

SINGLE BALLOT VS DOUBLE BALLOT: DOES IT MATTER
FOR FISCAL POLICIES? EVIDENCE FROM ITALY

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Single Ballot vs Double Ballot: Does It Matter for Fiscal Policies? Evidence from Italy

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Abstract

The aim of this paper is to empirically test with data on all Italian municipalities from 2001-2006 to what extent two electoral rules, single ballot versus double ballot, can affect local tax and expenditure decisions. In the single ballot case the candidate getting the majority of votes is elected; while in the double ballot only the candidate getting more than 50 percent of votes is elected in the first ballot. If nobody gets more than 50 percent the two candidates who collect more votes in the first ballot compete in a second ballot. Bordignon and Tabellini (2009) in a model with sincere voting show that the coalition of parties winning the election is larger under the dual ballot than under the single ballot, implying also that the number of voters that the politician must intercept is larger. We exploit this result to test the impact of two electoral systems on expenditure and tax composition by using the difference-in-difference and regression discontinuity approach: the double-ballot municipality would affect more broad financial policy categories than the single ballot, because in the former system the number of voters to be pleased is bigger. We find that municipalities in a double-ballot regime do not change their revenue and expenditure level, however, they change their composition biasing it towards broader financial policy categories than in a single ballot. In particular this happens when the incumbent mayor is not term-limited, that is he/she cares about being re-elected.

JEL codes: H3, H21, H77

keywords: federal budget, double ballot, taxes, expenditures, term-limit.

1 Introduction

Electoral systems play a crucial role in shaping electoral incentives within which public policies are established. The political economy literature has devoted a lot of work in exploring the impact on public expenditure of plurality versus proportional electoral rules and districts size (Austen-Smith, 2000; Lizzeri and Persico, 2001; Myerson, 1993; Persson and Tabellini, 2000). Almost no attention, except for a recent work by Bordignon and Tabellini (2009), has been given to the possibility that the election takes place not in a one shot game, but in a two-stage game as in some electoral system happens: this is the so-called double ballot (or run-off) system. Broadly speaking, voters in the first round select a subset of candidates, over which they vote again in the second round. The best known example of this system is that one used in France for the Presidential election, where the two candidates getting more votes in the first ballot go for a second round. Other examples are in Latin America, in US for the gubernatorial elections and in Italy for the elections of the mayor in municipalities.

We will focus our attention to the Italian case. This is very interesting for studying the impact on fiscal policies of different electoral regimes since it includes municipalities where single and double ballot electoral systems are applied depending on the population size: if it is less than 15,000 the mayor is elected by means of a single ballot system, otherwise by means of a double ballot system.

Bordignon and Tabellini (2009) set up a model with sincere voting where parties with ideological preference commit on one dimensional policy before the election; they find that with highly polarized electorate the dual-ballot reduces the policy influence of extremist groups. The dual ballot allows the moderate parties to run on their own platform not forcing them to reach a compromise with extremist parties. This implies that given a status-quo allocation of voters to an exogenous number of parties, the subset of them running for election is larger under the dual ballot than under the single ballot, meaning that the number of voters that the politician must intercept is larger under the dual ballot, than under the single ballot. This is similar to the case where we face municipalities with different sizes and want to understand how the size affects the level and composition of public expenditure and revenue (Persson and Tabellini, 2003), or with plurality or proportional electoral rule and want, as well to study if this affects the public expenditure and tax decision. Politicians under the proportional rule or in large size district must care of a larger set of electorate, that is they must support broad social groups (Austen-Smith, 2000; Lizzeri and Persico, 2001; Myerson, 1993; Persson and Tabellini, 2000). To this regard evidence has been found that expenditure in majoritarian system is biased more towards broad programs than targeted ones which prevail in proportional systems (Funk and

Gathmann, 2009; Milesi-Ferretti, Perotti and Rostagno, 2002) and as well the larger the district the bigger the bias towards non-targeted programs (Persson and Tabellini, 2003).

Since the electoral system affects the electorate size necessary to win the election and since the size of the electorate determines the decision on expenditure composition, then it is reasonable to think that the electoral rule may affect the expenditure and tax mix set by the policy maker. In particular we expect that a politician running with a double ballot system, compared to another with a single ballot, is biased more towards broad expenditure programs (like education, culture and so on), than targeted ones (like traffic and roads or planning and environment) and prefers more taxes hitting specific groups of voters.

In fact the effects of the electoral system on public policy decisions may be critically conditioned by the possibility of the policy maker to be re-elected: fiscal decisions assumed today by the incumbent mayor are, inter alia, conditioned by the aim to be re-elected, but only if he can actually run in the next election. This issue is here explored by exploiting a particular rule of the Italian electoral system that provides no more than two consecutive mandates for the office of mayor (Besley and Case 1995; List and Sturm 2006). Namely a mayor running his first mandate will assume fiscal decisions conditioned by the prospective of re-election, taking into account the electoral rule, whereas lame-duck mayor would not care about the electoral rule because cannot be re-elected.

By using a data set on financial and electoral characteristics of Italian municipalities, we find evidence that are consistent with the expectations discussed above. In particular we find that the double-ballot municipality when the mayor is not term limit, with respect to the single-ballot, prefers broad expenditure categories than targeted items and the opposite occurs with taxes.

The remainder of the paper is organized as follows. The next Section outlines financial and electoral features of Italian municipalities. Section 3 illustrates the dataset. In Section 4 we develop the tests of the impact of the electoral system on fiscal policies whereas Section 5 describes and comments the results. Section 6 concludes.

2 Institutional framework: finance and electoral rule in Italian municipalities

The Italian Constitution provides for five layers of government: state, regions, provinces, municipalities, and metropolitan authorities (not yet constituted). In particular local government includes currently 8,094 municipalities ranging in size from a small village to a large town. As

for their role in general government budget, municipalities account for about 8.6% of total public expenditure. They are responsible for a large array of relevant welfare services, territorial development, local transport, infant school, sport and cultural facilities, local police as well as most infrastructure spending. On the revenue side, as a result of a long-lasting process of devolution of taxing powers, at present municipalities can rely on own-source taxes by about 30% of their total revenues. The main municipal taxes are a property tax, a tax on urban waste disposal, a tax on occupation of public space and a surtax on the personal income tax levied by the central government. For these taxes municipalities have some autonomy in setting rates and other basic elements of tax bases. Other revenues come from various charges for utilities and, lastly, by transfers from the central government that still remain quite considerable (about 30%) in the municipal budget.¹

Since 1993 the electoral system at the municipal level in Italy is a mayor-council system: the municipal council members and the mayor are distinctly and directly elected by citizens in elections ordinarily held every 5 years. This new mechanism implies that the mayor is endowed with a very strong political power even though the council retains the power to dismiss the mayor by passing a vote of no confidence in him/her.²

In particular, there are two different systems for the election of the mayor and the municipal council depending on the number of inhabitants in the municipality. The first applies to municipalities with up to 15,000 inhabitants (7,430 - according to the last census population - that is the great majority of the Italian municipalities) and the second to those with more than 15,000 inhabitants (a total of 664).

For our empirical study it is important to point out that the 15,000 inhabitants threshold relevant for the electoral system holding in the year of the election is not referred to the actual population resident in that year but rather to the "certified" population recorded in the first year of every decade by the Italian Statistical Office (e.g. for all the elections held in the decade 1991-2001 the relevant "certified" population is that one recorded by 1991 census, and so on).³ The distinction between certified and actual population size of a municipality between election years can actually be smaller or larger than the threshold without triggering a change in the electoral mechanism:⁴ for example if during the 2000 decade there is a municipality

¹The financing mechanism of municipalities located in the territories of the Special Statute Regions greatly differs from the standard arrangements above explained since in this case transfers from the corresponding regions play a relevant role in municipal revenues.

²This system of government is referred by Fabbrini (2001) as a case of semi-parliamentarism.

³This excludes the incentive for the municipalities next to the threshold population to misreport the information about the population size and strategically manipulate the immigration policy to obtain their preferred electoral system.

⁴Moreover, even in the election year the treatment variable of the the regression discontinuity design is from

whose actual population in 2005 election is 16000, but the certified population is 14500, then this municipality is classified as single ballot. Finally a change in the certified population affects the electoral system only starting from the first election in the new decade: for example if the 2001 certified population is 15500 and the 1991 population is 14500 but the election in the 2000 decade happens in 2005, the municipality is double-ballot from 2005.

In small municipalities the mayoral candidate who gains the largest number of votes is elected mayor. For large municipalities a double-ballot majoritarian electoral mechanism is applied. In the first ballot voters are entitled to vote for a mayoral candidate. The mayoral candidate that gains the absolute majority of votes is elected mayor in the first ballot, whereas if this does not happen a second ballot is held between the two candidates collecting the largest number of votes in the first round.⁵

In the period between the first and the second ballot the lists excluded in the first round can join those backing one of the two candidates in the second round, thus inducing a sort of bandwagoning effect: the consequence is that the double-ballot mechanism implies larger political alliances (Bordignon and Tabellini, 2009), putting together heterogeneous political interests. Therefore the political platform is shifted towards less specific and targettable programs.

3 Data

The empirical analysis is based on a very large micro data-set on Italian municipalities combining different archives publicly available from the Italian Ministry of the Interior, the Italian Ministry of the Economy and the Italian Statistical Office. It is a panel data set that covers the universe of all Italian municipalities over the years 2001-2006. It includes a full array information organized into four different blocks: 1) fiscal data on spending and revenues items; 2) institutional data about the main political and personal features of the municipal bodies (mayor, municipal executive, municipal council) as recorded at the end of each year; 3) results of the elections in which the mayor and the council members in office during the period covered

2003 (the date from which the 2001 census was used to define the municipalities election rules) onwards the lag of the actual population necessary to back it to the 2001 release and before 2003 the lag of the actual population necessary to back it to the 1991 release.

⁵In the case of a single ballot system the list supporting the winning mayor always receives a majority premium equal to two-thirds of the council. On the contrary this is not always the case when the double ballot mechanism is applied. Therefore whereas a small municipality will never face a "divided" government large municipalities may experience cases where the mayor and the council majority belong to different parties.

This feature may explain why in double-ballot municipalities the mayor may look for political consensus from a wider range of parties inducing moderate political platforms.

by the data-set have been elected; 4) demographic and socio-economic data such as population size, population age structure, average income of inhabitants.

3.1 Dependent variables

As said before we are interested in checking if and how the electoral regime affects the budgetary decisions taken at municipal level. Therefore as dependent variables we consider revenue items (taxes, charges, transfers and revenue from public asset sales) and expenditure items classified according to 12 functions.⁶ Moreover, the peculiarities of the financing mechanism of municipalities located in the territories of the Special Statute Regions (see note 1) suggest restricting the sample used in this analysis only to the municipalities in Ordinary Statute Regions (a total of 6,702 municipalities in 2010).

3.2 Double-ballot and other political variables

We define a dummy (*double*) which is equal to one when the mayor of a municipality who is in office in certain year along 2001-2006 has been elected according to the double-ballot rule and zero when the single-ballot system has been applied for her/his election. Our sample include both municipalities where the mayor(s) in office over the period 2001-2006 has (have) been all elected by means of the same electoral system (distinctively single-ballot or double-ballot) and municipalities where we observe mayors in office in different years that have been elected under different electoral rules.

As for the other political variables we measure the political power of the mayor by using his/her share of votes (*voteshare*) cast in the first ballot. Moreover, a dummy variable (*termlimit*) has been set equal to one if the mayor is carrying his second consecutive office and thus cannot be re-elected for another term.

3.3 Socio-economic and demographic controls

We include a set of time-varying variables that characterize the municipalities' economic and demographic environment: the population of the municipality (*population*), per capita income proxied by the personal income tax base (*income*), percentage of citizens aged 65 or above

⁶Administration and Management, County Police, Justice, Education, Culture, Sport, Tourism, Road and Traffic, Planning and Environment, Social Welfare, Development, Services for Production.

All the items are recorded on accrual basis.

(*aged*), percentage of citizens between 0 and 14 year old (*child*), the number of citizens per area (*density*).

Finally, there are certain time-unchanging characteristics of a municipality that are likely to affect the fiscal policies, such as climate and geography. We take these characteristics into account by including a dichotomous variable for each municipality. Changes in the macroeconomic situation may also affect the fiscal policies of all municipalities in specific years. To account for this, we include a set of time dummies, controlling for common yearly shocks.

4 Empirical strategy

We test the impact on revenues of *being a municipality with a double ballot election* by estimating the following reduced form equation:

$$rev_{mt} = \alpha_s + \beta_t + \gamma_1 double_{mt} \boxtimes termlim_{mt} + \gamma_2 double_{mt} \boxtimes (1 - termlim_{mt}) + \beta_3 Z_{mt} + \epsilon_{mt}, \quad (1)$$

where rev_{mt} is the real per-capita revenue in municipality m at time t . We estimate total revenue and disaggregated items. The dummy $double_{mt}$ equals 1 if the municipality is in the double ballot regime and zero otherwise; the dummy $termlim_{mt}$ equals 1 if the mayor of the municipality cannot be re-elected and zero otherwise; then the interaction $double_{mt} \boxtimes termlim_{mt}$ accounts for the case when the municipality is double ballot and term limit and the interaction $double_{mt} \boxtimes (1 - termlim_{mt})$ indicates the case when the municipality is double ballot, but the mayor can run for a new election.

As in all the subsequent regressions, we include municipality fixed effects and year dummies. The vector Z_{mt} includes a dummy equal to one if the mayor cannot run for re-election (*term limit*), real income per capita (*income*), population size (*population*), the square of population size (*popsquare*), percentage of citizens aged 65 or above (*aged*), percentage of citizens between 0 and 14 year old (*child*), the number of citizens per area (*density*) and the percentage of votes (*voteshare*) obtained by the mayor when elected (in particular in the first round for the double-ballot municipalities). We keep these explanatory variables in all the regressions as standard economic, political and demographic controls.

As long as γ_1 is statistically significant and negative/positive and γ_2 is non-significant, we can confirm that being in a double ballot regime affects the revenue decisions of the municipality. The coefficient γ_1 measures the impact on the revenue decided by the mayor when he/she can run for a new election, namely when the electoral system matters for the policy maker who wants to be re-elected, and γ_2 measures the impact on the revenue when the mayor cannot run for a new

election and therefore the electoral system should not matter at all in his/her policy decision. We expect γ_1 to be significant and negative and γ_2 non-significant for revenues categories directly affecting the great majority of voters. On the other side for revenue categories affecting narrow groups of citizens, we expect γ_1 to be significant and positive and γ_2 non-significant.

Simmetrically we estimate a reduced form for real per-capita expenditure by using the following equation:

$$exp_{mt} = \alpha_s + \beta_t + \theta_1 double_{mt} + \theta_2 term_{lim_{mt}} + \theta_3 Z_{mt} + \epsilon_{mt}, \quad (2)$$

where exp_{mt} is the real per-capita expenditure in municipality m at time t . We are interested in looking at total expenditure and its disaggregated functions. Expenditure should increase in broad welfare categories where citizens are very difficult to be targeted and decrease in those categories easily related to particular groups of people. The interpretation of θ_1 and θ_2 is analogous to that one previously proposed for γ_1 and γ_2 . We expect θ_1 to be significant and positive and θ_2 non-significant for expenditure categories directly affecting the great majority of voters. On the other side for expenditure categories benefiting small groups of citizens, we expect θ_1 to be significant and negative and θ_2 non-significant.

4.1 The neighborhood choice

The discontinuity set by the electoral rule at the threshold of 15,000 inhabitants provides the opportunity to implement a regression-discontinuity (RD) design. As well-known, a key point for a successful application of the RD approach is not the total number of units (the municipalities in this case) included in the data-set but rather the number of units that fall in a close neighbourhood of the discontinuity point: only if the sample of units within a small interval around the point of discontinuity is sufficiently large so that one can compare the outcome of different units "just above" and "just below" the treatment threshold, one can gain statistical efficiency in the estimate of the impact of different electoral systems on public budget decisions at municipal level.

To illustrate this point, first of all Table 1 reports the total number of changes in the electoral system (from single ballot to double ballot and the other way round) experienced by Italian municipalities during the elections held in the period 2001-2006. In total we count 26 switches corresponding in the panel to 150 observations (net of missing values): the Municipalities that switch from single ballot to double ballot electoral system (that means that the resident population in 2001 census is larger than that one in 1991 census) are 21 whereas the opposite

occurs in 5 cases.

Secondly in order to restrict the empirical analysis to an appropriate neighbourhood of the discontinuity point we choose to select only the observations with resident population between 13,000 and 17,000 inhabitants. This interval lets us keep most of the observations corresponding to the municipalities experiencing a switch in the electoral system during the period 2001-2006 (125 observations out of the abovementioned 150). With reference to this sample Table 2 reports the joint distribution of the dummy variables $double_{mt}$ and $termlim_{mt}$ that are included as regressors in equations (1) and (2). On a total of 1,183 observations (that, as mentioned before, include both switching and non-switching municipalities) 870 are referred to units (municipality/year) in which a single ballot election mechanism is applied, 333 to units in which a double ballot election mechanism is applied, 1052 to units in which the mayor can be re-elected, 131 to units in which the mayor is experiencing his second and ...nal term.

4.2 The econometric technique

The econometric strategy adopted here follows two different approaches and compares the results in this way derived. First of all we use the sample described in Table 2 to perform a difference-in-difference estimate of (1) and (2) following a regression discontinuity (DID-RD) approach (Egger and Koethenburgen, 2009). Secondly, we resort to the sample restricted to the switching municipalities only introduced in Table 1 to estimate (1) and (2) by using a within regression discontinuity (WRD) approach (Pettersson-Lidbom, 2008).

The traditional RD, while allowing treatment specific parameters, would assume identical coefficients for all the other parameters, since the regressions would be run on the pooled dataset. However if municipalities are heterogeneous with respect to time invariant variables correlated with the treatment dummy, then the estimate of the treatment effect would be biased. If a panel dataset is available, the approach combining the regression discontinuity design with the difference-in-difference technique allows to control for fixed effects and overcome the problem.

Another way out of the problem is to compare the outcome of the same subject under two different treatments, given that the value of the variable related to the treatment, before and after the change, is close to each other. This method, instead of using the differencing approach to control for municipality fixed effect and therefore exploiting also the comparison between municipalities not experimenting any switch from one electoral regime to the other, drops all the municipalities which are not switching. The obvious drawback of this approach is that removing all the municipalities not experimenting any switch leaves with a small number of

observations and this decreases the efficiency of the estimate.

5 Results

We have run two sets of regressions for revenues on one hand and on expenditures on the other hand.

Table 4 displays the results for revenues according to both DID-RD (col. 1-6) in the sample including municipalities with population in range 13,000-17,000 and WRD approach (col. 7-12). Table 3a displays the summary statistics of the dataset used in the DID-RD estimate and 3b those for the restricted dataset used with WRD approach.

Total revenues (col. 6) are not affected by the regime of the electoral rule, but being a double ballot municipality instead of a single ballot affects the composition of the total revenue but only if the mayor can run for re-election.

A municipality in a double ballot regime if the mayor is not term limit has a total taxes decrease of 22 euros per-capita with respect to a municipality in a single ballot regime of a similar size. This result is mainly due to the urban waste disposal tax and special duties and duties. In fact the coefficient of the urban waste disposal tax in the double ballot regime if the mayor is not term limit decreases of 9.5 euros with respect to the single ballot coefficient. One could object that this result is due to a legislative shock happened in municipalities switching from taxes to tariffs, or externalizing the urban waste disposal service; we control for these factors by building a balance (col. 3) given by the difference between the expenditure for the urban waste disposal service and taxes plus tariffs ...nancing it and use as the dependent variable: the coefficient of the double-ballot dummy interacted with the no-term limit dummy is 6.83 and 1% significant, meaning that the the double ballot electoral system creates incentives to relax the budget constraint of this service, which might be entirely ...nanced through the payment of a tax or tariff from the citizens benefiting of it. Another category affected by the electoral system is special duties, basically taxes on advertisements and administrative documents which must be paid to public offices. A double ballot municipality if the mayor is not term limit registers a decrease of more than 7.1 euros with respect to a single ballot municipality.

On the other side the revenue coming from planning charges increases of almost 24 euros per-capita for a double-ballot and term limit municipality with respect to a single ballot municipality. There is a substitution from taxes and duties very related to the broadly provided public services (and well identified subjects who pay for them) with revenue from planning charges which must be paid to ...nance urbanization costs when a licence for new buildings is released. The planning charge is not perceived by the taxpayer (the entrepreneur) as a tax but more as an investment

cost, given that it finances infrastructure from the municipality to incorporate the new buildings in the civic area. Of course it could imply a shadow cost for the citizens when in the future they cannot enjoy the park or free area which was there before the buildings and new infrastructure came, but, it seems very unlikely that in the time when the revenue is raised citizens will internalize this possibility preferring an increase in urban waste disposal tax or special taxes and duties which represents for them actual decrease in own resources.

In the second part we explore the within variation in a regression discontinuity design where we have 26 municipalities in the population range 13000-17000 which in the years 2001-2006 switched from single ballot to double ballot and viceversa, when having election after february 2003, the date when the law with the new legal population from the 2001-census was promulgated. The results, almost identical to the ones obtained with the DID-RD approach (column 1-6), confirm the crucial role in the tax policy change played by the municipality switching from one regime to the other.

All in all we can confirm that municipalities in a double-ballot regime do not change their revenue level, however, they change the composition of it, if the mayors are not term-limit, decreasing urban waste disposal taxes or tariffs and special duties and increasing the revenue from planning charges. The rationale is that since the double ballot municipality ends up with more parties than the single ballot municipality (Bordignon and Tabellini 2009), the mayor, if he wants to be re-elected, need to find agreements on a moderate policy platform with more parties than in a single ballot: one easy way to let everybody agree is decreasing direct taxes by using some other source of revenue not easily related to precise identifiable taxpayers.

In Table 4 we examine public expenditure according to both DID-RD (col. 1-4) and WRD approach (col. 5-12).

Total expenditure (col. 4) is not affected by the regime of the electoral rule, but being a double ballot municipality instead of a single ballot affects the composition of the current expenditure.⁷ In particular road and traffic expenditure decreases of 3 euros per capita when the municipality is double ballot and the mayor is term-limit with respect to the case when the mayor is single ballot: the same difference does not hold when the mayor is term-limit even if the electoral system is double ballot. Expenditure for education increases of 5 euros per capita when the municipality is double ballot and the mayor is term-limit with respect to the case when the mayor is single ballot, and of almost 9 euros per capita when the mayor is term-limit and the electoral system is double ballot. This result means that the double ballot system

⁷As regards capital expenditure, only the development function is affected in the WRD model, but the interpretation is not straightforward since the capital expenditure is not decided year by year but it is the outcome of a medium-term plan.

does affect positively the expenditure not only for electoral reasons. The previous results are almost replicated by using the WRD approach and moreover the significant coefficient for the double ballot interacted with *termlimit* in the education function disappears. Using the WRD approach other expenditure functions come up to be significant and positive in the double ballot case when the mayor is not *termlimit* and in particular culture, sport and development increasing respectively of 3.8, 1, 0.87 euro percapita.

6 Conclusions

We tested the impact on fiscal policies of a single versus double ballot electoral regime by using a regression discontinuity analysis. We use a panel dataset 2001-2006 of all Italian municipalities including financial socio-economic and political data. We exploit, either the between, and the within dimension of the dataset by applying the difference-in-difference method to a regression discontinuity analysis (Egger and Koethenbueger, 2009) and then compare the results with a within regression discontinuity analysis (Pettersen-Lidbom, 2008).

Our test looks at the effect of the two electoral systems on expenditure and tax composition. Moreover, we exploit the two-*termlimit* law for the mayoral election in Italy to test if the impact of the different electoral regime on fiscal policy choice is really motivated by the rational behaviour of the candidates who want to maximize their probability of winning the election. We find that municipalities in a double ballot regime do not change their revenue level, however, they change the composition of it. If the mayor is not *termlimit*, a double ballot municipality decreases urban waste disposal taxes or *tari* and special duties and increases the revenue from planning charges: the former are paid by everybody and therefore comparable to a negative broad expenditure program and the latter are paid by buildings entrepreneur and very rarely perceived as taxes; as regard expenditure, education increases and road and traffic decreases: the former belong to the category of broad programs and the latter are much more targetable. Our results hold with both the difference-in-difference regression discontinuity and the within regression discontinuity analysis.

7 References

Austen-Smith, D. (2000), "Redistributing income under proportional representation", *Journal of Political Economy*, 108, 1235-69.

Besley, T., and A.C. Case (1995), "Does Political Accountability Affect Economic Policy

Choices? Evidence from Gubernatorial Term Limits", *Quarterly Journal of Economics*, 110, 769-98.

Bordignon, M. and G. Tabellini (2009), "Moderating Political Extremism: Single Round vs Runoff elections under Plurality Rule", Cesifo, 2600.

Dixit, A. and J. Londregan (1998), "Ideology, Tactics, and Efficiency in Redistributive Politics", *Quarterly Journal of Economics*, 113, 497-529.

Egger, P., and M. Koethenbueger (2009), "Government Spending and Legislative Organization: Quasi-Experimental Evidence from Germany", forthcoming in *American Economic Journal: Applied Economics*.

Fabbrini, S. (2001), "Features and Implications of Semi-Parliamentarism: the Direct Election of Italian Mayors", *South European Society & Politics*, 6, 47-70.

Funk, P. and C. Gathmann (2009), "How do Electoral Systems Affect Fiscal Policy? Evidence from State and Local Governments, 1890 to 2005", mimeo Pompeu Fabra University, Barcelona.

List, J. A. and D. Sturm (2006), "How Elections Matter: Theory and Evidence from Environmental Policy", *Quarterly Journal of Economics*, 121, 1249-1281.

Lizzeri, A. and N. Persico (2001), "The Provision of Public Goods under Alternative Electoral Incentives", *American Economic Review*, 91, 225-45.

Milesi-Ferretti, G.-M., R. Perotti and M. Rostagno (2002), "Electoral Systems and the Composition of Public Spending", *Quarterly Journal of Economics*, 117, 609-57.

Myerson, R. (1993), "Effectiveness of Electoral Systems in Reducing Government Corruption: a Game-theoretic Analysis", *Games and Economic Behavior*, 5, 118-32.

Persson, T and G. Tabellini (2000), *Political Economics: Explaining Economic Policy*, MIT Press (MA).

Persson, T. and G. Tabellini (2003), *The Economic Effects of Constitutions: What do the Data Say?*, MIT Press (MA).

Petterson-Lidbom, P. (2008), "Does the Size of the Legislature Affect the Size of Government? Evidence from Two Natural Experiments", mimeo, Stockholm University.

8 Data Appendix

List of variables

Financial variables: from the Italian Ministry of Interior

(http://...nanzalocale.interno.it/sitophp/home___nloc.php?Titolo=Certi...cati+Consuntivi)

- ² *Taxes*: real total direct taxes (year 2006 constant euros per capita).
 - ² *Urban waste disposal tax*: real tax for waste disposal (year 2006 constant euros per capita).
 - ² *Special duties*: real duties for administrative services and taxes for advertsments (year 2006 constant euros per capita).
 - ² *Planning charges*: real charges for public infrastructure services for new buildings (year 2006 constant euros per capita).
 - ² *Total revenue net of borrowing*: real total revenue net of borrowing (year 2006 constant euros per capita).
 - ² *Current Expenditure*: real total current public expenditure (year 2006 constant euros per capita).
 - ² *Current Education*: real current public expenditure in Education (year 2006 constant euros per capita).
 - ² *Current Road and TraŒc*: real current public expenditure in Road and TraŒc (year 2006 constant euros per capita).
 - ² *Current Culture*: real current public expenditure in Culture (year 2006 constant euros per capita).
 - ² *Current Sport*: real current public expenditure in Sport (year 2006 constant euros per capita).
 - ² *Current Development*: real current public expenditure in Development (year 2006 constant euros per capita).
 - ² *Total Expenditure*: real total public expenditure (year 2006 constant euros per capita).
- Political variables: authors' elaboration on data from from the Italian Ministry of Interior (<http://amministratori.interno.it/AmmIndex5.htm> and from <http://elezionistorico.interno.it/index.php?tp=G>)
- ² *Double Ballot*: dummy variable equal to one when the mayor of the municipality is elected according to a double-ballot electoral system, and zero otherwise

² *Termlimit*: dummy variable equal to one when the mayor of the municipality cannot run for the next election because he/she is spending his/her second mandate, and zero otherwise.

² *Voteshare*: percentage of votes obtained by the mayor when elected (the variable refers to the ...rst round for the double-ballot municipalities)

Demographic and socio-economic variables: from the Italian Ministry of Interior (<http://...nanzalocale.interno.it/ser/ispett.html>) and from the Italian Institute of Statistics (ISTAT - www.istat.it/dati/catalogo/20061102_00/)

² *Income*: real personal income tax base (year 2006 constant euros per capita).

² *Population*: state population divided by 1000.

² *Aged*: share of population over 65 years old.

² *Child*: share of population between 0 and 14 years old.

Tab. 1 - Italian municipalities: number of changes in electoral system (2001-2006).

election year	from single ballot to double ballot	from double ballot to single ballot
2003	6	1
2004	9	1
2005	1	1
2006	5	2
total	21	5

Tab.2 - Italian Municipalities: joint distribution of observations with 13,000<inhabitants<17,000 (2001-2006).

	no termlim	termlim	total
single ballot	767	82	870
double ballot	285	49	334
total	1052	131	1183

Note: We report the distribution of the number to Municipalities we use in the regressions of tables 4 and 5. Municipalities in the population range 13000-17000 are 1202, but we can use only 1183 observations because for the 19 left financial data are missing. For some expenditure categories they are 1184.

Table 3a - Summary statistics of the dataset in the population range 13000-17000.

Variable	Obs	Mean	Std. Dev.	Min	Max
Taxes	1183	617.34	179.75	0.49	1545.89
Urban waste disposal tax	1183	63.06	41.77	0.00	244.38
Balance urb. waste disposal	1183	6.74	20.65	-241.33	198.06
Special duties	1183	7.14	20.97	0.00	159.08
Planning charges	1183	55.35	51.20	0.00	594.13
Total revenue net of borrowing	1183	815.42	315.31	0.57	3142.54
Current Expenditure	1183	577.10	170.29	0.47	1348.92
Current Education	1184	63.37	25.81	0.00	151.99
Current Road and Traffic	1184	37.41	18.18	0.00	228.73
Total Expenditure	1183	1027.89	392.61	0.68	3398.12
Population	1183	14792.44	1138.79	13001.00	16997.00
Child	1183	0.15	0.03	0.09	0.25
Aged	1183	0.18	0.04	0.07	0.29
Density	1183	705.81	881.95	54.34	33.67
Income	1183	7797.26	2782.95	789.76	4358.01
Voteshare	1183	52.42	19.70	16.01	41.99

Table 3b - Summary statistics of the dataset in the population range 13000-17000 including only the 26 municipalities switching from single ballot to double ballot or viceversa.

Variable	Obs	Mean	Std. Dev.	Min	Max
Taxes	125	646.75	173.02	356.82	979.46
Urban waste disposal tax	125	71.72	42.79	0.00	190.01
Balance urb. waste disposal	125	9.99	17.37	-75.93	48.07
Special duties	125	5.08	13.88	0.00	103.75
Planning charges	125	58.14	49.06	0.00	246.49
Total revenue net of borrowing	125	923.72	486.01	362.70	2984.43
Current Expenditure	125	597.55	160.75	323.75	946.43
Current Education	125	68.64	30.19	7.79	140.99
Current Culture	125	16.73	11.23	0.00	39.12
Current Sport	125	11.66	7.00	0.53	25.70
Current Road and Traffic	125	36.79	16.47	12.23	86.03
Current Development	125	5.08	3.86	0.00	15.95
Total Expenditure	125	1148.03	556.09	461.64	3398.12
Population	125	15635.38	763.15	14279.00	16967.00
Child	125	0.15	0.03	0.11	0.23
Aged	125	0.17	0.04	0.09	0.26
Density	125	910.50	1561.96	76.19	8033.67
Income	125	7969.24	3244.61	2182.14	14285.45
Voteshare	125	51.63	12.69	25.06	80.27

Table 4 - Revenue of the Italian Municipalities with population between 13000 and 17000 expressed in euros 2006.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Difference-in-Difference Regression Discontinuity Approach						Within Regression Discontinuity Approach					
	Taxes	Urban waste disposal tax	Balance urb. waste disposal	Special duties	Planning charges	Total revenue net of borrowing	Taxes	Urban waste disposal tax	Balance urb. waste disposal	Special duties	Planning charges	Total revenue net of borrowing
DoubleBallot*(1-Termlimit)	-22.0400 (2.74)***	-9.5901 (1.90)*	6.8302 (2.81)***	-7.1660 (2.24)**	20.4267 (2.97)***	23.7653 (0.71)	-23.1352 (2.10)**	-14.1814 (2.14)**	8.5577 (2.95)***	-5.8240 (1.76)*	30.8225 (2.92)***	47.8357 (1.13)
DoubleBallot*Termlimit	-16.5309 (1.16)	0.5920 (0.05)	-0.2856 (0.07)	-6.4539 (1.23)	-8.4554 (0.77)	-15.3904 (0.24)	-35.2578 (1.40)	-1.3738 (0.10)	-8.4689 (0.98)	-28.5437 (1.43)	-7.5383 (0.37)	34.5187 (0.46)
Termlimit	6.0646 (0.82)	4.6319 (1.11)	0.3568 (0.18)	5.0266 (1.43)	5.2228 (0.81)	1.7255 (0.06)	-18.6523 (0.90)	-7.3961 (0.54)	10.7811 (1.32)	18.0113 (1.04)	12.9280 (0.92)	115.2760 (2.54)**
Population	0.0652 (0.76)	0.0406 (0.76)	0.0169 (0.69)	0.0483 (1.43)	0.0723 (1.14)	-0.1894 (0.50)	0.3749 (0.66)	-0.0902 (0.26)	-0.0840 (0.64)	-0.1880 (0.77)	-0.2282 (0.33)	-1.7161 (0.75)
Popsquare	-0.0000 (1.07)	-0.0000 (0.88)	-0.0000 (0.72)	-0.0000 (1.45)	-0.0000 (0.91)	0.0000 (0.54)	-0.0000 (0.74)	0.0000 (0.22)	0.0000 (0.70)	0.0000 (0.76)	0.0000 (0.31)	0.0001 (0.75)
Child	1,496.2419 (3.38)***	-1,868.6227 (6.63)***	26.6621 (0.14)	-94.7993 (0.56)	-474.6983 (1.62)	-3,844.6632 (2.01)**	1,927.7784 (1.83)*	-834.0276 (1.59)	-913.1573 (3.39)***	-1,003.4302 (3.25)***	563.9658 (0.44)	-2,913.7829 (0.64)
Aged	1,027.4802 (1.82)*	-198.1479 (0.61)	3.5219 (0.01)	68.9527 (0.36)	-247.3887 (0.66)	4,317.4937 (2.58)***	579.7397 (0.46)	327.5845 (0.44)	148.3438 (0.50)	-532.5453 (1.30)	-43.3032 (0.03)	9,810.4429 (1.68)*
Density	0.0212 (0.36)	0.0484 (1.75)*	-0.0137 (0.64)	-0.0117 (0.63)	-0.1329 (1.87)*	0.0073 (0.03)	-0.0259 (0.23)	0.0552 (0.89)	-0.0070 (0.27)	0.0222 (0.51)	0.1033 (0.96)	0.5358 (1.59)
Income	0.0033 (1.46)	0.0008 (0.54)	-0.0008 (1.36)	0.0016 (1.81)*	-0.0010 (0.81)	0.0037 (0.28)	-0.0202 (1.35)	-0.0244 (2.16)**	-0.0026 (0.69)	0.0070 (1.82)*	0.0063 (0.65)	0.0803 (1.51)
Voteshare	-0.2051 (2.72)***	-0.0285 (0.98)	-0.0149 (0.66)	0.0377 (2.02)**	0.4162 (2.24)**	1.2325 (2.11)**	-0.5894 (1.23)	-0.5264 (2.03)**	0.1439 (1.03)	-0.1693 (0.86)	0.6666 (1.52)	0.6522 (0.32)
Constant	-520.6076 (0.77)	133.2465 (0.33)	-91.8883 (0.50)	-351.0999 (1.38)	-485.5604 (1.83)	1,649.5868 (0.54)	-2,756.7708 (0.60)	1,101.8015 (0.40)	768.7701 (0.72)	1,719.7734 (0.88)	1,805.7665 (0.32)	12,857.4031 (0.69)
Observations	1183	1183	1183	1183	1183	1183	125	125	125	125	125	125
r-squared	0.9176	0.7580	0.4631	0.5048	0.6444	0.7704	0.9621	0.8143	0.7916	0.5014	0.6954	0.7704

Robust t statistics in parentheses

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

Note: In column 1-5 we use a sample with all the municipalities in the population range 13000-17000. In column 6-10 we selected in the restricted sample with population in the range 13000-17000 the municipalities switching from below 15000 to above 15000 or from above 15000 to below 15000 after the first election with the new electoral regime established with the 2003 Presidential law. The population-range restriction let us loose 25 observations of municipalities in years when the population was larger than 17000.

Tabella 5 - Per capita Public Expenditure of Italian Municipalities with population between 13000 and 17000 expressed in euros 2006.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Difference-in-Difference Regression Discontinuity				Within Regression Discontinuity Approach						
	Current Expenditure	Current Education	Current Road and Traffic	Total expenditure	Current Expenditure	Current Education	Current Culture	Current Sport	Current Road and Traffic	Current Development	Total Expenditure
DoubleBallot*(1-Termlimit)	-8.1078 (0.72)	5.1066 (2.74)***	-3.0066 (2.62)***	9.5518 (0.23)	-10.0728 (0.73)	5.3164 (1.75)*	3.7951 (2.18)**	1.0577 (1.85)*	-2.6445 (2.30)**	0.8750 (2.05)**	33.1535 (0.62)
DoubleBallot*Termlimit	26.1502 (1.33)	8.8547 (2.96)***	-1.8668 (0.78)	-33.1247 (0.35)	11.7706 (0.44)	6.8800 (0.72)	0.4386 (0.09)	-0.6895 (0.23)	1.3251 (0.55)	0.3544 (0.23)	95.0240 (1.01)
Termlimit	-27.4959 (3.09)***	0.7325 (0.59)	-1.2318 (1.36)	5.5928 (0.17)	8.5857 (0.48)	3.7919 (1.15)	3.6319 (2.01)**	1.4325 (1.19)	-6.5196 (3.21)***	0.5713 (0.62)	203.3837 (3.00)***
Population	-0.2703 (2.27)**	-0.0138 (1.01)	-0.0063 (0.42)	-0.3316 (0.71)	-1.2067 (1.67)*	-0.1604 (1.52)	-0.0530 (0.83)	0.0443 (1.26)	0.1372 (2.34)**	-0.0256 (1.08)	-1.3237 (0.48)
Popsquare	0.0000 (2.14)**	0.0000 (1.04)	0.0000 (0.52)	0.0000 (0.78)	0.0000 (1.65)	0.0000 (1.56)	0.0000 (0.80)	-0.0000 (1.28)	-0.0000 (2.43)**	0.0000 (1.02)	0.0000 (0.47)
Child	-1,761.5960 (2.24)**	262.9731 (3.00)***	-143.8212 (1.72)*	-4,368.7586 (1.86)*	133.3224 (0.10)	262.8213 (1.57)	101.3298 (1.08)	-17.8388 (0.25)	-11.3915 (0.10)	11.5222 (0.27)	-1,913.3200 (0.33)
Aged	2,041.3838 (2.65)***	-110.3495 (1.13)	67.5153 (0.77)	5,792.3802 (2.34)**	3,809.1185 (2.20)**	-5.9094 (0.03)	218.1380 (2.12)**	60.6361 (0.71)	418.1331 (2.64)***	-44.5197 (0.70)	10,061.8075 (1.48)
Density	0.0600 (0.70)	-0.0077 (0.71)	-0.0090 (0.91)	-0.5162 (1.24)	0.2167 (1.96)*	0.0201 (1.46)	0.0136 (1.34)	0.0028 (0.57)	-0.0000 (0.00)	0.0058 (1.41)	1.0181 (2.12)**
Income	0.0057 (1.37)	-0.0013 (2.92)***	0.0007 (1.98)**	0.0100 (0.62)	0.0071 (0.42)	-0.0001 (0.01)	-0.0000 (0.03)	-0.0005 (0.63)	-0.0058 (3.03)***	0.0002 (0.20)	0.2344 (2.79)***
Voteshare	0.6940 (1.22)	0.0114 (0.41)	0.0048 (0.52)	1.3705 (2.15)**	-0.8384 (1.08)	-0.0049 (0.07)	-0.0239 (0.49)	0.0220 (0.70)	-0.1394 (2.42)**	-0.0070 (0.29)	2.5949 (1.08)
Constant	2,397.7430 (2.54)**	110.0020 (1.01)	67.1449 (0.56)	2,830.8663 (0.75)	9,407.8331 (1.62)	1,227.1974 (1.44)	393.1152 (0.76)	-346.6017 (1.21)	-1,082.4048 (2.25)**	225.1560 (1.19)	8,528.0377 (0.38)
Observations	1183	1184	1184	1183	125	125	125	125	125	125	125
r-squared	0.8990	0.9400	0.8964	0.7245	0.9503	0.9589	0.9121	0.9336	0.9634	0.8814	0.9288

Robust t statistics in parentheses

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

Note: See table 1.