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Abstract

This paper argues that high political competition does not necessarily induce policy makers to perform better as previous research has shown. We develop a political economy model and we show that when political competition is tight, and elected politicians can rely on more tax instruments, they will substitute salient taxes with less salient ones, which are not necessarily preferable. These predictions are largely confirmed using a dataset on Italian municipal elections and taxes.

JEL-Code: H110, H200, H770, H870, D700, N120.

Keywords: political competition, government, accountability, tax salience.

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1. Introduction

One of the main arguments used in favour of delegating expenditures and taxation to *elected* subnational governments is that elections are a powerful instrument to favour citizens participation to local decisions and promote political accountability, works in this area include Besley and Smart (2007), Faguet (2004), Hindriks and Lockwood (2009).

Moreover, this positive effect of elections is thought to be stronger where opposing parties face high competition to gain political consensus. There is a growing literature both in economics and political sciences recognizing that political competition improves governments' efficiency and economic outcomes. See for example the studies by Stigler (1972), and Wittman (1989, 1995) on the effect of political competition on governments' efficiency, the recent contribution by Besley, Persson and Sturm (2010) on political competition and economic growth, and the papers by Galasso and Nannicini (2009), Gagliarducci, Nannicini, and Naticchioni, (2008) and Merlo et al., (2008) on political competition and candidate performances. The common denominator to all these studies is that when parties (or candidates) face a strong political competition, voters are more able to hold them accountable. This, in turn, reduces rent diversion and induces parties (and candidates) to exert more effort.

In this paper we suggest a possible alternative story: stronger political competition does not necessarily make politicians more accountable to voters, but instead may induce an opposite behaviour. We focus on a particular aspect which is common to most countries and, we believe, plays an important role in shaping local public finance: the fact that governments usually rely on more than on type of tax to finance their public expenditures, and they have some discretionally on how to use them. It is a well-known and established fact that some taxes are more salient than others. For example Chetty, Looney, and Kroft (2009) show how voters are likely to underestimate their aggregate tax burdens from tax instruments (like sale taxes or indirect taxes in general) that are paid in small amounts over time, compared to tax instruments (like the property taxes, or income taxes) for which taxpayers make lump-sum payments of their aggregate tax liabilities on an annual basis.

Our conjecture is that when electoral competition is high, incumbent policy makers—exploiting the fact that voters are not fully informed on the costs of public goods provision—satisfy jurisdictions' budget requirements by means of substituting the more salient taxes with the less salient ones, with detrimental effects on the transparency and accountability of fiscal policy. When, instead, electoral competition is low, since the incumbent does not

face a real threat to loose elections, she can decide the mix of taxes, irrespective of their degree of salience.

To address this issue we develop a simple political economy model based on Dixit and Londregan (1998) and Arulampalam et al. (2008) which verifies and refines these intuitions. The focus is on how the degree of political competition affects politicians' choice between the available fiscal instruments. We model the behaviour of an incumbent local policy maker (*mayor*) who is responsible for providing a local public good, and has power to decide over its funding. Two different policy instruments are available: a property tax t, which is paid by everyone and has high degree of salience, and a composite fee, F, which is paid only by a fraction of voters for the provision of a service, and has lower salience. When elections take place, voters base their voting decisions both on economic grounds—i.e. looking retrospectively at the level of public good provision and taxation—and on ideology. Moreover, voters hold the mayor fully accountable for property tax t but they are not perfectly able to hold her into account when they consider the other source of fiscal revenue, F.

While it is well established that in Italy and elsewhere property taxes are the most salient local taxes—see for example Cabral and Hoxby (2010)—and they are often object of heated political debate and campaigning, other smaller taxes and fees are much less visible to voters because they are collected several times during the fiscal year, generally their amount is relatively small and also it is not easy for voters to understand how much leverage and freedom a mayor has in setting these fees. For example, McCaffery and Baron (2006) use laboratory simulations of tax setting to show that test subjects are willing to tolerate higher overall tax levels when the tax is imposed through many smaller taxes, rather than through a single large tax, because of inability of correctly remember the overall tax burden[1]. Along these lines Chetty, Looney, and Kroft (2009) use variation across US states and over time and analyse the behavioural response of alcohol consumption to variation in excise (included in price) and sales taxes (added to price) and find that consumers respond more to the more salient (excise) and less to less salient (sales) taxes. Finkelstein (2009) shows that the introduction of electronic toll collections (ETC) on U.S. roads, tunnels, and bridges has two effects: (i) it makes citizens less likely to know amount of toll they pay and (ii) it is associated with an increase in tolls; i.e. ETC increases the equilibrium toll rate by decreasing its salience.

[1] McCaffery and Baron dubbed this phenomenon the "disaggregation bias"; subjects appeared unable to hold together in their minds the cumulative effects of several small taxes.

Our model predicts that—in order to fund public good provision—parties rely relatively more on the less-salient tax when electoral competition is high, reducing the transparency of their fiscal choices, and—with that—the effectiveness of elections in efficiently selecting voters' preferred candidate.

When voters react more strongly to changes in their tax burden (i.e. when electoral competition is more relevant) mayors have stronger incentives to hide their true fiscal burden from voters, in order to be re-elected; in the opposite case—when voters do not react much to changes in public good provision or tax burden—, mayors are not subject to such electoral pressure and are free to choose the tax mix to finance the public good minding less at its electoral effect.

We then bring this prediction to the data, building a large dataset on Italian local elections and taxes for the period 1999-2008. Italian municipalities derive their main source of tax revenue from a property tax, denoted ICI. This tax, which accounts for about 33% of municipalities' own fiscal revenue, is characterised by a high degree of transparency: citizens-property owners have to pay it every year directly to the municipality where the estate is located (in one or two installments). Other salient sources of revenues in Italian municipalities are related to waste disposal (TARSU) and to the taxation of personal income,[2] which account respectively for 16% and 13% of municipalities' own fiscal revenues.

Additional revenue can be raised by Italian municipalities, *more silently*, through means of much smaller fees, for example on the issue of parking permits and certificates, or related to the occupation of public spaces and the use of public billboards etc., which account for around 38% of municipalities' fiscal revenues. The main problem with these small fees is that they are collected several times during the financial years, and they are often linked to the provision of a specific service. For these reasons, it is very difficult for voters—firstly—to have a clear picture of their overall amount, and—secondly—to impute them to the political choices of the mayors, rather than to the necessity (e.g) of covering the costs for providing these services. Generally speaking, most of these fees are calculated in a way that is unrelated to the true costs of providing particular services, and often serve as an additional source of revenues to finance the general spending needs of the local government.

From the municipality point of view, as fees are often paid to access to some service,

[2] Municipalities can apply a surtax on the personal income tax rates, i.e. they can increase the tax rate up 0.8%. This faculty is exercised by the vast majority of mayors.

their revenues are more likely to be elastic with respect to the fee itself. The property tax instead[3] is calculated applying a simple tax rate to the land-registry value of the property. In short, taxes are more transparent, and their revenues are inelastic with respect the tax rate. One may also argue that the property tax is simpler and cheaper in terms of administrative burden for the municipality itself. It is well known in the current policy debate that there are too many small taxes and fees in the Italian local tax system, which create inefficiencies.[4] It was already recognised by Buchanan (1967)[5] that fiscal illusion (or low salience) is the product of complex tax systems where multiple smaller tax instruments (as opposed to only a single comprehensive tax instrument) are employed.

The results of the empirical analysis broadly confirm the predictions of the theory. In particular we find that when the distance between the elected mayor and her opponent shrinks by 1%, the *per capita* tax revenue from ICI —the main local tax in Italy—drops by 0.80 Euros but, at the same time, revenue raised from fees for general and other services, in *per-capita* terms, increases respectively by 0.64 and 0.28 Euros. Consistently with our hypothesis, we find that electoral cycles play an important role in shaping tax/fees setting decisions and, in particular, that substitution between fees and taxes occurs mainly in the years close to elections, when politicians need more to do so for being re-elected, i.e. when political competition is high and elections are close. Moreover, we employ Regression Discontinuity Design to show that mayors supported by the two main Italian political coalitions, namely centre-left and centre-right, exhibit a similar response to different degrees of political competition, reinforcing the hypothesis that tax setting behaviour is not related to parties' preferences or parties targeting special interest groups.

This is not the first attempt in the literature to analyse the effect of government financing on political accountability. However, as far as we know, this is the first attempt to relate this to the degree of political competition. The related literature is as follows. Milesi-Ferretti (2003) studies the effect of fiscal rules on economics outcomes, Alt and

[3] About 80% of Italians own the house they live in, and ICI property tax on the main dwelling (as opposed to businesses, farmland, holiday or rented properties) is the main component of property tax revenues, other than being the one on which electoral campaigns usually concentrate on.

[4] There is an outgoing proposal to reform Italian local tax system and replace the current taxes and fees with a single Service Tax, but despite the fact that the issue has been debated for years and its introduction has been agreed in principle by the Italian parliament its implementation has not occurred yet.

[5] "*... to the extent that the total tax load on an individual can be fragmented so that he confronts numerous small levies rather than a few significant ones, illusionary effects may be created.*" James Buchanan, Public Finance in Democratic Process: Fiscal Institutions and Individual Choice 135 (1967)

Dreyer Lassen (2003) look at government's choice between taxes or debt, Coate and Morris (1995) investigates the hidden financing of interest groups, Bordignon and Minelli, (2001) consider the trade off between accountability and efficiency. Among all contributions the paper more closely related to ours is Bordignon and Piazza (2010) which uses a dataset on municipalities in the Piedmont Region in Italy to investigate the effect on probability of mayor's re-elections after a tax reform introduced the possibility for majors to partially substitute a more accountable source of tax revenue (the local property tax) with a less transparent one (the local income tax). Using arguments similar to ours, their analysis suggests that the availability of these two tax instruments gives incompetent mayors a cheap way to hide themselves, allowing them to be more easily re-elected.

The paper is organised as follows. The next section introduces the economic environment and the model. Section 3 provides some background information on Italian local electoral and tax systems as well as data description. Our empirical strategy and main results are in section 4 and robustness checks are in section 5. Conclusions and discussions are in the last section of the paper.

2. The Theoretical Framework

We develop a simple model of political competition based on Dixit and Londregan (1998), Arulampalam et al. (2008), which focuses on the incentive that political parties face to replace salient taxes with less salient ones when electoral competition is high.

2.1. The Economic Environment

A local incumbent mayor is responsible of providing a local public good, and has power to decide over its funding. The public good g has a price p, normalised to 1 for simplicity and without loss of generality. Voters receive utility from consuming the public good, but are not aware of its price. Two different policy instruments are available to the mayor: a property tax t, which is paid by everyone and has high degree of salience, and a fee F, which is paid only by a fraction of voters, and has lower salience. This fee can be thought as aggregating in a simplified way all the other non-tax sources of revenues available to municipalities, such as planning permission fees, parking tickets, burial fees, fees for the use of public billboards or public spaces, the price of issuing vital record certificates. Unlike taxes, these fees are strictly speaking not compulsory, in the sense that they are paid to have access to services which citizens may decide to purchase or not, and unlike

prices of private goods, the amount is generally not linked with the cost of providing these goods or services, on which the municipality usually exerts full monopoly power.

As this large array of revenues hardly ever comes up in the public debate, it is often difficult for voters to understand how much leverage and freedom a mayor has in setting these fees, and how much are instead set by, for example, national laws. For example, the cost of issuing an ID card or the cost of a parking ticket is the same all over Italy, while planning permission, burial fees, and advertising prices are more freely set by each municipality.

This has two main implications, which will be reflected in our modelling choice: firstly, the revenues coming from these fees, unlike property tax revenues, are affected by the fee itself; in other words, one cannot decide not to pay property tax,[6] but one may decide not to put an advertising poster, or postpone building an extension to one's property if the relevant fee is too expensive. Secondly, voters are not perfectly able to hold mayors into account when they consider these particular sources of revenues, while the property tax is often object of heated political debate and campaigning. As the great majority of Italian households owns the house they live in, it seems reasonable to assume that voters fully discount the effect of this tax on them when voting for a given mayor. This implies, in more general terms, that fees are less salient than taxes.

There is a continuum of voters of mass 1. Voters are homogeneous with respect to their preferences over the public policy, but differ in their ideology embodied by two existing parties, one supporting the incumbent mayor and the other against her. Ideologies are distributed according to a uniform distribution defined over the interval $\delta_i \sim [-{}^{1}/_{2\psi}, +{}^{1}/_{2\psi}]$. Voters in the negative part of the ideology spectrum prefer the party of the incumbent mayor over that of the challenger, and this preference is stronger the more distant is the voter's ideology from the origin 0. Following a long tradition (Dixit and Londregan (1998), Arulampalam et al. (2008)), we interpret the exogenous parameter ψ as the sensitivity of the locality's voting behaviour to changes in policy. In other words, a municipality with a higher level of ψ is considered electorally more competitive.

Citizens vote retrospectively conditioning their choice on the ideology of the candidates and on the public policies implemented by the local governments. By public policy we mean the positive effect of public good provision, which is funded through taxes and

[6] One may, of course, sell its property, but the buyer would still have to pay the tax. Moreover, in the Italian case, the tax base is the land-registry value, so that tax revenues are unaffected by housing market fluctuations.

fees. Every voter pays the property tax t, while only a fraction $n < 1$ pays the fee F.[7] More specifically, as the municipality partially sells these fee-based services in a monopolistic regime, we assume that the number of people purchasing the fee-based services is negatively related with the fee itself, and with disposable income in particular. More precisely:

Assumption 1.

$$0 > \frac{\partial n}{\partial t} > \frac{\partial n}{\partial F}, \frac{\partial^2 n}{\partial t \partial F} \leq 0, \ (1 + n_t F) > 0, n_{tF} < 0$$

These assumptions imply that both raising taxes and fees has a negative effect on the number of people "choosing" to pay the fee, and this effect is stronger the higher the fee. Moreover, it implies that increasing taxes has always a positive effect on total revenues, irrespective of the negative effect it may have on the number of fee payers.

Voters who pay the fee attribute only a fraction $s < 1$ to the mayor's will, for the reasons spelled out in the previous paragraph.[8]

Voters' utility is negatively affected by local taxes and fees (adjusted for their salience), as they reduce private consumption, and positively affected by the consumption of a local public good $g = t + nF$. Finally, we assume that voters can perfectly observe the amount of g provided but are not aware of the price of the public good p.

More precisely, a voter's i is going to vote for the incumbent if:

$$u(g) - t - sF - \delta_i \geq 0 \tag{2.1}$$

$$u(g) - t - \delta_i - \delta_i \geq 0 \tag{2.2}$$

according to whether he or she has to pay a fee (2.1) or not (2.2), and where u is a strictly concave and monotonically increasing function in g.

Following Arulampalam et al. (2008) and Solé-Ollé and Sorribas-Navarro (2009), we assume that mayors care simultaneously about the votes accruing to the parties they belong to, and about the public good produced. This implies that incumbent mayors share with voters the preference for public good, but are also office-motivated.

The utility of the incumbent mayor can be written as:

[7] We assume as well that paying the fees and ideology are uncorrelated.

[8] One could also include in this parameter s the fact that fee-payers are more likely to be non-residents.

$$U^G = h(g) + V \tag{2.3}$$

where h is a strictly increasing and concave function, and V is the share of votes accruing to the incumbent mayor, and U^G is strictly concave.

2.2. Theoretical Results

Let's first of all calculate what is the expected amount of votes the incumbent mayor, given the uncertainty on the realisation of the opinion shock and the amount of fees being paid/collected.

Lemma 1. *The share of votes the incumbent mayor expects to receive, given the tax and fee level he or she sets, is:*

$$\begin{aligned} V &= \frac{1}{2} + \psi X \\ \text{with } X &= \frac{1}{2}\left[u(t + nF) - t - nsF\right] \end{aligned}$$

As we can see, raising taxes or fees has an ambiguous effect, as it simultaneously raises public good provision and decreases disposable income. Secondly, increasing fees (as opposed to taxes) has the advantage of impacting less on voters' perception of their disposable income, and the disadvantage of negatively affecting the demand for fee-based services.

We can then derive the incumbent mayor's first-order conditions given his or her utility (2.3)—where subscripts indicate partial derivatives:

$$U_t^G \quad : \quad (1 + n_t F)\left[h'(g) + \psi(u'(g) - s\right] + \psi\ (s - 1) = 0 \tag{2.4}$$

$$U_F^G \quad : \quad (n + n_F F)\left[h'(g) + \psi(u'(g) - s\right] = 0 : \tag{2.5}$$

Focusing on interior solutions, we can derive the following testable prediction:

Proposition 1. *Mayors of jurisdictions with stronger electoral competition set lower taxes and higher fees.*

Proof in Appendix.

As we chose to keep the model as general as possible, we are not able to say what would be the effect of electoral competition on overall spending g, as it is instead highly dependent on the functional forms for parties' and voters' utilities.

3. Background Information and Data

In this section we present some relevant background information on the Italian local electoral system and public finance. In particular we describe the main characteristics of the electoral system and the basic structure of local taxation.

3.1. Italian Institutional Framework

There are more than 8,000 municipalities (*comuni*) in Italy, 90% of which with a population below 15,000. *Comuni* are ruled by a local government (*giunta*), headed by an elected mayor (*sindaco*), who stays in power for five years[9] and is subject to a two-term limit. Mayors are in charge of appointing the other members of the *giunta*, whose competencies are primarily in the areas of land management and environment (water, sewage, public hygiene), local transport, local police, culture and recreation, education (nursery schools, training programmes). They also have some discretionary powers on how to raise fiscal revenue to finance local public expenditures, more on this in the next section.

In 1992, a major electoral reform took place in Italy; the main objective of the reform was to increase political accountability at local level by introducing the direct election of mayors under plurality rule. The reform established a single round election for *small* municipalities (i.e. below 15,000 inhabitants), and a runoff system for *large* municipalities (i.e. above the 15,000-inhabitant threshold). In particular, in *small* municipalities, each party (or coalition of parties) presents a list of candidates for the council and supports one mayoral candidate, voters then express one vote jointly for the mayor and the associated council list. The mayoral candidate who gets the majority of votes is elected and the associated city-council list is awarded 2/3 of all seats. In *large* municipalities, instead, parties (or coalitions of parties) present lists of candidates for the council and support one mayoral candidate. At the first round, voters express two votes, one for the mayor and one for the council. A mayoral candidate is elected only if he or she obtains more than 50% of votes. If no mayoral candidate obtains an absolute majority of votes, in two weeks time, the two top candidates run again in a second round, and the candidate who get the most votes is elected mayor. As in the single-round plurality system, the city-council lists associated with the winning candidate are awarded an absolute majority of seats in the council.[10]

[9] Note that mayors elected before 2000 were subject to a 4-year term instead.

[10] In the vast majority of cases the lists supporting the winning mayor are awarded 60% of the city-council seats. This rule has two (rare) exceptions: firstly, if the coalition of lists supporting the winning

The two-tier system of election according to the size of the population have generated also different political incentives: in smaller municipalities, the incentives is for parties to join together in a single list that supports a single mayoral candidate, while in larger municipalities, the incentive is for parties to form explicit coalitions behind a single mayoral candidate, and at the same time to each maintain its separate (albeit coalised) list for the city council. This has also implied that in smaller municipalities the occurrence of ad-hoc voters' associations (*lista civica*) supporting a mayor is much more frequent than in larger municipalities, where instead one usually finds the national parties running under their names. This of course does not imply that party politics is less lively in municipalities just below the 15,000-inhabitant threshold. It does nevertheless make it very difficult to code correctly a mayor as left- or right-wing, as the name of the list under which was elected is more likely to disguise his or her partisan belonging. Therefore we construct our sample considering only municipalities above the 15,000-inhabitant threshold.

Generally speaking, in our sample period the political system was dominated by two large electoral cartels that alternated in governments in every tier. At the national level, a right-wing coalition chaired by Silvio Berlusconi and his party Forza Italia ruled Italy from 2001 to 2006. The left-wing coalition, going from Communist parties to left-wing Christian Democrats, ruled from 1996 to 2001, and then again from 2006 until 2008. The same coalitions generally run for local elections as such, supporting joint mayoral candidates, such that the local and the national political debate appeared quite coherent with each other. From official data on mayors published by the Interior Ministry we are able to see each mayor's political allegiance (i.e. under which party-label he or she ran for elections); considering municipalities above the 15,000-inhabitant threshold a full list of parties coded by political coalitions in provided in Table A1 in the Appendix where it is possible to check that we have not been able to assign to the centre-left or centre-right majority only a very small number of municipalities that we coded as "independents".

3.2. Local government financing

Municipalities' revenues come from two main sources: transfers from upper levels of government (mainly central and regional governments) and own revenues (from own taxes

mayor gets less than 40% of votes and the mayor is elected at the first round; secondly, if instead a second round occurs, and the lists supporting the losing mayoral candidate obtained more than 50% of votes in the first round. In these two circumstances, city council seats are distributed according to a pure proportional-representation rule. These occurrences are practically extremely rare.

and fees). [11]

There are two types of own revenue recorded in Italian municipalities' Final Budget Accounts: (i) revenue from taxes and (ii) revenue from fees. The main and, often subtle, formal difference between them is that while both are a charge paid to the government by individuals or by a business, a tax is levied as a part of the common burden while a fee is specifically applied for the use of a service and unlike taxes, it *should* be directly linked to the cost of providing the service.

The main source of *tax* revenue for Italian municipalities is a property tax, called ICI, introduced in 1992 and applied to real estate. This tax, which accounts for about 33% of municipalities' own revenue, is characterised by a high degree of transparency: property owners have to pay it every year directly to the municipality where the estate is located (in one or two installments). The tax base is represented by the cadastral income and mayors are free to set the tax rate within a given boundary (0.4 and 0.7% of cadastral income) and also have the power to lower the tax burden of resident-home-owners by imposing a discounted tax rate for residents. Another important source of *tax* revenue in Italian municipalities come from the waste disposal tax (TARSU), which is, similarly to ICI, calculated on land registry values, and for which municipalities enjoy total freedom in tax rate setting. Finally other minor sources of tax revenues are the taxation of personal income, through the national income-tax surcharge and electricity surcharge.

Additional own revenues can be raised by Italian municipalities, through means of a number of much smaller *fees:* (i) on the issue of parking permits and certificates, (ii) related to the occupation of public spaces and areas, (iii) on the use of public billboards etc., which account for around 38% of municipalities' own revenue. The common denominators of these fees is that they are comparatively small, they are generally paid several times during the year and, as mentioned earlier, they are linked to the provision of a service by the local authority.[12] For all these reasons, it is very difficult for voters to have a clear picture of their overall amount. As fees are paid in exchange of a specific service, it may be more difficult for voters to impute them to the political choices of the mayors, rather

[11] The use of debt instrument is strongly restricted by the so-called "Internal Stability and Growth Pact", through which the central government limits the possibility of local authorities to incur in debts, in order to comply with the EU constraints on deficit and debt moreover the Art.119 of the Italian Constitution states that local governments can use debt financing only to cover capital expenditures. Therefore, as our analysis is focused on current expenditures, we abstract from considering the debt as an active source of financing.

[12] In the Appendix (Table A2) a full list of fees is provided.

than to the necessity (e.g) of covering the costs for providing these services. Generally speaking, most of these fees are indeed calculated in a way that is unrelated to the true costs of providing particular services, and often serve as an additional source of revenues to finance the general spending needs of the local government.

The subdivision of municipal taxes and fees according to their level of salience is provided in more details in the next section.

3.3. Data Description and Variables' Definition

Our dataset includes municipal financial data, census data, and ballot data of the municipal elections from 1999 to 2008. The large number of municipalities implies that every year local elections can be observed. We have restricted our analysis to large municipalities, i.e. with a population over 15,000 residents, for the reasons spelled in the previous section and that can be summarised as follows: firstly, smaller polities are subject to different coalition-formation dynamics; secondly, very small municipalities are dominated by voters' association which can not be considered neither related to the centre-left nor to the centre-right coalition. The exclusion of *small* municipalities, outliers and municipalities with missing values from our dataset leaves us with a sample of over 500 local councils.

Our theoretical model predicts that there is a relationship between local governments' preferred mix of tax instruments and the extent of electoral competition; i.e. as municipalities become electorally more competitive, mayors want to reduce the electoral impact of their fiscal choice, so they shift tax revenue collection more towards the less salient instruments, compared to the case where they can runs safely for re-election.

We begin with describing our main variables of interest (the dependent variables of the empirical model), which are measures of *salient* and *non-salient* fiscal instruments. In our theoretical model a property tax, t, is the salient fiscal instrument while fees, denoted F, are the non-salient one. In the empirical part of the paper we use, with some modifications, municipalities' final budget accounts classification *revenues from local taxes* to proxy for the salient instrument, and *revenues from local fees*, for the *non-salient* one.

In particular salient source of revenues (t in our theoretical model) include: the property tax, taxes related to waste disposal management, the municipal income tax and the electricity surcharge. The local property tax (ICI) is undoubtedly the main and most salient tax for Italian municipalities. As a main measure we compute the per capita value calculated as the property tax revenue divided by the resident population (ICI per capita), we also include values of the "reduced" tax rate, applied only to residents, and

the standard tax rate, applied to everybody else. Second, we calculate per capita values of the waste disposal tax (TARSU). Like ICI, TARSU is paid once a year directly to the council but it is (politically) much less important and the tax revenue that is able to raise is much lower. Third, we aggregate the per capita tax burden coming from other local smaller taxes, which includes mainly the Income Tax Surcharge and the electricity surcharge. Clearly, this latter group of taxes is either much less visible to voters or less directly imputable to mayors compared to the property tax and the waste disposal tax, for more on this see Bordignon and Piazza (2010).

Instead, non-salient sources of revenue (F in our theoretical model) are grouped in two categories: (i) *Fees for General Services,* which includes the long list of small fees reported in the Final Budget Accounts under the voice *revenues from local fees* (burial fees, fines, etc.), (ii) *Fees for other services* which includes municipal advertising taxes, fees for the occupation of public spaces and areas and fees related to the issue of vital record certificates.

In order to make them comparable across municipalities we compute the per-capita values of all monetary variables and we also deflate them using the consumption price index with base 2010 provided by the Italian Institute of Statistics (ISTAT).

A detailed list of municipal taxes and fees is provided in Table A2 in the Appendix. Table 1 reports, summary statistics for local taxes and fees, breaking down the figures by type.

Table 1.Summary statistics of dependent variables.

Description	**Mean**	**Std. Dev.**	**Min**	**Max**	**Obs.**
Tax ratio (salient taxes over total local taxes and fees) - %	65.87	10.90	22.15	92.25	2771
Property tax - real euro per capita	209.31	90.25	8.22	647.96	2771
Property tax rate (reduced rate) - ‰	5.02	0.66	0	7	2771
Property tax rate (standard rate) - ‰	6.39	0.66	4	7	2771
Waste management taxes - real euro per capita	102.39	70.93	0	976.22	2771
Other taxes (municipal income tax, electrical surcharge) real euro per capita	53.51	34.74	0	278.07	2771
Local Fees for General services (excluding waste management) real euro per capita	175.00	111.04	10.51	848.26	2771
Local Fees for Other services - real euro per capita	27.90	30.41	0	260.06	2771

Finally, in order to analyse taxes and fees setting simultaneously we compute the tax ratio, TR, as the share of per capita local taxes, to proxy for the salient t, (i.e. revenues from ICI, TARSU and other taxes) and over total fiscal revenue $(t + F)$, as reported in Table 1, this ratio ranges from 22% to 92%.

Table 2. Summary statistics of political variables

Description	Mean	Std. Dev.	Min	Max	Obs.
Margin of victory (municipal election) - %	18.86	16.07	0.03	74.27	4163
Margin of victory (regional election, at municipal level) - %	18.95	12.89	0.04	63.13	3718
Alignment dummy - 1=local gov. aligned with central gov.	0.50	0.50	0	1	4163
Incumbent dummy - 1 = the incumbent is reelected	0.38	0.49	0	1	4163
Local government coalition - 1=left, 0=right	0.63	0.48	0	1	4163
Electoral cycle - year from election	2.02	1.30	0	5	4163
Central government coalition - 1=left, 0=right	0.34	0.47	0	1	4163

Next, our key explanatory variable is a measure of political competition, PC, to proxy for Ψ in each municipality over time. An obvious measure for *ex ante* political contestabilty is the *lagged* margin of victory in mayoral election results ($l.MV$), calculated as the difference between the votes obtained by the winning mayor and the votes obtained by the runner-up.[13] Values of $l.MV$ close to zero refer to mayors, who won with a very small margin, and so electoral competition is assumed to be high; high values correspond to municipalities and periods with less political competition, since the mayor won the electoral race with a large margin. Moreover, as a robustness check, we compute an alternative measure of political contestability: we construct the margin of victory using municipality-specific vote share of centre-right and centre-left coalitions in the *previous* regional councils elections disaggregated at the municipal level. Regional councils are elected contextually to regional governors, however voters can vote split their vote, i.e. they cast two separate votes: one for the presidential candidate, and one for the party lists running for the regional council.[14] It is reasonable to assume that citizens tend to cast their vote more ideologically for the election of the councils and to put more weight,

[13] If the mayor is elected in the first round (because he or she got 50%+1 votes), the first-round results are used, if a second round is held, then second-round results are used instead.

[14] The president is elected through a first-past-the-post system. The winning president is also automatically awarded 20% of the council through a so-called regional list. The remaining 80% of the council is elected through proportional representation, in large districts corresponding to the provinces (the intermediate tier of local government, between the municipalities and the region). Each province-level party list is clearly and explicitly linked with presidential candidate. This system, similarly to the mayoral one, allows the president to have a stable and consonant working majority in the council. Split vote is allowed, that is, one can vote for, say, a party-list A and simultaneously for a presidential candidate Z, irrespective of the fact that the district list A is linked with another presidential candidate, and that presidential candidate Z is linked with different party lists.

instead, on candidates' personal *charisma* when they decide on the governors. So, the former should constitute a good representation of *ex ante* distribution of ideologies across municipalities. Finally, for the ease of exposition we define $PC = -l.MV$ as our measure of political competition.

Moreover in order to control if our results are effectively driven by political competition rather than by other municipalities' political attributes, we employ additional political controls. First, to take into account mayor's political preferences, we construct an indicator variable, *local government coalition* dummy, taking the value of one if the mayor is supported by a left-wing coalition and zero otherwise. Second, to control for the effect of central government' policy preferences on local tax setting, we include a *central government coalition* dummy taking the value of one if the central government is run by a left wing coalition and zero otherwise. In order to test for a possible alignment effect on tax policies (occurring when the mayor and the prime minister share the same political coalition), we construct an *alignment* dummy, taking the value of one if the mayor is aligned and zero otherwise. We also address the issue that tax setting may exhibit a cyclical behaviour by including an *electoral cycle* control, which measures the number of years from last elections (i.e. the variable takes value of zero the year of the election, one the following year and so on, the maximum value being four and corresponding to the year before new elections). Finally, since a mayor who cannot re-run for elections (because of the two terms limit) may face different incentives compared to a mayor who can run again, we include an *incumbent* dummy, which is equal to one if the mayor is at her second mandate and zero otherwise. Detailed summary statistics for these variables are presented in Table 2.

Table 3. Summary statistics of other controls.

Description	Mean	Std. Dev.	Min	Max	Obs.
Resident population	57,298	160,217	14,650	2,769,012	4163
Population below 15 - % over total pop.	14.63	3.23	8.24	28.80	4163
Population over 65 - % over total pop.	17.24	4.49	3.80	29.53	4163
*Illiterate people - % over total pop.	1.32	1.15	0.18	7.71	4163
*Graduates - % over total pop.	6.89	2.89	1.53	17.29	4163
Income (no real estate) real euro per-capita	16,827.27	3,283.64	7,602.59	32,319.21	4162
Income from real estate	1,736.37	532.42	537.18	4,389.78	4162
% of resident taxpayers	83.24	3.55	69.22	93.20	4162
*Unemployed - % over total active pop.	12.48	9.48	2.55	49.30	4163
*Service sector workers - % over total workers	61.59	10.29	23.79	84.59	4163
*Self-employed workers - % over total workers	23.16	3.93	13.78	39.14	4163
Total current grants - real euro per-capita	246.18	147.75	3.60	1,217.15	2771
Local current expenditure - real euro per-capita	829.58	227.71	30.54	1,856.29	2771
deficit - real euro per-capita.	170.81	239.13	0	2,404.12	2771
*Rural degree - 1=low, 3=high	2.39	0.61	1	3	4163
*Altimetirc zone - 1=low, 5 = high	4.08	1.11	1	5	4163

**Time invariant*

Other control variables we employ in the regressions are the following:

1. *Socio-demographic* and *geographical variables*: resident population, proportion of population less than 14 and over 65 years old, proportion of residents with an university degree and illiterate, altimetric zone, rural degree. These variables are collected from the Statistical Atlas of Municipalities, yearly issued by the Italian National Statistical Institute (ISTAT).

2. *Economic variables*: total income from real estate, total income different from real estate, percentage of resident taxpayers, proportion of unemployed, of self employed, and of residents working for the service sector. The sources for these variables are ISTAT, and the Ministry of Finance.

3. *Public Finance variables:* municipalities total public expenditures, total grants from the central government and government deficit. All these variable are lagged of one year in the empirical model. The sources for these variables are the Ministries of Finance and of Internal Affairs.

We observe a lot of variation in the data, starting from the size of the municipalities, demographic characteristics, economic profile, to political and public finance data. Descriptive statistics for these variables are reported in Table 3.

4. Empirical Strategy and Results

We test our the theoretical predictions in two ways. We first look at the link between t and F and the degree of political competition by estimating the tax ratio equation, TR; we then look at convergence of fees and taxes setting in close races.

4.1. Tax Ratio Equation

The driving mechanism illustrated by Proposition 1 is that political competition changes policy makers' incentives on how to raise tax revenue. In particular, our theoretical model suggests that when electoral competition is strong, mayors raise a higher proportion of tax revenue by increasing mean of the less salient instruments and reduce the use of the salient ones compared to the case when electoral competition is low. To examine this link empirically we estimate regressions of the form:

$$TR_{it} = \alpha_i + v_t + \delta PC_{it} + \varepsilon_{it} \tag{4.1}$$

where TR_{it} represents the proportion of the salient instrument (t) as a share of overall fiscal revenues $(t+F)$ in municipality i at time t , PC_{it} is our measure of political competition, α_i and v_t are municipality and year effects, and ε_{it} is an i.i.d. error term. We estimate the panel data model reported in equation (4.1) using the Feasible-GLS estimator and Mundlak (1978) approach. [15] Finally, we also report robust standard errors adjusted for clustering at the municipal level.

The baseline results are presented in Tables 4 and 5. In Table 4 our measure of political competition is constructed on the lagged MV in mayoral elections while in Table 5 we use the lagged values of MV calculated on regional elections. Starting from Table 4: the first column contains estimates of the basic specification in (4.1). We find that there is a strong positive link between the extent of political competition and tax policy decisions. For example, in this specification, without other controls, one percentage point increase in incumbent's political competition is associated with a decrease in the tax ratio of 0.15 percentage points.

[15] This approach consists of including among the regressors municipal means of each time-variant variable. In this way it is possible to include among the regressors also variables that measure time invariant characteristics of each local government, such as the rural degree and the altimetric zone obtaining, at the same time, estimates equivalent to those one would have had using as estimator With-in-the-Group or Least Squares Dummy Variables.

The remaining columns of Table 4 present the results when additional controls are added to the baseline specification in (4.1). In particular, in column two, we include our political variables: the incumbent, the alignment dummy, the local and the central government coalition dummies as well as the electoral cycle (in linear form and squared). In column three, these political dummies are interacted with our political competition measure, PC, and, in the last column, the model is augmented with the full set of controls described in the previous section. Apart from the electoral cycle dummies and the central government coalition dummy the other additional political controls are not significant.

There are some interesting results that need to be emphasized. First, that there is no evidence that mayors supported by left-wing coalitions behave differently from mayors supported by right-wing one, when they make decisions on the source of fiscal revenues. Second, that electoral cycles play, instead, an important role in shaping taxes and fees setting decisions, with all the related coefficients being highly significant. The interpretation of this result is that the substitution between fees and taxes occurs mainly in the years close to elections and reaches its minimum around the middle of the five year period. Third, that the fact the mayor cannot re-run in the following term because of term limit (i.e. incumbent equal to one) makes her less likely to rely heavily on fees rather than taxes when electoral competition is high. Moreover, our results are not sensitive to the inclusion of additional controls as shown in the last column of Table 4.

Table 4. Tax ratio equation (MVcalculated on mayoral elections)

Political competition	-0.1551***	-0.1508***	-0.1520***	-0.1908***
	(0.0228)	*(0.0229)*	*(0.0355)*	*(0.0417)*
Alignment dummy - 1=local gov. aligned with central gov.		0.168	0.03	0.0151
		(0.2560)	*(0.3871)*	*(0.5289)*
Electoral competition (lag) X alignment			-0.0101	0.0092
			(0.0166)	*(0.0222)*
Incumbent dummy - 1 = reelected incumbent		-0.0161	0.6828	1.0530*
		(0.3579)	*(0.5515)*	*(0.6337)*
Electoral competition (lag) X incumbent dummy			0.0346	0.0598**
			(0.0229)	*(0.0237)*
Local government coalition - 1=c.left, 0=c.right		1.5301***	1.1469	0.8813
		(0.5760)	*(0.7090)*	*(0.9411)*
Electoral competition (lag) X coalition			-0.0348	0.0236
			(0.0392)	*(0.0455)*
Electoral cycle - year from election		0.4670*	0.8680**	1.4246***
		(0.2706)	*(0.4056)*	*(0.4908)*
Electoral cycle square		-0.1633**	-0.2502**	-0.3818***
		(0.0657)	*(0.1003)*	*(0.1154)*
Electoral competition (lag) X electoral cycle			0.0236	0.0229
			(0.0204)	*(0.0257)*
Electoral competition (lag) X electoral cycle square			-0.0054	-0.006
			(0.0049)	*(0.0060)*
Municipal dummies	yes	yes	yes	yes
Year dummies	yes	yes	yes	yes
Population brackets dummies	yes	yes	yes	yes
Regional dummies	yes	yes	yes	yes
Control variables	no	no	no	yes
Mundlak approach	yes	yes	yes	yes
Observations	2771	2771	2771	1897

*Clustered standard errors in brackets, * significant at 10%; ** significant at 5%; *** significant at 1%*

In order to check wether or not our results are sensitive to the way *ex ante* political contestability is measured, we re-run the same regressions as the ones displayed in Table 4, but using our second measure of political competition, based on the regional elections' margin of victory.

Table 5. Tax ratio equation (MVcalculated on elections of Regional Councils)

Political competition	-0.1145***	-0.1139***	-0.1517***	-0.1060**
	(0.0208)	*(0.0213)*	*(0.0366)*	*(0.0483)*
Alignment dummy - 1=local gov. aligned with central gov.		-0.146	0.1741	-0.0373
		(0.2824)	*(0.4640)*	*(0.6385)*
Electoral competition (lag) X alignment			0.0176	0.0161
			(0.0197)	*(0.0253)*
Incumbent dummy - 1 = at first mandate		0.3965	0.9271	0.1019
		(0.3736)	*(0.6888)*	*(0.7906)*
Electoral competition (lag) X incumbent first mandate			0.0285	0.002
			(0.0324)	*(0.0366)*
Local government coalition - 1=c.left, 0=c.right		1.1935**	1.091	0.2122
		(0.5936)	*(0.8116)*	*(1.1333)*
Electoral competition (lag) X coalition			-0.0084	-0.0075
			(0.0344)	*(0.0456)*
Electoral cycle - year from election		0.5385*	1.2652***	1.6031***
		(0.2965)	*(0.4897)*	*(0.5922)*
Electoral cycle square		-0.1854***	-0.3631***	-0.3930***
		(0.0719)	*(0.1215)*	*(0.1432)*
Electoral competition (lag) X electoral cycle			0.0381*	0.0338
			(0.0220)	*(0.0253)*
Electoral competition (lag) X electoral cycle square			-0.0093*	-0.0065
			(0.0054)	*(0.0063)*
Central government coalition - 1=c-left, 0=c-right		-5.4190***	-5.5354***	2.7375***
		(1.1761)	*(1.1539)*	*(0.5994)*
Municipal dummies	yes	yes	yes	yes
Year dummies	yes	yes	yes	yes
Population brackets dummies	yes	yes	yes	yes
Regional dummies	yes	yes	yes	yes
Control variables	no	no	no	yes
Mundlak approach	yes	yes	yes	yes
Observations	2390	2390	2390	1612

*Clustered standard errors in brackets, * significant at 10%; ** significant at 5%; *** significant at 1%*

The coefficients for these estimates are displayed in Table 5. The main feature is that there is not substantial difference in the estimated coefficients in the two tables, both in term sign, significance and magnitude.

In synthesis, the emerging picture confirms our hypothesis that mayors who are in more competitive municipalities, in the period of elections, substitute the more visible and politically "costly" source of revenues (taxes) with the less salient fees.

4.2. Convergence of taxes and fees choices in close races.

In the previous section we have shown that mayors are more likely to set higher fees and lower taxes in contestable elections, as predicted by Proposition 1 in our theoretical

model. In this section we address whether this behaviour is common to both centre-left and centre-right mayors.

Our empirical strategy is to exploit the fact that mayors' victory changes discontinuously at 50% of mayoral candidates' vote share. This allows us to identify a possible coalition effect in taxes and fees setting behaviour by implementing a regression discontinuity design (RDD) on the margin of victory of one coalition over the other, by comparing municipalities where centre-left (right) mayors have *barely* won the elections against a centre-right (left) opponent. In other words, the focus is on left and right candidates' races decided by a narrow margin. Lee (2001, 2008) shows that this approach represents quasi-random variation in candidate winner , because—as long as there are some unpredictability in voting behavior—when the race is very tight, the winner is likely to be determined by pure chance.

More formally, we compute the margin of victory for the centre-right mayor (MVR) in each municipality: positive (negative) values indicate that a centre-right, R, (left) candidate has won the electoral race. Note that the probability of having a centre-right wing mayor has a sharp discontinuity equal to 1 at the threshold $MVR = 0$. So RDD estimates the effect of the mayor's party-coalition on taxes and fees setting. Note that, also in this specification the margin of victory is lagged, because municipal elections usually take place in April-May of year n, while fiscal variables of year n depend on decisions taken in December of year $n-1$.

There are various ways in which RDD can be implemented. In what follows we present two different approaches. First, following Pettersson-Lidbom (2008), we use all sample available and we regress our dependent variable on a p*th*-order polynomial in the control function, in addition to the binary treatment indicator. As we are interested in the effect of political coalitions on taxes and fees setting, our dependent variable is TR_{it}, previously defined. The model we estimate takes the following form:

$$TR_{it} = \gamma_0 R_{i,t} + f(MVR_{i,t})\varphi + \beta' X_{i,t} + \tau_t + \mu_i + v_{i,t} \tag{4.2}$$

where R is our centre-right coalition dummy that takes value of one if the mayor ruling municipality i is supported by a centre-right coalition, this is our treatment variable. The coalition effect is estimated controlling for the margin of victory under different hypothesis on its functional form $f(MVR)$[16] as well as the interaction of all of these terms with R.

[16] Our control function is: $f(MVR_{it}) = \beta_{01}MVR_{it} + \beta_{02}MVR_{it}^2 + ... + \beta_{0p}MVR_{it}^p + \beta_1 R_{it}MVR_{it} + \beta_2 R_{it}MVR_{it}^2 + ... + \beta_p R_{it}MVR^p$.

Finally X is the vector of control variables employed in the previous set of regressions, τ_t is a year dummy, and μ_i is the unobserved heterogeneity. We treat μ_i as a municipality fixed effect. The coefficient of interest , γ_0 in (4.2), represent the coalition effect at zero threshold.

Imbens and Lemieux (2008) raise a possible concern with the above estimation method: that it may be sensitive to outcome values for observations far away from the threshold. To address this we also implement the *local linear regression* approach, which restricts the sample to municipalities in the interval $MVR_{i,t} \in [-h, +h]$, where h is an optimally chosen bandwidth, here selected following the methodology suggested by Imbens and Kalyanaraman (2009).[17] So, the second model we estimate is as follows:

$$TR_{it} = \rho_0 + \rho_1 R_{i,t} + \phi_0 MVR_{i,t} + \phi_1 R_{i,t} \times MVR_{i,t} + \tau_t + \mu_i + v_{i,t} \tag{4.3}$$

where τ_t are year effects, μ_i municipalities fixed effects, $v_{i,t}$ the error terms, standard errors are clustered at municipal level. ρ_1 is our coefficient of interest and identifies the coalition effect at the zero threshold.

Results of the estimation of γ_0 in (4.2) and ρ_1 in (4.3) are reported in Table 6; we experiment different specifications of the two models, which include or exclude the full set of controls and the fixed effects, and we present the results using different pth polynomial orders in (4.2) and also doubling the optimal bandwidth in (4.3) as a further robustness check.

[17] This is implemented using the STATA command *rd* developed by Austin (2011).

Table 6. RDD results on coalition effect on tax ratio.

RD Model	Controls+FE	Coefficient estimates		Observations
Local linear reg. 5.5%	*no*	1.1614	(1.2519)	1097
Local linear reg. 11%	*no*	0.4332	(0.9191)	1769
1st poly.	*no*	-0.4234	(0.7396)	2286
2nd poly.	*no*	0.0937	(0.9891)	2286
3rd poly.	*no*	2.7891**	(1.2128)	2286
4th poly.	*no*	2.6640*	(1.4530)	2286
5th poly.	*no*	1.5152	(1.7015)	2286
6th poly.	*no*	3.5229*	(1.9802)	2286
Local linear reg. 5.5%	*yes*	2.5491	(2.3477)	903
Local linear reg. 11%	*yes*	0.4276	(1.5801)	1467
1st poly.	*yes*	-0.3844	(1.1488)	1897
2nd poly.	*yes*	0.41	(1.6458)	1897
3rd poly.	*yes*	1.4946	(2.0517)	1897
4th poly.	*yes*	0.0351	(2.5491)	1897
5th poly.	*yes*	0.3419	(3.1981)	1897
6th poly.	*yes*	-4.0556	(4.0798)	1897

Clustered standard errors in brackets

** significant at 10%; ** significant at 5%; *** significant at 1%*

Optimal bandwidth = 0.54988509

The table shows quite clearly that there is not a clear different behaviour in the tax ratio setting by left and right wing mayors estimated around the zero threshold. Both models presents similar results.

We also report graphical analysis for the two models above. Figure 1 displays graphical representation of (4.2), by reporting running-mean smoothing (separately on either side of the threshold) for the percentage of votes won by the incumbent mayor in the latest election (on the horizontal axis) and the tax ratio (on the vertical axis). The visual analysis of the data and the cross-validation procedure (proposed by Lee, Lemieux (2010)) always suggests using a bandwidth of 0.02 or more, therefore, in order to make the graphical representation more effective, 50 bins are reported in all figures. From the inspection of the graph there is no clear evidence of a discontinuity at the cutoff point for TR.

Figure 1. Tax Ratio, bandwidth 0.02.

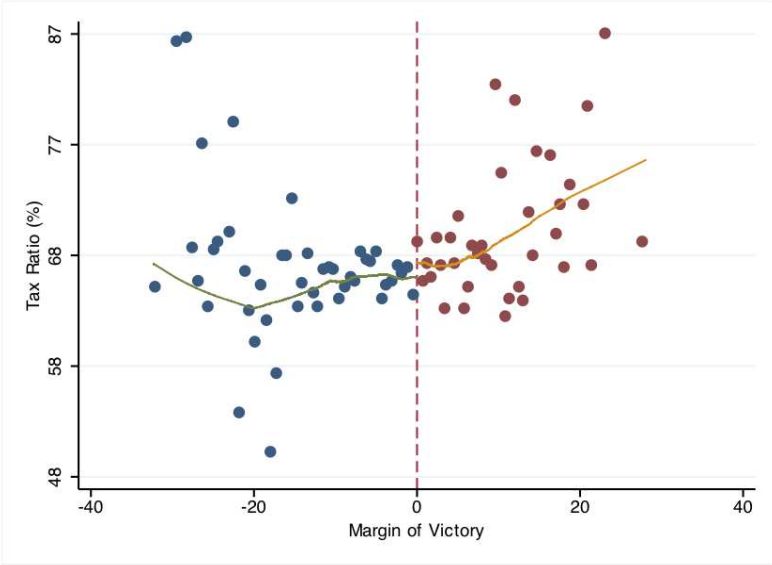
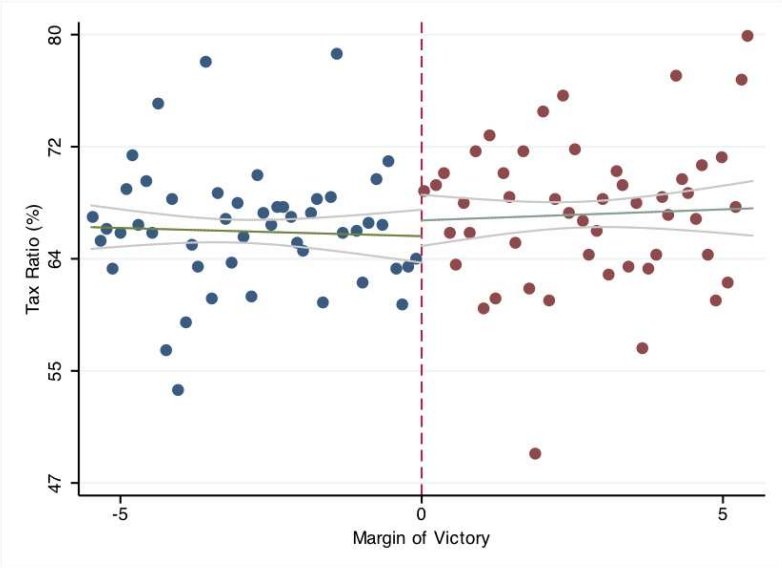


Figure 2 shows graphical analysis for (4.3), implemented using the optimal bandwidth selected following Imbens and Kalyanaraman (2009). Again there is no clear evidence of a significant discontinuity in TR around the threshold.

Figure 2. Tax Ratio, local linear regression optimal bandwidth (h=5.5).



One important validity test for regression discontinuity estimates is to check whether the density of the running variable is continuous at the threshold. The underlying assumption that generates the local random assignment result is that each individual has

imprecise control over the assignment variable. An intuitive test of this assumption is whether the aggregate distribution of the assignment variable is discontinuous, since a mixture of individual-level continuous densities is itself a continuous density. Using McCrary (2008) procedure, Figure A1 in the Appendix shows a graph of the raw densities computed over bins with a bandwidth of 0.01 (100 bins in the graph), along with a smooth 2nd-order polynomial model. The graphs show no evidence of discontinuity at the cutoff confirmed also by a formal RD regression using the up to the 4th-order polynomial in the control function.

Another important test for the validity of the RD design is to examine whether the covariates do not exhibit any discontinuity in relation to the margin of victory. As suggested by Lee and Lemieux (2010) we test the null of discontinuities in all covariates simultaneously estimating a Seemingly Unrelated Regression (SUR) where each equation represents a different baseline covariate, and then performing chi-square test for the discontinuity gaps in all equations being zero. As reported in Table A3 in the Appendix we cannot reject, whit high level of significance, the null hypothesis of zero discontinuity in all covariates in relation to almost all polynomial orders of the margin of victory.

5. Robustness

We conduct two different robustness checks: first we look at different measures of taxes and fees setting separately; second we investigate further our main salient tax, the property tax, by substituting the per capita values with its actual rates, which allows us to separate the analysis between ICI at *reduced* rate- paid by residents only-, and at *standard* rate -paid by everybody else.

5.1. Taxes and Fees Setting.

In the previous section we have established that taxes will be *relatively* low (high) compared to fees when electoral competition is high (low); in this section we aim to look at taxes and fees setting behavior in term of their absolute value rather than the ratio between them. Proposition 1 clearly predict that as electoral contestability increases taxes should decrease and fees rise. The model we now estimate is:

$$\tau_{it} = \alpha_i + v_t + \varsigma PC_{it} + \omega X_{it} + \varepsilon_{it}; \tau_{it} = t_{it}, F_{it} \tag{5.1}$$

where τ_{it} is in turn equal to taxes, t_{it}, and fees, F_{it}, X_{it} is the matrix of controls

employed in the previous sets of regressions, α_i and v_t are fixed effects and time dummies and ε_{it} the error. PC_{it} is our measure of political contestability[18], so the coefficient of interest is ς. The expected sign for $\widehat{\varsigma}$ is therefore negative for the salient taxes (in particular the property tax, and also the waste disposal tax, but possibly less significant for the latter group) and positive for the non-salient fees.

Table 7. Sources of revenue regressions, MV municipal elections

Dependent variable =	Property tax	Waste management taxes	Other taxes	Fees for local services	Other fees
Political competition	-0.8079***	-0.4945	-0.2439	0.6422**	0.2791*
	(0.1767)	*(0.3083)*	*(0.1826)*	*(0.2799)*	*(0.1654)*
Alignment dummy - 1=local gov. aligned with central gov.	-0.9551	0.221	0.2779	5.2372	-2.7241
	(1.8578)	*(3.1834)*	*(1.5143)*	*(3.7684)*	*(1.7532)*
Electoral competition (lag) X alignment	-0.16	0.2556	0.0113	0.2649	-0.0475
	(0.1108)	*(0.1736)*	*(0.0767)*	*(0.1934)*	*(0.0739)*
Incumbent dummy - 1 = reelected incumbent	-1.5079	3.8397	4.5499*	-5.7227	-4.6509*
	(2.1700)	*(3.8830)*	*(2.6025)*	*(3.9445)*	*(2.6751)*
Electoral competition (lag) X incumbent dummy	0.0341	0.0573	0.1826*	-0.3144*	-0.2765***
	(0.1032)	*(0.1768)*	*(0.1108)*	*(0.1911)*	*(0.1032)*
Local government coalition - 1=c.left, 0=c.right	0.7586	3.3667	2.2908	1.6547	-3.5414
	(3.7969)	*(5.8502)*	*(2.5095)*	*(5.5505)*	*(3.1025)*
Electoral competition (lag) X coalition	0.1765	0.1885	0.0697	0.1063	-0.0212
	(0.1772)	*(0.3365)*	*(0.1694)*	*(0.2862)*	*(0.1477)*
Electoral cycle - year from election	3.4253*	5.1593*	3.0771	-4.601	-3.1799
	(1.7503)	*(2.8704)*	*(2.3322)*	*(3.5178)*	*(2.1697)*
Electoral cycle square	-0.7552*	-1.1779*	-0.6642	1.3139	0.8979*
	(0.4243)	*(0.6925)*	*(0.5283)*	*(0.8511)*	*(0.4823)*
Electoral competition (lag) X electoral cycle	-0.0051	-0.0037	0.1074	-0.2195	-0.12
	(0.1033)	*(0.1825)*	*(0.1080)*	*(0.2305)*	*(0.1020)*
Electoral competition (lag) X electoral cycle square	0.0066	0.0072	-0.0273	0.0527	0.036
	(0.0244)	*(0.0437)*	*(0.0240)*	*(0.0539)*	*(0.0233)*
Municipal dummies	yes	yes	yes	yes	yes
Year dummies	yes	yes	yes	yes	yes
Population brackets dummies	yes	yes	yes	yes	yes
Regional dummies	yes	yes	yes	yes	yes
Control variables	yes	yes	yes	yes	yes
Mundlak approach	yes	yes	yes	yes	yes
Observations	1897	1897	1897	1897	1897

*Clustered standard errors in brackets, * significant at 10%; ** significant at 5%; *** significant at 1%*

The results are displayed in Table 7: the first three columns report the estimated coefficients when our dependent variable is a measure of our salient instruments (*property*

[18]In this section we present results when political competition is peroxide by lagged MV in municipal elections, results for MV calculated on regional elections are in Table A4 in the Appendix.

tax, waste disposal tax, and *other taxes*, respectively), and the last two columns present the results for the non salient instruments (*fees for local services* and *other fees*). From the inspection of the table, the results appear clearly consistent with this view: if political competition increases of one percentage point, on one hand, the revenues from property taxes, waste disposal and other taxes decreases respectively of 0.80, 0.49 and 0.24 Euros per capita, however the latter two are not significantly different from zero. On the other hand, revenues from fees increases of about the same amount (0.64 Euros per capita for *fees for local services* and 0.27 Euros per capita for *other fees*).

5.2. Alternative measures for property tax: residents vs non residents

In this section we focus on the main and most salient local tax, the property tax, and we check whether or not our results are robust to the use of an alternative measure: the actual tax rates rather that the per capita burden. This also allows us to separate the analysis between ICI *standard* and *reduced* rates. As previously mentioned, there are two main rates for ICI, the first one is the so called "reduced" one, paid by resident home-owners and the second one is the "standard" one, applied largely to non residents (and therefore non-voters). So if our hypothesis is correct we should expect that, as electoral uncertainty increases, policy makers- if motivated by electoral purposes-, will mainly reduce the rate whose the majority of voters care about, rather than that the one that mainly non-residents non-voters are subject to.

Table 8. Property Tax (ICI) rates, reduced rates.

Dependent variable =	**Property tax rate (reduced)**			
	Municipal MV		*Regional MV*	
Political competition	-0.0081***	-0.0075***	-0.0021	-0.0037**
	(0.0031)	*(0.0021)*	*(0.0018)*	*(0.0017)*
Alignment dummy - 1=local gov. aligned with central gov.	-0.0323	-0.0002	-0.0213	0.0094
	(0.0263)	*(0.0220)*	*(0.0222)*	*(0.0217)*
Electoral competition (lag) X alignment	-0.0009	-0.0005	-0.0002	0.0006
	(0.0009)	*(0.0008)*	*(0.0009)*	*(0.0009)*
Incumbent dummy - 1 = reelected incumbent	0.0175	0.0189	0.0432	0.0432
	(0.0322)	*(0.0337)*	*(0.0288)*	*(0.0304)*
Electoral competition (lag) X incumbent dummy	0.0007	0.0008	0.0018	0.0020*
	(0.0011)	*(0.0011)*	*(0.0012)*	*(0.0012)*
Local government coalition - 1=c.left, 0=c.right	-0.0365	-0.0243	-0.0462	-0.0343
	(0.0354)	*(0.0341)*	*(0.0372)*	*(0.0364)*
Electoral competition (lag) X coalition	0.0012	0.0002	-0.0014	-0.0017
	(0.0032)	*(0.0023)*	*(0.0017)*	*(0.0017)*
Electoral cycle - year from election	0.0641***	0.0519***	0.0450*	0.0434**
	(0.0235)	*(0.0170)*	*(0.0232)*	*(0.0207)*
Electoral cycle square	-0.0182***	-0.0153***	-0.0123**	-0.0109**
	(0.0064)	*(0.0046)*	*(0.0056)*	*(0.0050)*
Electoral competition (lag) X electoral cycle	0.0019**	0.0011*	0.0003	0.0001
	(0.0009)	*(0.0007)*	*(0.0009)*	*(0.0008)*
Electoral competition (lag) X electoral cycle square	-0.0006**	-0.0004**	-0.0002	0.0001
	(0.0002)	*(0.0002)*	*(0.0002)*	*(0.0002)*
Municipal dummies	yes	yes	yes	yes
Year dummies	yes	yes	yes	yes
Population brackets dummies	yes	yes	yes	yes
Regional dummies	yes	yes	yes	yes
Control variables	yes	no	yes	no
Mundlak approach	yes	yes	yes	yes
Observations	1897	2771	1612	2390
Number of municipalities	509	569	444	501

*Clustered standard errors in brackets, * significant at 10%; ** significant at 5%; *** significant at 1%*

Table 9. Property Tax (ICI) rates, standard .

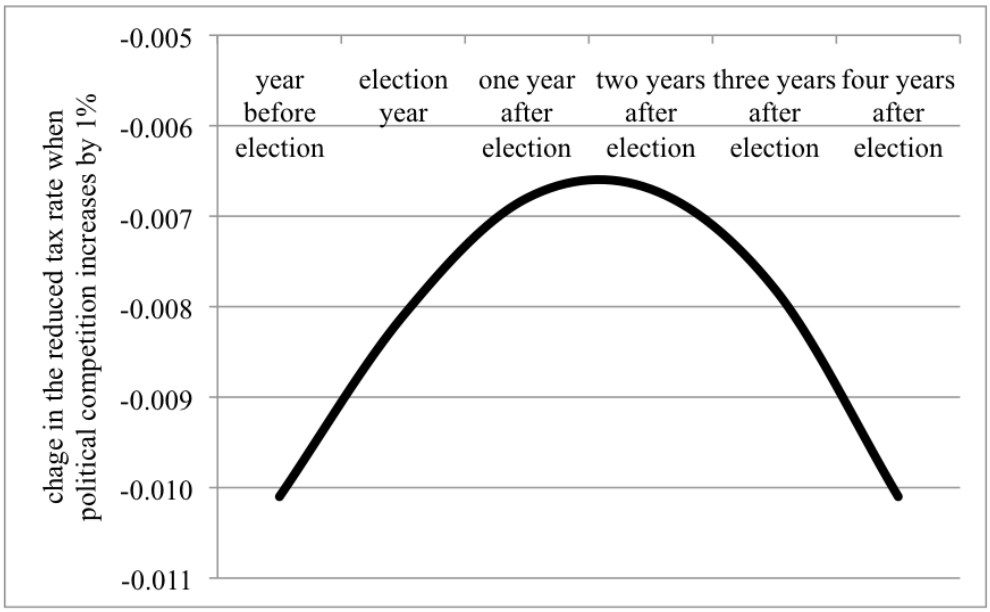
Dependent variable =	**Property tax rate (standard)**			
	Municipal MV		*Regional MV*	
Political competition	-0.0027	-0.0005	-0.0005	-0.0011
	(0.0029)	*(0.0025)*	*(0.0030)*	*(0.0022)*
Alignment dummy - 1=local gov. aligned with central gov.	-0.0434*	-0.001	-0.0366	0.0058
	(0.0249)	*(0.0210)*	*(0.0265)*	*(0.0238)*
Electoral competition (lag) X alignment	-0.0014	-0.0004	-0.0008	0.0007
	(0.0010)	*(0.0009)*	*(0.0012)*	*(0.0010)*
Incumbent dummy - 1 = reelected incumbent	-0.0558*	-0.05	-0.0224	-0.0133
	(0.0329)	*(0.0321)*	*(0.0412)*	*(0.0364)*
Electoral competition (lag) X incumbent dummy	-0.0016	-0.0013	-0.0005	0.0002
	(0.0014)	*(0.0014)*	*(0.0019)*	*(0.0016)*
Local government coalition - 1=c.left, 0=c.right	0.0597	0.0714	0.0104	0.0836*
	(0.0513)	*(0.0464)*	*(0.0530)*	*(0.0443)*
Electoral competition (lag) X coalition	0.0011	-0.0004	-0.0002	0.0027
	(0.0032)	*(0.0027)*	*(0.0027)*	*(0.0021)*
Electoral cycle - year from election	0.0973***	0.0790***	0.1090***	0.0453
	(0.0298)	*(0.0220)*	*(0.0352)*	*(0.0285)*
Electoral cycle square	-0.021***	-0.016***	-0.024***	-0.0103
	(0.007)	*(0.005)*	*(0.008)*	*(0.0070)*
Electoral competition (lag) X electoral cycle	0.0012	0.0002	0.001	-0.0020*
	(0.0014)	*(0.0011)*	*(0.0015)*	*(0.0012)*
Electoral competition (lag) X electoral cycle square	-0.0002	0	-0.0003	0.0004
	(0.0003)	*(0.0003)*	*(0.0004)*	*(0.0003)*
Municipal dummies	yes	yes	yes	yes
Year dummies	yes	yes	yes	yes
Population brackets dummies	yes	yes	yes	yes
Regional dummies	yes	yes	yes	yes
Control variables	yes	no	yes	no
Mundlak approach	yes	yes	yes	yes
Observations	1897	2771	1612	2390
Number of municipalities	509	569	444	501

*Clustered standard errors in brackets, * significant at 10%; ** significant at 5%; *** significant at 1%*

Tables 8 and 9 report regression results for (5.1) when our dependent variable, τ, is in turn the standard and the reduced property tax rate. Political competition is calculated on the lagged MV of municipal elections as well as regional elections. The inspection of the tables reveals that political competition only affects the reduced tax rate, a 1% increase in the level of political competition has a negative impact on reduced tax rates of about 0.8% points and it appears highly sensitive to the position in the electoral cycle. There is no effect of political competition instead on the standard tax rate, which is consistent with our hypothesis.

Moreover it is also important to note that the impact exerted by the degree of political competition on the reduced tax rate is strongly affected by the political cycle, because the coefficients' points estimates related to the interaction between political competition and the electoral cycle are very significant. Figure 3 below shows how the impact of political competition on the reduced tax rate is changing with the electoral cycle, reaching is maximum of -0.01 (per percentage point of political competition) in the year before the election, and becoming much weaker in the middle of the electoral mandate.

Figure 3. Electoral cycle (ICI reduced tax rates)



5.3. Do voters *really* do not understand?

An obvious question that still remains unanswered is why incumbent policy makers are able to carry on with substituting taxes with fees for electoral purposes only. Our results

are consistent with the fact that since fees are less salient than taxes, for the reasons spelled in the previous sections of the paper, voters are not able to *fully* understand the responsibility and the amount of their fiscal burden. But how is it possible that at least challenger politicians are not able to understand that and turn this in their favour by informing voters? We believe this actually is not the case, possibly because the bureaucratic machine is very complicated and policy maker themselves do not fully understand how it works until they are in power. The understanding of the full mechanism goes beyond the scope of this paper. Moreover we do not model challenger's behaviour in our theory, but nevertheless, in this section we want to provide and informal test by checking whether or not voters will punish incumbents who have manipulated the taxes and fees for electoral purposes. In other words we are estimating the probability of incumbent re-elections as a function of sources of tax revenue.

Our empirical strategy, in this case, is to estimate the following probit model considering only the subsample of the electoral years.[19]

$$I_i = \theta T_i + \omega' \mathbf{X}_i + \xi_i; \tag{5.2}$$

In equation (5.2) $I_i = 1$ if the incumbent party is re-elected at the head of the council and zero otherwise, T_i will correspond in turn to the tax ratio and the other measures of local taxes and fees. Then, $\mathbf{X}_i$ is a vector of control variables which includes also: population brackets dummies, regional dummies, and the whole set of control variables reported in Table 3. Finally, ξ_i is an i.i.d. error term. In order to avoid problems of collinearity we estimate a regression model for each measure of local taxes and fees and for the tax ratio separately.

Table 10 reports the point estimates for the coefficient θ in terms of marginal effect. It is possible to note that only when T_i is equal to the property tax we obtain a statistically significant result, i.e. increasing ICI by 1 euro per-capita reduces the probability of re-election by 0.1%. Instead, for all the other measures of local taxes and fees and, in particular, for the tax ratio we do not have any empirical evidence of their impact on the probability of re-election.

[19] Since we consider only the election years we loose the panel structure of the data, because only for very few municipalities is possible to have data for two consecutive elections.

Table 10. Impact of fiscal variables on re-election probability (marginal effects)

Tax ratio % (salient taxes over total local taxes and fees)	0.40	(0.375)
Property tax	-0.10*	(0.056)
Waste management tax	-0.043	(0.058)
Other taxes	0.028	(0.021)
Fees for general services	-0.04	(0.09)
Fees for other services	-0.12	(0.12)
Observations	366	

Standard errors in brackets
** significant at 10%; ** significant at 5%; *** significant at 1%*

This results support the idea that voters react only on changes in the most salient source of local revenues, the property tax. Instead, it seems that they do not take into account the tax ratio or other sources of revenues. Therefore, to the question "Do voters *really* do not understand?" the empirical evidence seems to suggest a positive answer.

6. Conclusions

This paper has explored the link between electoral competition and tax setting behaviour. Our theoretical model predicts that mayors who face stronger electoral competition behave differently than mayors in electorally safer municipalities. In particular, we analysed the trade-off between a more salient tax, paid by each citizen, with a less salient source of revenues (fee), which corresponds to the sale of services monopolistically supplied by the municipality. Our model's prediction is that in more competitive jurisdictions mayors are less likely to use a larger proportion of salient sources of revenues, as the effect of "hiding" from the voters some revenues is electorally more convenient. On the other hand, mayors who face a less fierce electoral competition do not need to hide their sources of revenues from voters, and therefore can rely more on the safer and more salient taxes, as opposed to fees.

These findings are confirmed by our empirical analysis, which focuses on the choice of financing by Italian mayor in the period 1999-2008. Mayors have a choice between more salient property and waste collection taxes, and less salient fees for other services (parking permits, vital records certificates, planning permission, advertising billboards). The data confirm that mayors who won with a narrower margin of victory, i.e. who face a tighter electoral competition, are more likely to increase the proportion of revenue coming from

fees, as opposed to taxes, and *vice versa*. Moreover we find that this behaviour is common to both left and right Italian party coalitions.

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Appendix

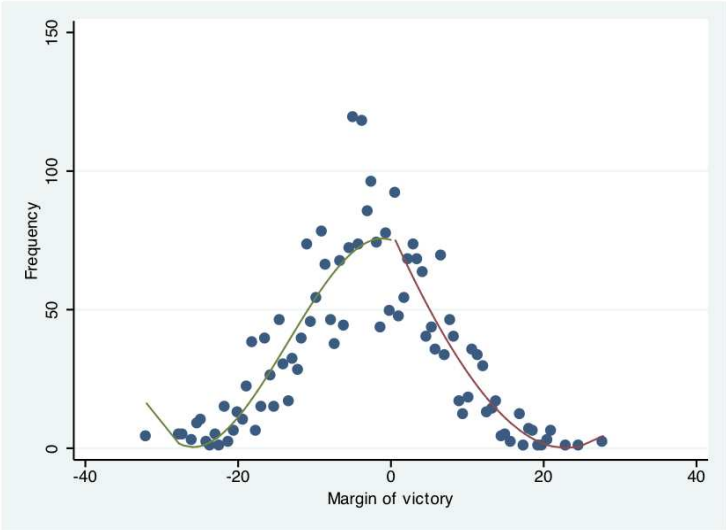
Table A1. Party coalitions, large municipalities only, between 1998 and 2009

Centre-Left	No.	Centre-Right	No.	Independents	No.
CEN-SIN(LS.CIVICHE)	2565	CEN-DES(LS.CIVICHE)	1,252	LISTA CIVICA	251
CEN-SIN	325	FORZA ITALIA	237	IND	56
DEMOCRATICI SINISTRA	230	CEN-DES	201	SVP	18
PDS	192	LEGA NORD	174	UV	7
SINISTRA	135	CENTRO	117	PATTO SEGNI	6
L'ULIVO	82	ALLEANZA NAZIONALE	84	SI	4
P.POPOLARE ITALIANO	39	POLO PER LE LIBERTA'	30	MOV. PER L'AUTONOMIA	3
PPI (POP)	27	CCD	26	LA RETE-MOV.DEM.	3
LA MARGHERITA	15	CASA DELLE LIBERTA'	17	LEGA D'AZIONE MERID.	1
RIF.COM.	15	CDU	14	LISTA LOCALE	1
DL.LA MARGHERITA	14	LEGA LOMB-LEGA NORD	10	PRI	1
PROGRESSISTI (1994)	7	L.VEN-L.NORD	9		
CEN-SIN(CONTR.UFF.)	6	LG.NORD-LG.VENETA	9		
POPOLARI	6	UDC	8		
IND.SIN.	5	CCD-CDU	7		
PER VERONA	5	DESTRA	7		
PROGRESSISTI SALERNO	5	FI-CCD	5		
SDI-ALTRI	5	FI-CCD-AN	5		
FED.DEI VERDI	4	POLO BUON GOVERNO	5		
ALL. DI PROGRESSO	3	CDL	3		
I DEMOCRATICI	3	LG.VENETA REPUBBLICA	3		
UNITI NELL'ULIVO	3	U.D.EUR	2		
U.D.EUR	2	FI-CCD-CDU	1		
SDI	2	FORZA IT.-POLO POP.	1		
U.D.EUR POPOLARI	2				
LA MARG.	1				
PATTO DEMOCRATICI	1				
POPOLARI-CIVICA	1				
VERDI	1				

Table A2. Taxes and Fees in Italian municipalities.

LOCAL TAXES Property tax, Waste disposal, Municipal income tax, Electricity surcharge.
LOCAL FEES for general services Sewerage and water, Revenue from municipal assets, Fines, School transport, Nursery and preschool, Burial fees, Elderly care, Road traffic and related services, Theatres and cultural activities, Municipal stadium and swimming pools, Libraries, museums and art galleries.
LOCAL FEES for other services Municipal advertising tax, Occupation of public spaces and areas, Public billboards, Vital record certificates.

Figure A1. RDD: Density of the Forcing Variable (MVR).



Covariates no-discontinuity test (SUR model).

Polynomial Order	P-value
1	0.0001
2	0.2531
3	0.1431
4	0.0361
5	0.0044
6	0.0634

Table A4. Sources of revenue regressions, MV regional elections

Dependent variable =	Property tax	Waste management taxes	Other taxes	Fees for local services	Other fees
Political competition	-0.3347*	-0.2884	-0.1691	0.2037	0.2573
	(0.1891)	*(0.3591)*	*(0.1760)*	*(0.1769)*	*(0.3055)*
Alignment dummy - 1=local gov. aligned with central gov.	3.2257	1.6715	2.3611	-0.3569	7.3256
	(2.4149)	*(4.3520)*	*(2.4409)*	*(2.6090)*	*(4.8835)*
Electoral competition (lag) X alignment	0.0899	0.2541	0.1204	0.043	0.1841
	(0.1075)	*(0.1938)*	*(0.1075)*	*(0.0782)*	*(0.1873)*
Incumbent dummy - 1 = reelected incumbent	2.3541	-0.4521	1.0142	2.7945	-2.245
	(3.0700)	*(5.3781)*	*(2.9955)*	*(3.8974)*	*(5.6930)*
Electoral competition (lag) X incumbent dummy	0.1583	-0.0898	0.0128	0.0884	-0.1143
	(0.1382)	*(0.2327)*	*(0.1359)*	*(0.1455)*	*(0.2312)*
Local government coalition - 1=c.left, 0=c.right	-2.8961	6.377	3.0107	-5.8155	10.3282
	(4.0641)	*(7.6737)*	*(3.1990)*	*(6.2768)*	*(6.4469)*
Electoral competition (lag) X coalition	-0.1248	0.7338**	0.014	-0.0667	0.6339**
	(0.1773)	*(0.3066)*	*(0.1518)*	*(0.2096)*	*(0.2652)*
Electoral cycle - year from election	3.4854	3.4139	2.7622	-1.9121	-8.8918*
	(2.7035)	*(4.0233)*	*(2.9875)*	*(2.6481)*	*(4.7459)*
Electoral cycle square	-0.7283	-1.0204	-0.4986	0.519	2.0520*
	(0.6832)	*(0.9731)*	*(0.7046)*	*(0.5813)*	*(1.1821)*
Electoral competition (lag) X electoral cycle	-0.0738	-0.0131	0.0977	-0.0434	-0.3744*
	(0.1148)	*(0.1669)*	*(0.1338)*	*(0.0996)*	*(0.2084)*
Electoral competition (lag) X electoral cycle square	0.0237	-0.0019	-0.0215	0.0111	0.0704
	(0.0295)	*(0.0403)*	*(0.0328)*	*(0.0224)*	*(0.0512)*
Municipal dummies	yes	yes	yes	yes	yes
Year dummies	yes	yes	yes	yes	yes
Population brackets dummies	yes	yes	yes	yes	yes
Regional dummies	yes	yes	yes	yes	yes
Control variables	yes	yes	yes	yes	yes
Mundlak approach	yes	yes	yes	yes	yes
Observations	1612	1612	1612	1612	1612

*Clustered standard errors in brackets, * significant at 10%; ** significant at 5%; *** significant at 1%*

Proof of Lemma 1

Both for the share n of voters who pay the fee, and for the complementary share $(1-n)$, there exist a voter who is indifferent between the incumbent and the challenger. These voters have ideology:

$$\begin{aligned} \delta_{nofee} &= u(g) - t \\ \delta_{fee} &= u(g) - t - sF \end{aligned}$$

The cumulative distribution function of voters is $y = \frac{1}{2} + \psi X$, where X is the position of the indifferent voter. As ideology and fee-paying are uncorrelated, the vote share of the incumbent mayor is:

$$V = n\left[\frac{1}{2} + \psi\delta_{fee}\right] + (1-n)\left[\frac{1}{2} + \psi\delta_{nofee}\right]$$

which can be re-written as:

$$V = \frac{1}{2} + \psi\left[u(g) - t - nsF\right]$$

□

Proof of Proposition 1

Let us see first under what circumstances the first-order conditions as in (2.4)-(2.5:) are satisfied. Given that all functions are continuous, and strictly concave, existence of the equilibrium is not an issue. In equilibrium it must be that $(n + n_F F) = 0$. If it were not so, for the first-order conditions to be satisfied, from (2.5) it would have to be true that:

$$[h'(g) + \psi(u'(g) - s] = 0$$

which implies, substituting in (2.4), that $U_t : \psi(s-1) \neq 0$, which means that the first order condition (2.4) is not satisfied.

Let us now focus on the comparative statics with respect to ψ on the equilibrium, i.e.:

$$\frac{\mathrm{d}t^*}{\mathrm{d}\psi} < 0 < \frac{\mathrm{d}F^*}{\mathrm{d}\psi}$$

In order to find the values of these two expression, we need to solve the following matrix-form simultaneous equations, i.e. we need to apply the Implicit Function theorem

in order to check how the equilibrium changes with the competitiveness ψ of the political arena.

$$\begin{bmatrix} U_{tt} & U_{tF} \\ \\ U_{tF} & U_{FF} \end{bmatrix} \begin{bmatrix} \frac{\mathrm{d}t^*}{\mathrm{d}\psi} \\ \\ \frac{\mathrm{d}F^*}{\mathrm{d}\psi} \end{bmatrix} = - \begin{bmatrix} U_{t\psi} \\ \\ U_{F\psi} \end{bmatrix} \tag{.1}$$

By definition, as U^G is assumed to be concave:

$$det(H) = \begin{vmatrix} U_{tt} & U_{tF} \\ \\ U_{tF} & U_{FF} \end{vmatrix} > 0 \tag{.2}$$

By concavity we also know that $U_{tt} < 0$ and $U_{FF} < 0$. We can calculate the other second-order differentials:

$$U_{tF}: \ (n_{tF}F + n_t)\left[f'(g) + \psi(u'(g) - s)\right] + (1 + n_tF)[f''(g) + \psi(u''(g)]$$

which is negative as long as $n_{tF} < 0$. From the first-order conditions, we can also say:

$$U_{t\psi} \ : \ (1 + n_tF)(u'(g) - s) + (s - 1) < 0 \tag{.3}$$

$$U_{F\psi} \ : \ (n + n_FF)(u' - s) = 0 \tag{.4}$$

This implies that

$$\frac{\mathrm{d}t^*}{\mathrm{d}\psi} = \frac{\begin{vmatrix} -U_{t\psi} & U_{tF} \\ \\ 0 & U_{FF} \end{vmatrix}}{\begin{vmatrix} U_{tt} & U_{tF} \\ \\ U_{tF} & U_{FF} \end{vmatrix}} = \frac{-U_{t\psi}U_{FF}}{|H|} < 0 \tag{.5}$$

$$\frac{\mathrm{d}F^*}{\mathrm{d}\psi} = \frac{\begin{vmatrix} U_{tt} & -U_{t\psi} \\ \\ U_{tF} & 0 \end{vmatrix}}{\begin{vmatrix} U_{tt} & U_{tF} \\ \\ U_{tF} & U_{FF} \end{vmatrix}} = \frac{U_{t\psi}U_{tF}}{|H|} > 0 \tag{.6}$$

Simply applying the chain rule, we can also state that ${}^{\partial(t/g)}/_{\psi} < 0$. ■