066 (0,131)
Derrama Tax Rate	0,01	0,007	0,003*** (0,001)
Political + Mayor controls			
Primary Expenditure PC	799,296	979,356	-180,060*** (47,955)
Debt Interest Expenditures PC	20,015	18,174	1,842 (2,194)
Majority dummy	0,898	0,907	-0,010 (0,036)
Winning Margin	20,249	18,895	1,354 (1,611)
Same Political Party dummy	0,394	0,338	0,056 (0,058)
Leftist Mandates	0,549	0,543	0,005 (0,030)
Abstention Rate	35,228	33,146	2,082** (0,905)
Party Independent Mayor	0,031	0,02	0,012 (0,019)
Mayor Age	53,354	52,715	0,639 (0,880)
Mayor Age squared	2888,425	2845,47	42,955 (93,799)
Female Mayor dummy	0,055	0,06	-0,004 (0,028)
Mayor Mandates (No.)	2,654	2,556	0,097 (0,206)
Monthly Mayor Wage	5113,747	4857,087	256,66*** (52,70)
Socioeconomic controls			
Population Density	0,444	0,202	0,242*** (0,105)
Dependency Ratio	0,55	0,622	-0,072*** (0,014)
Graduates	0,069	0,063	0,006 (0,004)
Total Urban Area	14,866	8,187	6,679*** (1,770)
Electricity Consumption PC	4836,572	3872,912	963,660 (593,325)
Unemployment Rate	6,023	5,841	0,182 (0,243)

Notes: The values for the IRS Tax Rate are from 2008. Standard errors in parenthesis are clustered at the municipal level and are robust to heteroscedasticity. Stars indicate significance levels of 10% (*), 5% (**), and 1%(***).

Table 4: Recandidate Mean Differences for Treatment and Comparison Groups

Year	1989	1993	1997	2001
Treatment	82,4	77,6	79,2	84,8
comparison	81,3	78	74,7	84

The first is the introduction of term limits in 2005, which were effective only as of the 2013 election. Although we do not deal with the 2013 election in the paper, the reform implies that some mayors who run in 2009 know that, if elected for another term, it will be their last one. In theory, it would be fair to assume that this makes them consider this election with a different strategic outlook. However, Veiga and Veiga (2017) show in Table B.6 that the probability that a mayor seeks re-election is not affected by them being term-limited in the next election.[30] We account for mayor seniority by adding a full set of indicator variables for each possible number of terms that an incumbent mayor as served (ranging from one to nine). We also run our baseline regression for the subset of incumbents who will be term limited in 2013.

---

[30] The recent Portuguese mayoral election term-limit reform has also been analysed by Fonseca (2017) and Fonseca (2016).

The second contemporaneous reform was the 2007 introduction of a personal income tax surcharge of up to 5% of residents' personal income tax bill.[31] We control for this by including the personal income tax surcharge rate in the year before the election (0 in 2005, 2008 tax rate for 2009 election).

5. Results

Table 5 shows the baseline results for the OLS regressions, with Recandidate as the dependent variable. Column (1) presents the simplest diff-in-diff specification with fixed effects at the Nuts 3 level and no additional controls. To rule out other possible confounding mechanisms, vectors of time-varying variables are sequentially introduced as follows: fiscal reform, then political and mayor controls and, finally, socioeconomic characteristics of the municipality.

The findings uncovered by the analyses indicate that, when the mayor's favourite tax policy is removed from their strategy set, mayors are less likely to run for office again.[32] However, the coefficient of interest, that of the interaction of the treatment group (IMI reform) with the year 2009, is not statistically significant in columns (3) and (4). Therefore, when all mayors are considered, the effect of the reform does not seem to be robust. In order to deepen our analysis, we test the theoretical implication of our model, namely, that mayors with higher market skills will retire, whereas those with lower market skills remain in the political market.[33]

Table 5: Results: All Mayors

	Seek Re-election			
	(1)	(2)	(3)	(4)
Year 2009	0,093**	0,126	0,149	0,140
	(0,044)	(0,089)	(0,092)	(0,095)
IMI Reform	0,096**	0,096**	0,077*	0,080*
	(0,045)	(0,046)	(0,045)	(0,045)
IMI Reform×Year 2009	-0,108*	-0,110*	-0,074	-0,081
	(0,061)	(0,062)	(0,058)	(0,059)
Reform controls	No	Yes	Yes	Yes
Political + Mayor controls	No	No	Yes	Yes
Socioeconomic controls	No	No	No	Yes
NUTS 3 Dummies	Yes	Yes	Yes	Yes
Number of observations	556	556	556	556
Adjusted R2	0,018	0,012	0,070	0,086

Notes: All columns include NUTS 3 fixed effects (28 regional dummies). Standard errors in parenthesis are clustered at the municipal level and are robust to heteroscedasticity. Stars indicate significance levels of 10% (*), 5% (**), and 1%(***).

We run separate regressions depending on whether municipalities are governed by a mayor whose previous occupation required a university degree, respectively, in Table 6 and Table 7. There are 196 high-quality mayors in 2005 (94 in the treatment, and 102 in the comparison group), and 202 in 2009, evenly split across the two groups. In line with our theoretical prediction, the effect of the reform on the decision to seek re-election is driven by the subset of mayors with higher market skills. Indeed, the treatment does not have a

---

[31] Bordignon, Grembi, and Piazza (2017) studies a similar reform in Italy.

[32] It could be that mayors are discouraged to seek re-election because they are forced into an impopular measure. This is not the case in our setting, where the tax is constrained to decrease. For evidence that higher taxes decrease re-election prospects, see Bosch and Solé-Ollé (2007).

[33] In the Appendix, we show the regression results for the subsamples of mayors who would be term-limited in 2013, if reelected in 2009. The coefficient of interest is not statistically significant, dismissing possible concerns that our results might be driven by this change in the electoral law.

statistically significant impact on the decision to seek re-election amongst the the low quality mayors. Therefore, for the remaining of this paper, we will focus our attention in incumbent mayors with an university degree.

Using our preferred estimates in Column (4) of Table 6, the differential effect of the reform is given by 0.1 × (101 − 94) − 0.16 × 101 + 0.192 × (102 − 101) = 15.652, i.e., around 16 high-quality mayors who would, in the absence of the tax reform, seek re-election, do not when faced with the surprise decrease in the property tax upper bound. To have an idea about the magnitude of the effect, note that this amounts to around 7.7% of the 202 high-quality incumbents of the 2009 election.

In Section 4.2, we have highlighted the three critical assumptions behind our identification strategy: (i) no manipulative sorting into the treatment; (ii) municipal characteristics balanced around the new threshold; and (iii) municipalities must be on parallel trends in the pre-treatment period and discussed approaches to overcome those. The next subsection tackles these issues, for purposes of robustness.

Table 6: Results: Low-Quality Mayors

	Seek Re-election			
	(1)	(2)	(3)	(4)
Year 2009	0,140***	0,180*	0,202*	0,192*
	(0,050)	(0,102)	(0,112)	(0,116)
IMI Reform	0,127**	0,117**	0,100*	0,100*
	(0,054)	(0,054)	(0,053)	(0,053)
IMI Reform×Year 2009	-0,180**	-0,172**	-0,153**	-0,160**
	(0,070)	(0,070)	(0,068)	(0,067)
Reform controls	No	Yes	Yes	Yes
Political + Mayor controls	No	No	Yes	Yes
Socioeconomic controls	No	No	No	Yes
NUTS 3 Dummies	Yes	Yes	Yes	Yes
Number of observations	398	398	398	398
Adjusted R2	0,033	0,037	0,096	0,093

Notes: All columns include NUTS 3 fixed effects (28 regional dummies). Standard errors in parenthesis are clustered at the municipal level and are robust to heteroscedasticity. Stars indicate significance levels of 10% (*), 5% (**), and 1%(***).

Table 7: Results: High-Quality Mayors

	Seek Re-election			
	(1)	(2)	(3)	(4)
Year 2009	-0,027	0,051	0,190	-0,014
	(0,087)	(0,139)	(0,142)	(0,165)
IMI Reform	0,013	0,039	-0,021	0,022
	(0,103)	(0,123)	(0,121)	(0,121)
IMI Reform×Year 2009	0,066	0,029	0,120	0,031
	(0,132)	(0,150)	(0,150)	(0,146)
Reform controls	No	Yes	Yes	Yes
Political + Mayor controls	No	No	Yes	Yes
Socioeconomic controls	No	No	No	Yes
NUTS 3 Dummies	Yes	Yes	Yes	Yes
Number of observations	158	158	158	158
Adjusted R2	-0,013	-0,017	0,046	0,165

Notes: All columns include NUTS 3 fixed effects (28 regional dummies). Standard errors in parenthesis are clustered at the municipal level and are robust to heteroscedasticity. Stars indicate significance levels of 10% (*), 5% (**), and 1%(***).

Table 8: Robustness: High-Quality Mayors

Excluding Taxes Lower Than 0.6

	Seek Re-election			
	(1)	(2)	(3)	(4)
Year 2009	0,123**	0,151	0,185	0,168
	(0,053)	(0,112)	(0,124)	(0,129)
IMI Reform	0,119**	0,113**	0,095*	0,097*
	(0,056)	(0,055)	(0,054)	(0,053)
IMI Reform×Year 2009	-0,162**	-0,159**	-0,141**	-0,149**
	(0,072)	(0,073)	(0,069)	(0,069)
Reform controls	No	Yes	Yes	Yes
Political + Mayor controls	No	No	Yes	Yes
Socioeconomic controls	No	No	No	Yes
NUTS 3 Dummies	Yes	Yes	Yes	Yes
Number of observations	377	377	377	377
Adjusted R2	0,013	0,013	0,085	0,079

Notes: All columns include NUTS 3 fixed effects (28 regional dummies). Standard errors in parenthesis are clustered at the municipal level and are robust to heteroscedasticity. Stars indicate significance levels of 10% (*), 5% (**), and 1% (***).

5.1 Robustness

As regards the first concern, we make the treatment and the comparison group more homogeneous, by restricting our sample to municipalities that set the IMI tax rate between 0.6 and 0.8 in 2007; this is similar to a difference-in-discontinuity design (Gamalerio, 2017). Table 8 shows that the magnitude and significance of the interaction coefficient remains significant, with approximately the same magnitude. Hence, the impact of the reform remains, even when the comparison group is composed of high-tax municipalities.

We have also discussed the fact that treatment municipalities are more populous and urban than the comparison ones. Moreover, it may be that high-quality mayors are spatially concentrated in these areas. Table 9 and Table 10 presents the results for a subsample that excludes municipalities in the metropolitan areas of Lisbon and Oporto, and coastal areas, respectively. The coefficient of interest is still negative, statistically significant, and has about the same magnitude as before.

To further address the concern that the results be driven by some particular geographical area of the country, we run the regressions excluding each of the NUTS 2 regions in turn. The results are presented in Table 11 and show that the coefficient of interest is robust to this test.

Table 9: Robustness: High-Quality Mayors

Excluding Taxes Lower Than 0.6 & Metropolitan Areas

	Seek Re-election			
	(1)	(2)	(3)	(4)
Year 2009	0,113**	0,142	0,153	0,144
	(0,054)	(0,113)	(0,127)	(0,133)
IMI Reform	0,113*	0,106*	0,095*	0,099*
	(0,057)	(0,057)	(0,057)	(0,056)
IMI Reform×Year 2009	-0,170**	-0,168**	-0,122*	-0,124*
	(0,075)	(0,075)	(0,071)	(0,071)
Reform controls	No	Yes	Yes	Yes
Political + Mayor controls	No	No	Yes	Yes
Socioeconomic controls	No	No	No	Yes
NUTS 3 Dummies	Yes	Yes	Yes	Yes
Number of observations	335	335	335	335
Adjusted R2	0,024	0,025	0,103	0,089

Notes: All columns include NUTS 3 fixed effects (28 regional dummies). Standard errors in parenthesis are clustered at the municipal level and are robust to heteroscedasticity. Stars indicate significance levels of 10% (*), 5% (**), and 1% (***).

Table 10: Robustness: High-Quality Mayors

Excluding Taxes Lower Than 0.6 & Coastal Areas

	Seek Re-election			
	(1)	(2)	(3)	(4)
Year 2009	0,112*	0,134	0,196	0,173
	(0,060)	(0,134)	(0,141)	(0,147)
IMI Reform	0,137**	0,132**	0,115**	0,120**
	(0,062)	(0,061)	(0,057)	(0,057)
IMI Reform×Year 2009	-0,168**	-0,165**	-0,129*	-0,136*
	(0,084)	(0,083)	(0,077)	(0,077)
Reform controls	No	Yes	Yes	Yes
Political + Mayor controls	No	No	Yes	Yes
Socioeconomic controls	No	No	No	Yes
NUTS 3 Dummies	Yes	Yes	Yes	Yes
Number of observations	300	300	300	300
Adjusted R2	0,008	0,015	0,123	0,117

Notes: All columns include NUTS 3 fixed effects (28 regional dummies). Standard errors in parenthesis are clustered at the municipal level and are robust to heteroscedasticity. Stars indicate significance levels of 10% (*), 5% (**), and 1% (***).

Table 11: Robustness: High-Quality Mayors
Excluding Taxes Lower Than 0.6 & NUTS 2 Regions

	Seek Re-election				
Excluding	North	Center	Lisbon	Alentejo	Algarve
Year 2009	0,266**	0,149	0,196*	0,238*	0,179
	(0,105)	(0,147)	(0,116)	(0,137)	(0,135)
IMI Reform	0,080	0,121**	0,110**	0,081	0,103*
	(0,071)	(0,058)	(0,054)	(0,059)	(0,057)
IMI Reform×Year 2009	-0,176**	-0,182**	-0,149**	-0,146*	-0,157**
	(0,084)	(0,088)	(0,068)	(0,076)	(0,072)
Reform controls	Yes	Yes	Yes	Yes	Yes
Political + Mayor controls	Yes	Yes	Yes	Yes	Yes
Socioeconomic controls	Yes	Yes	Yes	Yes	Yes
NUTS 3 Dummies	Yes	Yes	Yes	Yes	Yes
Number of observations	267	253	378	323	371
Adjusted R2	0,087	0,068	0,104	0,113	0,098

Notes: All columns include NUTS 3 fixed effects (28 regional dummies). Standard errors in parenthesis are clustered at the municipal level and are robust to heteroscedasticity. Stars indicate significance levels of 10% (*), 5% (**), and 1% (***).

Finally, we consider the assumption that municipalities must be on parallel trends in the pre-treatment period. First, as mentioned, we present the regression results for the subsample of mayors who would be term-limited in 2013, if reelected in 2009, in the Appendix. The results are not statistically significant. Second, we run a falsification test using a fake treatment year, i.e., previous elections of 2001 and 2005 in Table 12, to show that the result is specific to the time period and natural experiment used to implement the diff-in-diff strategy. As expected, the results for the interaction term are non significant, dismissing remaining concerns of a possible selection bias.

6. Concluding Remarks

Local democracy is the primary venue in which most people practise politics. The aftermath of a reform introducing a lower maximum rate of a property tax is the perfect laboratory to study whether there is an effect of having less financial dependence in the decision of incumbents to seek re-election. The analysis is based on a diff-in-diff design that allows for credible inference upon the effects of being constrained in the choice of the tax rate and the subjective mayoral decision to run again.

We are aware that using a specific natural experiment in our identification strategy enriches the internal validity of our investigation but may come at the price of reduced external validity.

Table 12: Falsification Results (2001 and 2005 elections)

	Seek Re-election		
	(1)	(2)	(3)
Year 2005	-0,038	-0,137*	-0,199**
	(0,048)	(0,073)	(0,095)
IMI Reform	0,007	-0,001	0,010
	(0,047)	(0,047)	(0,047)
IMI Reform×Year 2005	0,081	0,105	0,089
	(0,066)	(0,066)	(0,068)
Political controls	No	Yes	Yes
Socioeconomic controls	No	No	Yes
Number of observations	553	553	553
Adjusted R2	0,005	0,004	0,002

Notes: All columns include NUTS 3 fixed effects (28 regional dummies). We loose three observations for 2001 because Trofa, Odivelas, and Vizela municipalities elected mayors for the first time in those elections, and therefore, they had no incumbent. Unfortunately, the list of available controls is smaller in 2001 when compared to 2005. Political controls include Primary Expenditure PC, Debt Interest Expenditures PC, Majority dummy, Same Political Party dummy, Leftist Mandates, Abstention Rate. Socioeconomic controls include Population Density Dependency Ratio Electricity Consumption PC Unemployment Rate. Standard errors are clustered at the municipal level and are robust to heteroscedasticity. Stars indicate significance levels of 10% (*), 5% (**), and 1% (***).

This research contributes to the understanding of what motivates politicians to seek re-election. Specifically, our findings suggest that treated mayors (i.e., those who where forced to reduce their main source of fiscal revenue) are less likely to seek re-election than those in the comparison group. We conjecture that decreased local fiscal autonomy decreases the political job satisfaction which is consistent with the idea that rational politicians weigh costs and benefits of running for office. Our conclusions are robust to the inclusion of fixed effects at the Nuts 2 and 3 level. In addition, several placebo regressions comparing the previous 2001 election with the one held in 2005 verify that our results capture the period-specific effects.

References

Aidt, Toke S, Francisco José Veiga, and Linda Gonçalves Veiga. 2011. "Election results and opportunistic policies: A new test of the rational political business cycle model." Public Choice 148 (1-2):21–44.

Akhmedov, Akhmed and Ekaterina Zhuravskaya. 2004. "Opportunistic Political Cycles: Test in a Young Democracy Setting." The Quarterly Journal of Economics 119 (4): 1301– 1338.

Altonji, Joseph G, Todd E Elder, and Christopher R Taber. 2005. "Selection on Observed and Unobserved Variables: Assessing the Effectiveness of Catholic Schools." Journal of Political Economy 113 (1): 151–184.

Balaguer-Coll, Maria Teresa, María Isabel Brun-Martos, Anabel Forte, and Emili Tortosa-Ausina. 2015. "Local governments' re-election and its determinants: New evidence based on a Bayesian approach." European Journal of Political Economy 39: 94–108.

Baltrunaite, Audinga, Piera Bello, Alessandra Casarico, and Paola Profeta. 2014. "Gender quotas and the quality of politicians." Journal of Public Economics 118: 62–74.

Baskaran, Thushyanthan. 2014. "Identifying local tax mimicking with administrative borders and a policy reform." Journal of Public Economics 118: 41–51.

Beath, Andrew, Fotini Christia, Georgy Egorov, and Ruben Enikolopov. 2014. "Electoral rules and the quality of politicians: Theory and evidence from a field experiment in Afghanistan." Tech. rep., National Bureau of Economic Research.

Bertrand, Marianne, Esther Duflo, and Sendhil Mullainathan. 2004. "How Much Should We Trust Differences-In-Differences Estimates?" The Quarterly Journal of Economics 119 (1): 249–275.

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

Besley, Timothy, Olle Folke, Torsten Persson, and Johanna Rickne. 2017. "Gender Quotas and the Crisis of the Mediocre Man: Theory and Evidence from Sweden." American Economic Review 107 (8): 2204–42.

Besley, Timothy, Jose G Montalvo, and Marta Reynal-Querol. 2011. "Do Educated Leaders Matter?*." The Economic Journal 121 (554): F205–227.

Bordignon, Massimo, Matteo Gamalerio, and Gilberto Turati. 2017. "Manager or Politician? The Effect of Local Fiscal Autonomy on Political Selection." mimeo.

Bordignon, Massimo, Veronica Grembi, and Santino Piazza. 2017. "Who do you blame in local finance? An analysis of municipal financing in Italy." European Journal of Political Economy 49: 146–163.

Bosch, Núria and Albert Solé-Ollé. 2007. "Yardstick competition and the political costs of raising taxes: An empirical analysis of Spanish municipalities." International Tax and Public Finance 14 (1): 71–92.

Brender, Adi. 2003. "The effect of fiscal performance on local government election results in Israel: 1989–1998." Journal of Public Economics 87 (9): 2187–2205.

Brollo, Fernanda, Tommaso Nannicini, Roberto Perotti, and Guido Tabellini. 2013. "The Political Resource Curse." American Economic Review 103 (5): 1759–96.

Card, David. 1999. "The causal effect of education on earnings." Handbook of labor economics 3:1801–1863.

Caselli, Francesco and Massimo Morelli. 2004. "Bad politicians." Journal of Public Economics 88 (3): 759–782.

Cassette, Aurélie and Etienne Farvaque. 2014. "Are elections debt brakes? Evidence from French municipalities." Economics Letters 122 (2): 314–316.

Castro, Vítor and Rodrigo Martins. 2013a. "Is there duration dependence in Portuguese local governments' tenure?" European Journal of Political Economy 31: 26–39.

———. 2013b. "Running for office again: evidence from Portuguese municipal elections." Public Choice 156 (3-4): 677–702.

Chortareas, Georgios, Vasileios Logothetis, and Andreas A Papandreou. 2016. "Political budget cycles and reelection prospects in Greece's municipalities." European Journal of Political Economy 43: 1–13.

Dal Bó, Ernesto, Frederico Finan, Olle Folke, Torsten Persson, and Johanna Rickne. 2017. "Who Becomes a Politician?" The Quarterly Journal of Economics 132 (4): 1877–1914.

Dal Bó, Ernesto, Frederico Finan, and Martín A. Rossi. 2013. "Strengthening State Capabilities: The Role of Financial Incentives in the Call to Public Service*." The Quarterly Journal of Economics 128 (3): 1169–1218.

Drazen, Allan and Marcela Eslava. 2010. "Electoral manipulation via voter-friendly spending: Theory and evidence." Journal of Development Economics 92 (1): 39–52.

Ferraz, Claudio and Frederico Finan. 2009. "Motivating politicians: The impacts of monetary incentives on quality and performance." Tech. rep., National Bureau of Economic Research.

Fisman, Raymond, Nikolaj A Harmon, Emir Kamenica, and Inger Munk. 2015. "Labor supply of politicians." Journal of the European Economic Association 13 (5): 871–905.

Fisman, Raymond, Florian Schulz, and Vikrant Vig. 2016. "Financial disclosure and political selection: Evidence from India."

Fonseca, Mariana Lopes da. 2016. "Candid Lame Ducks." Tech. rep., CESifo Group Munich.

———. 2017. "Identifying the Source of Incumbency Advantage through a Constitutional Reform." American Journal of Political Science 6 (3): 657–670.

Fox, Richard L and Jennifer L Lawless. 2004. "Entering the arena? Gender and the decision to run for office." American Journal of Political Science 48 (2): 264–280.

Gagliarducci, Stefano and Tommaso Nannicini. 2013. "Do better paid politicians perform better? Disentangling incentives from selection." Journal of the European Economic Association 11 (2): 369–398.

Gagliarducci, Stefano, Tommaso Nannicini, and Paolo Naticchioni. 2010. "Moonlighting politicians." Journal of Public Economics 94 (9): 688–699.

Galasso, Vincenzo and Tommaso Nannicini. 2011. "Competing on good politicians." American Political Science Review 105 (01): 79–99.

Galli, Emma and Stefania PS Rossi. 2002. "Political budget cycles: the case of the Western German Länder." Public Choice 110 (3-4): 283–303.

Gamalerio, Matteo. 2017. "Fiscal Rules and the selection of politicians: evidence from Italian municipalities." mimeo.

Grossman, Guy and Delia Baldassarri. 2012. "The impact of elections on cooperation: Evidence from a lab-in-the-field experiment in Uganda." American Journal of Political Science 56 (4): 964–985.

Hibbing, John R. 1982. "Voluntary retirement from the US House of Representatives: who quits?" American Journal of Political Science : 467–484.

Isen, Adam. 2014. "Do local government fiscal spillovers exist? Evidence from counties, municipalities, and school districts." Journal of Public Economics 110: 57–73.

Jones, Benjamin F. and Benjamin A. Olken. 2005. "Do Leaders Matter? National Leadership and Growth Since World War II." The Quarterly Journal of Economics 120 (3): 835–864.

Kotakorpi, Kaisa and Panu Poutvaara. 2011. "Pay for politicians and candidate selection: An empirical analysis." Journal of Public Economics 95 (7): 877–885.

Lyytikäinen, Teemu. 2012. "Tax competition among local governments: Evidence from a property tax reform in Finland." Journal of Public Economics 96 (7): 584–595.

Martins, Rodrigo and Francisco José Veiga. 2013. "Economic voting in Portuguese municipal elections." Public Choice: 1–18.

———. 2014. "Does voter turnout affect the votes for the incumbent government?" European Journal of Political Economy 36: 274–286.

Mattozzi, Andrea and Antonio Merlo. 2008. "Political careers or career politicians?" Journal of Public Economics 92 (3): 597–608.

Mazumder, Bhashkar. 2005. "Fortunate sons: New estimates of intergenerational mobility in the United States using social security earnings data." Review of Economics and Statistics 87 (2): 235–255.

Messner, Matthias and Mattias K Polborn. 2004. "Paying politicians." Journal of Public Economics 88 (12): 2423–2445.

Moore, Michael K and John R Hibbing. 1992. "Is serving in Congress fun again? Voluntary retirements from the House since the 1970s." American Journal of Political Science: 824–828.

Mueller, John E. 1970. "Presidential popularity from Truman to Johnson." American Political Science Review 64 (01):18–34.

Padovano, Fabio. 2012. "The drivers of interregional policy choices: Evidence from Italy." European Journal of Political Economy 28 (3): 324–340.

Sakurai, Sergio Naruhiko and Naercio Aquino Menezes-Filho. 2008. "Fiscal policy and reelection in Brazilian municipalities." Public Choice 137 (1-2): 301–314.

Veiga, Francisco José and Linda Gonçalves Veiga. 2017. "Term limits and voter turnout." NIPE Working Paper Series 6: 1–37.

Veiga, Linda Gonçalves. 2012. "Determinants of the assignment of EU funds to Portuguese municipalities." Public Choice 153 (1-2): 215–233.

Appendix 1: Model Results

Recalling (2), the individual runs for politics if

$$r - m + (\alpha + \lambda m)(h - m) \geq 0$$

We now show that (2) is decreasing in m. Note that (2) is a concave quadratic function of m. Using the fact that $\lambda < 1 - \alpha < 1$, the slope of (2) ranges between

$$-1 + \lambda - \alpha(1 + \lambda) < 0, \text{ when } m \to 0$$

$$\text{and} - 1 - (\alpha + \lambda h) < 0, \text{ when } m = h$$

Therefore, the function is strictly decreasing in the relevant range $m \in (0, h]$.

Finally, we show that $\hat{m}(h)$ is increasing in h. In order to check this, note that $\hat{m}(h)$ is a zero of (2), and the partial derivative of the expression with respect to m is negative, and with respect to h is positive. A straightforward application of the implicit function theorem establishes the comparative statics result.

Appendix 2: Extra Regression Table

Table 13: Term-Limited Mayors Results

	Seek Re-election			
	(1)	(2)	(3)	(4)
Year 2009	0,158**	0,333	0,261	0,251
	(0,063)	(0,210)	(0,199)	(0,192)
IMI Reform	0,104**	0,104**	0,075*	0,075
	(0,046)	(0,046)	(0,045)	(0,046)
IMI Reform×Year 2009	-0,164	-0,151	-0,032	-0,029
	(0,105)	(0,111)	(0,101)	(0,103)
Reform controls	No	Yes	Yes	Yes
Political + Mayor controls	No	No	Yes	Yes
Socioeconomic controls	No	No	No	Yes
NUTS 3 Dummies	Yes	Yes	Yes	Yes
Number of observations	353	353	353	353
Adjusted R2	0,021	0,013	0,124	0,133

Notes: All columns include NUTS 3 fixed effects (28 regional dummies). Standard errors in parenthesis are clustered at the municipal level and are robust to heteroscedasticity. Stars indicate significance levels of 10% (*), 5% (**), and 1% (***).