

Coalition list (or of lists): 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, holding in Italy for municipality depending on their population level with respect to the 15,000 inhabitants threshold affect fiscal policies decisions. Municipalities with less than 15,000 inhabitants elect the mayor by adopting a single ballot plurality rule where only a single list can support the candidate; municipalities with more than 15,000 inhabitants elect the mayor by adopting a run-off plurality rule, not imposing any restriction on the number of lists that can support a mayoral candidate and also enabling the aggregation (between the first and second round in the case of a second ballot) of new lists in support of one or other of the candidates still in the race. Moreover, in the latter case the majority premium to the coalition is given only if it passed a vote-threshold of 40 percent ; this contrasts the absence of binding constraints to get the majority premium of 66 percent in the electoral regime for the small municipalities. The large-municipality electoral system generates more lists heterogeneity in power than the small-municipality-electoral system and typical common pool problems can make financial targets very hard to be maintained successfully than in the case a strong mayor supported by his own list is in power. We find evidence that a large municipality with respect to a small one, decreases direct taxes but no effect on expenditure is found. This contrasts with previous finding (Roubini and Sachs, 1989; Kontopoulos and Perotti, 1999) where the free-riding problem generate a higher level expenditure financed through a deficit increase. This is due to the very strict financial rule of the municipalities which are basically not allowed to run any deficit, but can play with their surplus devoted to finance future investments.

JEL codes: H3, H21, H77

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1 Introduction¹

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; Mayerson, 1993; Persson and Tabellini, 2000). Almost no attention, except for a recent work by Bordignon Nannicini and Tabellini (2010), 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 final 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 focus our attention on the Italian case. This is very interesting for studying the impact on fiscal policies, in fact the system for municipalities with more than 15,000 inhabitants does not impose any restriction on the number of lists that can support a mayoral candidate, it also enables the aggregation, between the first and second round in the case of a second ballot, of new lists in support of one or other of the candidates still in the race. On the contrary, only one list can support the mayor in the system of municipalities with less than 15000 inhabitants and 2/3 of the elected council members belongs to this list. Moreover, in the former case the majority premium to the coalition is given only if it passed a vote-threshold of 40% and in case of second ballot no other group of lists associated with a rival mayoral candidate obtained the absolute majority; this contrasts with the absence of binding constraints to get the majority premium of 2/3 of the total in the electoral regime for the small municipalities.

The small municipality regime determines clearly a council firmly allined with the mayor (2/3 of the members belongs to the list supporting the mayor), the large municipality regime gives a mayor dealing with a council where a coalition of lists supports him/her: decisions can be a compromise of different views of the allied lists. This is very similar to proportional representation systems tending to have a higher number of effective parties in parliament and characterized by multiparty majority governments. Lijphart (1984) reports that from 1945

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through 1980 plurality systems had on average 2.1 effective parties, while proportional representation systems had 3.8 effective parties. Finally, countries with plurality or proportional representation system with small district magnitude are likely to have one-party majority governments, while proportional representation systems with large districts magnitude usually have either multiparty majority governments or minority governments (Austen-Smith, 2000; Myerson, 1993). Moreover, the same plurality double ballot system could in principle generate more candidates than plurality single ballot system, in fact according to the Duverger's Law (1954) it should favour the two party system, while with a "simple majority with a second ballot...favors multipartitism". This intuition has been formalized (Cox, 1997; Mayerson, 1999) as the $m + 1$ rule, where m are the seats and $m + 1$ the maximum number of candidates which can obtain all the votes. It follows that since the single ballot plurality rule is an election with one seat and the first round of the double ballot plurality rule is an election with two seats, the single ballot system will end up with two candidates and the double-ballot with three candidates (Cox 1997, Martinelli 2002). Notice, however, that this result holds when there is no risk of upset victory for the minority candidate at the first round, namely the electors-minority quota is very small (Bouton, 2010). Recently Fujiwara (2010) show evidence, by using a data on mayoral election in Brazil for 1996-2004, that a change from single to dual ballot increases voting for the third placed candidates, decreasing the votes margin between the second and the third, but also the first and the third; coherently with Fujiwara (2010), Bordignon et al. (2010) by using data on mayoral election in Italy for 1985-2007 find that the dual ballot leads to a larger number of candidates than the single ballot.

Summing up, we can say that in Italy the dual ballot system generates more lists eterogeneity in power than the single ballot. In fact, *first* there is only one list which can be associated with the mayor in the single ballot, but a the multiple list in the double ballot; *second* the possibility that more than two lists can be voted in the first round generating a potential further alliance in the second round.

Interestingly, when Bordignon et al. (2010) extend their theoretical model by allowing for the possibility that at the second ballot one of the excluded party can endorse one of the two running off, they find that if the electorate is enough polarized a four party system emerges at the first round and two coalitions will run off at the second round. Roubini and Sachs (1989) argue that coalition members can possibly have divergent interests and so they face a prisoner's dilemma with respect to budget cuts: all the partners prefer comprehensive budget cuts with respect to continuing large deficits; however, each of them has an incentive to protect a particular part of the budget from cuts; this is the so called "wars of attrition" by Alesina and Drazen (1991).

In this paper, following Hallenberg and Von Hagen (1999) we argue that these two literatures complement one another. A strong mayor is feasible in municipalities where one-list governments are the norm, and such municipalities in the Italian case usually have the single ballot plurality electoral system and allow only one list to support the mayor. In multilist municipal governments, which are those where the mayor is elected with the double ballot plurality system and he/she is supported by a coalition of lists, typical common pool problems make financial targets very hard to be maintained successfully than in the case a strong mayor supported by his own list is in power.

We find evidence that a large municipality with respect to a small one, decreases direct taxes but no effect on expenditure is found. This contrasts with previous findings (Roubini and Sachs, 1989; Kontopoulos and Perotti, 1999) where the free-riding problem generates a higher level expenditure financed through a deficit increase. This is probably due to the very strict financial rule of the municipalities which are basically not allowed to run any deficit, but can play with their surplus directed to finance future investments.

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

The Italian Constitution provides for five layers of government: state, regions (ordinary statute regions and special statute regions), provinces, municipalities, and metropolitan authorities (not yet constituted). In particular local government comprises currently 8,094 municipalities (2010) ranging in size from a small village to a large town.

2.1 Public Finance

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 for services like trash collection or provision of public infrastructure and, lastly, by transfers from the central government that still remain quite considerable (about 30%) in the municipal budget.²

2.2 Electoral rules

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 every 5 years. The mechanism of direct election implies that the mayor is endowed with strong powers in municipal politics (a basic feature of a presidential government) even though the council retains the power to dismiss the mayor by passing a vote of no confidence in him/her (a basic feature of a parliamentary government).³

The election rule of both the mayor and the council members are important, in fact even if "direct election legitimates the mayor's role as the driving force of the government by making him the central component of the entire local administration" (Scarciglia, 1993), at the same time the possibility of passing a vote of no confidence make credible the council's task of exerting control over the mayor. A task, that it performs through discussion and approval of the courses of action by the executive set out in the programme that the mayor must submit to the council together with his budget proposals. If a vote of approval is not passed, two different cases may arise: the government continues with its action without the council implementing its extreme power; or else the council implements its power by voting a motion of no confidence, which if approved leads to new elections for both.

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 "certified" population in 2001 - that is the great majority of the Italian municipalities) and the second those with more than 15,000 inhabitants (a total of 664).

In small municipalities the electoral system is quite simple: each mayoral candidate is associated with a list of candidates for council members. Voters are entitled to vote for a mayoral candidate and may cast, if they want, a preference vote for a council member candidate. The

²The 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.

³This system of government is referred by Fabbrini (2001) as a case of semi-parliamentarism.

mayoral candidate who gains the largest number of votes is elected mayor and two-thirds of the council are attributed to the list supporting the winning mayoral candidate. The remaining seats are attributed proportionally among the other lists. Hence, small municipalities will never face a "divided" government, that is the case in which the mayor and the council majority belong to different parties.

For large municipalities a double-ballot majoritarian electoral mechanism is applied. Each mayoral candidate is associated with one or a coalition of lists of candidates for council members; in the first ballot voters are entitled to vote for a mayoral candidate and, if they want, for one list associated or not with him/her (that is the split vote is admitted). Each candidate for mayor must officially declare to connect with one or more lists running for election to the council. The declaration is effective only if it converges with a similar statement made by the delegates of the lists involved. Namely a coalition of parties is offered to electors.

The mayoral candidate that gains the absolute majority of votes is elected mayor in the first ballot; the lists for the municipal council linked with the elected mayor are assigned a majority premium amounting to 60% of the seats in the council, if they get at least 40% of votes, otherwise, the council seats are assigned proportionally among the lists receiving votes without any majority premium.

If the mayoral candidate does not receive the absolute majority of votes in the first ballot, then a second ballot is held between the two candidates collecting the largest number of votes in the first round. 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 band-wagoning effect. In the second ballot voters are entitled to vote for a mayoral candidate, whereas votes to the lists are excluded. The candidate that ultimately obtains the absolute majority of votes is elected mayor. Similarly to the case of a mayor elected in the first ballot, if the lists of candidates for council members associated with the elected mayor collected more 40% of the votes in the first ballot (and no other group of lists associated with a rival mayoral candidate obtained the absolute majority), they ultimately receive the majority premium (60% of the total number of seats); the seats of the coalition of lists getting the majority premium are distributed proportionally to the votes got by each candidate and the list supporting him. If the coalition of lists supporting the mayor does not get the majority premium then the council seats are assigned proportionally to the votes received by each list in the first round. Therefore, in this case it may occur that the elected mayor belongs to a party which is not in the majority controlling the council. In practice this happens very rarely because political parties tend to form larger alliances than in the single ballot regime in order to avoid ending up with divided governments.

Thus, even though the mayoral candidate and the lists associated with him/her subscribe to a share electoral programme, the split vote is an incentive for them to keep their political fates separate. In particular, if the mayoral candidate did not do this, she would have less chance of gaining the votes of those voters who do not endorse any of the lists supporting him/her. Consequently, although there is an incentive for the various lists to back a joint programme and mayoral candidate in order to benefit from the premium, the persistence of a proportional electoral system for the distribution of the seats due to the winning coalition has inevitably encouraged competition internally to the latter. The electoral system is therefore based on contradictory incentives: for aggregation on the one hand, and for disaggregation on the other. Thus, “allies are at the same time rivals” (Barbera, 1993), in that it is a *coalition of lists* that is encouraged rather than a *coalition list* as it can be the case in the small municipalities with only a single list admitted.

All in all then, the system for municipalities with more than 15000 inhabitants not only has not imposed any restriction on the number of lists that can support a mayoral candidate, it has also enabled the aggregation (between the first and second round in the case of a second ballot) of new lists in support of one or other of the candidates still in the race. On the contrary in the system of municipalities with less than 15000 inhabitants only one list can support the mayor and the majority of the elected council members belongs to this list. Moreover, in the former case the majority premium to the coalition is given only if it passed a vote-threshold of 40% and in case of second ballot no other group of lists associated with a rival mayoral candidate obtained the absolute majority; this contrasts the absence of binding constraints to get the majority premium of 66% in the electoral regime for the small municipalities.

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 comprises a full array information organized into four different blocks: 1) fiscal data on spending and revenue 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) electoral data covering the results of the elections in which the mayor and the council members in office during the period covered by the data-set have been elected; 4) demographic and socio-economic data of municipalities 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 information on revenues classified in taxes, charges, transfers and revenue from public asset sales and on expenditures. 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 The electoral rule and other political variables

As we have already seen the municipality electoral rule prescribes two different electoral systems according to the population resident in each municipality up 15,000 (from now *small*) and after 15,000 (from now *large*) inhabitants threshold. This electoral rule gives a source of variation in the electoral mechanism that is plausibly exogenous with respect to decision area of policy-makers: we define a dummy (*large*) 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 large-municipality rule and zero when on the contrary the small-municipality rule has been applied for her/his election. The result is that our sample include both municipalities where the mayor(s) in office over the period 2001-2006 has(have) been all elected by means of a unique electoral system and municipalities where we observe mayors in office in different years that have been elected under different electoral rules.

In this regard it is important to point out that the 15,000 inhabitants threshold relevant for the choice of the electoral system to be actually applied in a specific municipality-election year is not measured with reference to the actual population resident in that year but rather to the “certified” population recorded by the census carried out 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 “reference” population is that one recorded in the census carried out in 1991, and so on). This exclude that the information about the population size can be misreported by local authorities in order to endogeneously select the electoral mechanism to be applied in a certain election year. Moreover, it should be stressed that, given these operational arrangements, the electoral rule may induce a change in the electoral system applied in a municipality only when an increase/a decrease of the “certified” population across the discontinuity threshold of 15,000 inhabitants

(that, as mentioned above, may occur once per decade) is actually applied in the election years (as a general rule every 5 years) that fall on that decade. This could imply that the 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 Finally, in the data set each treatment is generally associated with more than one observation since the term in office is, as said, normally 5 years and the panel is built on an annual basis.

We measure the political power of the mayor by using the number of votes (*voteshare*) cast in the first ballot. Since the Italian law establishes a limit of no more than two consecutive mandates for the office of mayor, a dummy variable (*termlimit*) has been derived to indicate if a mayor in office in a certain year is carrying out his second consecutive office and thus cannot be re-elected for another term: the impossibility of a further re-election may significantly bias the budgetary decisions of a municipality (Besley and Case 1995; List and Sturm 2006).

3.3 Socio-economic and demographic controls

We include a set of time-varying variables that characterize the municipalities' economic and demographic situation: the population of the municipality (*population*), per capita income proxied by the personal income tax base (*income*), the proportion of citizens who are aged between 0 and 14 (*child*), and the proportion over 65 (*aged*). 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 elected according to the large-municipality electoral-rule* by estimating the following reduced form equation:

$$TAX_{mt} = \alpha_s + \beta_t + \gamma_1 \mathbf{LARGE}_{mt} + \gamma_2 \mathbf{Z}_{mt} + \epsilon_{mt}, \quad (1)$$

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

where TAX_{mt} is the real per-capita total revenue in municipality m at time t . We estimate total revenue and some of its disaggregated categories. The dummy \mathbf{LARGE}_{mt} equals 1 if the municipality is in the *large* electoral regime and zero otherwise.

As in all the subsequent regressions, we include municipality fixed effects (α_s) and year dummies (β_s). \mathbf{Z}_{mt} is a vector including a dummy equal to one if the mayor cannot run for re-election (*termlimit*), real income per capita (*income*), population size (*population*), the square of population size (*popsquare*) and then the other population controls to the power of three and four, 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*), the percentage of votes (*voteshare*) obtained by the mayor when elected (in particular in the first round for the double-ballot municipalities) and a dummy equal to one (*ballot*) if the mayor of the municipality has been elected at the run-off. We keep these explanatory variables in all the regressions as standard economic, political and demographic controls.

As long as γ_1 is statistically significant, we can confirm that being in a large electoral regime affects the tax decisions of the municipality. The coefficient γ_1 measures the impact on the level of taxes decided by the mayor when he/she is elected with a large-municipality electoral-mechanism.

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

$$EXP_{mt} = \gamma_s + \delta_t + \theta_1 \mathbf{LARGE}_{mt} + \theta_2 \mathbf{Z}_{mt} + \epsilon_{mt}, \quad (2)$$

where EXP_{mt} is the real per-capita current expenditure in municipality m at time t ; γ_s are municipalities' fixed effects and year dummies are δ_t . As long as θ_1 is statistically significant, we can confirm that being in a double ballot regime affects for electoral convenience expenditure decisions of the municipality. The coefficient θ_1 measures the impact on the level of current expenditure decided by the mayor when he/she is elected with the *large* electoral mechanism. Finally we estimate:

$$SUR_{mt} = \lambda_s + \mu_t + \eta_1 \mathbf{LARGE}_{mt} + \eta_2 \mathbf{Z}_{mt} + \epsilon_{mt}, \quad (3)$$

where $SUR_{mt} = TAX_{mt} - EXP_{mt}$ and λ_s are municipalities' fixed effects and year dummies are μ_t .

4.1 The empirical analysis

The financial variables we are interested in could be very likely related with actual population because of scale economies for expenditure or agglomeration economies for revenues; actual population is, by year, very correlated with legal population, implying that treatment could be determined solely by the level of population: POP must be controlled for assessing the effect of $LARGE$ on the dependent variable. However, in our case there is no overlap in POP values across the *small* and *large* electoral group, in fact the threshold for being in one or the other electoral regime is given by $POP = 15,000$. We then need to use a regression discontinuity design (RDD): in this case in fact the direct effect of POP on the dependent variable is negligible relative to the effect of POP on $LARGE$ when POP is near the threshold $\tau = 15,000$. Let us re-write (1) in the following form:

$$TAX = \alpha + \beta + \gamma_1 \mathbf{LARGE} + g(\mathbf{POP}) + \gamma_2 \mathbf{Q} + \epsilon \quad \mathbf{LARGE} = 0, 1$$

where we assume that:

$$\lim_{POP \rightarrow \tau} E(\epsilon^0 | \mathbf{Z}) = \lim_{POP \rightarrow \tau} E(\epsilon^1 | \mathbf{Z}) \quad (4)$$

$$g(\cdot) \text{ unknown function at } POP = \tau \quad (5)$$

where α is municipality fixed effect, β is year fixed effect, \mathbf{Q} is the vector of all exogenous control excluding population, ϵ^0 is the random error component for municipalities belonging to the small group, ϵ^1 is the random error component for municipalities belonging to the large group and $g(POP)$ is an unknown function linking the dependent variable to POP . Assumptions (4) and (5) are for borderline randomization: those subjects near the threshold are likely to be similar in all aspects except in the treatment: (4) is for the similarities in the unobservables and (5) for the similarities in the observables.

Notice that:

$$\lim_{POP \downarrow \tau} E(\mathbf{LARGE} | POP) = 1 \text{ and } \lim_{POP \uparrow \tau} E(\mathbf{LARGE} | POP) = 0 \quad (6)$$

and:

$$\lim_{POP \downarrow \tau} E(TAX | POP) = \alpha + \beta + \gamma_1 + \lim_{POP \downarrow \tau} g(POP) + \lim_{POP \downarrow \tau} E(\epsilon_{mt}^1 | POP)$$

$$\lim_{POP \uparrow \tau} E(TAX | POP) = \alpha + \beta + \lim_{POP \uparrow \tau} g(POP) + \lim_{POP \uparrow \tau} E(\epsilon^0 | POP)$$

$$\implies \lim_{POP \downarrow \tau} E(TAX | POP) - \lim_{POP \uparrow \tau} E(TAX | POP) = \gamma_1$$

γ_1 is identified with the difference between the right and left limits of $E(TAX | POP)$ at $POP = 15,000$. Of course the same would go through for (2) and (3).

The econometric strategy adopted here performs a difference-in-difference estimate of (1), (2) and (3) following a regression discontinuity (DID-RD) approach (Egger and Koethenburgen, 2010). 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 heterogenous 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.⁵

We estimate the limit of the two regression functions on both side of the threshold by using two methods: a polynomial approximation and local linear regression (see Imbens and Lemieux, 2008). We normalize POP at 0 when it equals 15,000, because we control not only for a polynomial functional form of the population, but the same function is also interacted with the dummy $LARGE$: the normalization let us consistently estimate the local treatment average effect γ_1 , otherwise it would be biased by the interaction with POP . Following Bordignon et al. (2010) in the first method we use the whole sample of municipalities between 10,000 and 20,000 inhabitants⁶ and choose a polynomial functional form to fit the relationship between the dependent variable and POP : we provide estimates by using a second, third and fourth degree polynomial function. The second method fits linear regression functions to the observations distributed within a distance h on either side of the threshold; also in this case we control for population and its interaction with the dummy $LARGE$. We provide estimates by choosing different bandwidths around the threshold: namely, as in Bordignon et al (2010) we choose $h=1000$, $2h$ and $h/2$.

⁵Another 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 (Pettersson-Lidbom, 2008), 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.

⁶In this population interval there is no other institutional break apart from that at 15,000 inhabitants for the electoral rule. For a detailed list Italian institutional break at various population levels see Gagliarducci and Nannicini (2011).

5 Results

We have run three sets of regressions for taxes, current expenditure and current surplus. We have first run an estimate by using the all panel (Table 1). Belonging to the large municipalities sample implies a decrease in public spending of 48 euros and decrease in taxes + charges of 82 euros and a consequently decrease in current surplus of 33 euros; all these figures are 1% significant. Since the two electoral regimes for large and small municipalities are only determined by the population level, if we want to consistently estimate the effect of a change in the electoral regime, for the reasons discussed before, we use a Regression Discontinuity Design (RDD).

In panel A of Table 2 we report the baseline results, while in panel B we also add control variables before discussed. As long as the RDD identifying assumptions (Imbens and Lemieux, 2008) are met, the inclusion of additional covariates should not affect the estimates, but just increase accuracy. Hence, if the estimates of panel A and B are similar, this means that observable characteristics affecting the outcome are balanced around the threshold. Notice that at column (6) of panel A the electoral regime is no more significant in determining current public spending, either in the polynomial functional form specifications, or in the local linear specifications. The same it happens for charges and profits. However, the tax coefficient remains basically the same (-48.9) of that of Table 1, confirming a sort of prisoner dilemma effect on taxes for municipalities where the mayor is elected with a plurality run-off system and can be supported by a coalition of lists. More than half of this effect is due the urban and waste disposal tax, for which the electoral rule effect is also significant at 1% in all the three polynomial specifications. Of course, being taxes + charges not significant, the aggregate estimate for taxes + charges displays with respect to Table 1 a lower effect due to the electoral system, even always 1% significant for all the three specifications. Notice that even if the dummy *LARGE* has no effect on current spending, when we estimate its effect on surplus it decreases with respect to that on taxes+charges almost of the amount of the effect on expenditure, confirming in any case that the decrease in taxes is much higher than that in expenditure. All the result on surplus are 5% significant, only that relative to the fourth degree polynomial function is 10% significant. All the results are confirmed when we use the specifications without covariates, except those for surplus which come out not significant for the second and fourth degree specification and significant at 10% for the third degree specification.

If we look at the estimates by using the local linear specifications, the previous results (panel B of table 2) are confirmed for taxes+charges, current expenditure and surplus by using the h and $2h$ bandwidths, differently from $h/2$ bandwidths where probably too a few observations make

the estimates not very efficient. This result is also confirmed in panel B where no covariates are used. Coefficient of the dummy *LARGE* for urban and waste disposal are 1% significant almost the double with respect to the same estimates without covariates.

This results are also visible in Fig. 1 panel B, C and D where respectively we relate Taxes, Taxes + Charges and Urban and Waste disposal tax (we take the average for each period after an election in the sample with population running from 10,000 to 20,000) to a quadratic polinomyal function of population normalized at 15,000; evidence of the jump for the surplus is a bit less clear-cut at graphical level, since the confindence intervals below and above 15,000 seem to overlap. Interestingly, we repeat the same graphical analysis (Fig 2) , by fitting the previous financial variables with a quadratic polynomial of the legal population of the municipalities switching from one regime to the other and the graphs are very similar to those obtained with the actual population, confirming the close correlation between legal population and actual population and so the necessity to use a regression discontinuity design.

Finally we made a robustness check of our results by running a placebo test (Table 3) for both the polynomial and the local linear regressions. We use the sample between 10,000 and 20,000 and define in the sub-sample of the small municipalities a threshold corresponding to the median population (12,154) and we do the same for the large sample municipalities finding a median population of 17,130. We run the same regressions that we have done with the 15,000 threshold, but the coefficient accounting for the threshold effect is never significant, either with the specifications with covariates, or without covariates.

6 Conclusions

We tested on italian municipalities the impact on fiscal policies of adopting two different electoral systems: one for municipalities with less than 15,000 inhabitants where the mayor is elected according to a plurality single-ballot regime with a unique list supporting her/him and the other for municipalities with more than 15,000 inhabitants where the mayor is elected according to a plurality double-ballot regime with a coalition of list supporting her/him. 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.

Our test looks at the effect of the two electoral systems on expenditure and revenue side. We find that in the large-municipality electoral regime implies lower percapita taxes to finance the same per-capita expenditure. Our results hold with both a polynomial aproximation and a local linear regression method.

7 References

Alesina, A. and Drazen, A. (1991), "Why are stabilizations delayed? A political economy model", *American Economic Review*, 81, 1170-1188.

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

Barbera A., (1993), Introduzione: una legge di transizione in un periodo di transizione, in Barbera A. , *Elezione diretta del sindaco, del presidente della provincia, del consiglio comunale e del consiglio provinciale. Commento alla legge 25 marzo 1993, n.81*, Rimini, Maggioli.

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., Nannicini, T., G. Tabellini (2010), "Moderating Political Extremism: Single Round vs Runoff elections under Plurality Rule", mimeo, Bocconi University, Milan.

Bouton, L. (2010), "A Theory of Strategic Voting in Election Run-off", mimeo, Boston University,

Cox, G. (1997), *Making votes count*, Cambridge University Press, Cambridge UK.

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*.

Fujiwara, T., (2010), "A Regression Discontinuity Test of Strategic Voting and Duverger's Law," mimeo, Department of Economics, UBC.

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

Gagliarducci, S. and T. Nannicini (2011) "Do better paid politicians perform better? Disentangling incentives from selection", *Journal of the European Economic Association*, forthcoming.

Hallerberg, M. and von Hagen, J. (1999), "Electoral institutions, cabinet negotiations, and budget deficits in the European Union" In Poterba, J. and Von Hagen, J. (Eds.), *Fiscal institutions and fiscal performance*, 209-232. Chicago IL: University of Chicago Press.

Lijphart, A. (1984). *Democracies: Patterns of majoritarian and consensus government in twenty-one countries*, New Haven: Yale University Press.

List, J. A. and D. Sturm (2006), "How Elections Matter: Theory and Evidence from Envi-

ronmental 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.

Martinelli, C. (2002), "Simple Plurality versus Plurality Runoff with Privately Informed Voters" *Social Choice and Welfare*, 19.4, 901-919.

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

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.

Perotti, R. and Kontopoulos, Y. (2002), *Fragmented fiscal policy*, *Journal of Public Economics*, 86, 191-222.

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.

Ricciuti, R. (2004), "Political Fragmentation and Fiscal Outcomes", *Public Choice*, 118, 365-388.

Roubini, N. and Sachs, J. (1989), "Political and economic determinants of budget deficits in the industrial economies", *European Economic Review*, 33, 903-938.

Scarciglia R. (1993), Elezione diretta del sindaco e del presidente della provincia. Nomina della giunta, in Barbera A. , *Elezione diretta del sindaco, del presidente della provincia, del consiglio comunale e del consiglio provinciale. Commento alla legge 25 marzo 1993, n.81*, Rimini, Maggioli.

8 Data Appendix

List of variables

Financial variables: from the Italian Ministry of Interior

(http://finanzalocale.interno.it/sitophp/home_finloc.php?Titolo=Certificati+Consuntivi)

- *Taxes*: real total direct taxes by municipality (year 2006 constant euros per capita).
- *Charges*: real charges and profits by municipality (year 2006 constant euros per capita).

- *Urban waste disposal tax*: real tax for waste disposal by municipality (year 2006 constant euros per capita).
- *Current Expenditure*: real total current 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>)
- *Large*: dummy variable equal to one when the mayor of the municipality is elected according to to a double-ballot/multiple list electoral system, and when the electoral system is single ballot/ single list.
- *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.
- *Voteshare*: percentage of votes obtained by the mayor when elected (the variable refers to the first round for the double-ballot municipalities)

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

- *Income*: real personal income tax base (year 2006 constant euros per capita).
- *Population*: state population divided by 1000.
- *Aged*: share of population over 65 years old.
- *Child*: share of population between 0 and 14 years old.

Table 1: Fixed effects estimates with year (2001-2006) and covariates controls. Independent variables: Dual Ballot dummy.

VARIABLES	(1) Current surplus	(2) Taxes + Charges	(3) Taxes	(4) Urban Waste Disposal	(5) Charges and profits	(6) Current expenditure net of received transfers
Pol. 4	-33.5262** (15.057)	-81.5924*** (15.939)	-46.7595*** (12.530)	-23.5528*** (7.349)	-34.8340*** (9.656)	-48.0763*** (16.399)
R-squared	0.4558	0.9064	0.9086	0.6819	0.8420	0.8547
Pol. 3	-32.5389** (15.005)	-85.6505*** (15.905)	-46.7829*** (12.358)	-24.3663*** (7.322)	-38.8689*** (9.698)	-53.1215*** (16.419)
R-squared	0.4558	0.9064	0.9086	0.6819	0.8419	0.8547
Pol. 2	-30.3756** (14.942)	-91.1187*** (15.888)	-49.0185*** (12.197)	-27.7247*** (7.344)	-42.1017*** (9.731)	-60.7528*** (16.512)
R-squared	0.4557	0.9063	0.9086	0.6814	0.8419	0.8546
Observations	38,511	38,512	38,517	38,517	38,512	38,514

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

A. Estimations with covariates - Table 2

VARIABLES	(1) Current surplus	(2) Taxes+Charges	(3) Taxes	(4) Urban Waste Disposal	(5) Charges and profits	(6) Current expenditure net of received transfers
Pol. 2 nd	-50.7117** (25.423)	-61.7174*** (22.228)	-48.8992*** (17.330)	-26.6335*** (8.967)	-12.8182 (15.403)	-11.0057 (25.884)
Pol. 3 nd	-52.0351** (24.761)	-64.7956*** (22.837)	-48.7996*** (17.250)	-26.2985*** (8.749)	-15.9959 (15.510)	-12.7605 (24.926)
Pol. 4 nd	-53.7419* (30.160)	-70.9977*** (24.437)	-47.0816** (18.835)	-30.3703*** (9.609)	-23.9160 (17.465)	-17.2558 (30.831)
Observations	2,579	2,579	2,579	2,579	2,579	2,579
LLR (h)	-62.1552** (27.345)	-74.8752** (29.704)	-37.4715 (24.037)	-33.8685*** (12.731)	-37.4037* (21.333)	-12.7200 (29.234)
Observations	493	493	493	493	493	493
LLR (h/2)	-96.7916** (46.943)	-17.7441 (41.407)	-23.6429 (35.525)	-18.1836 (14.363)	5.8988 (20.743)	79.0475 (49.206)
Observations	243	243	243	243	243	243
LLR (2h)	-63.5675** (27.345)	-71.7752*** (25.305)	-45.4489** (19.871)	-33.4006*** (10.373)	-26.3263 (17.868)	-8.2077 (28.234)
Observations	981	981	981	981	981	981

B. Estimations without covariates - Table 2

Pol. 2 nd	-42.3671 (25.880)	-54.6013*** (20.751)	-41.0893** (16.391)	-19.3778** (9.097)	-13.5120 (13.539)	-12.2341 (26.001)
Pol. 3 nd	-44.4530* (25.072)	-64.4940*** (22.788)	-49.1054*** (17.285)	-26.4841*** (8.786)	-15.3886 (15.413)	-11.9116 (24.787)
Pol. 2 nd	-47.7953 (30.723)	-61.4079*** (22.897)	-40.7751** (17.978)	-22.2625** (9.883)	-20.6327 (15.620)	-24.2480 (27.368)
Observations	2,579	2,579	2,579	2,579	2,579	2,579
LLR (h)	-64.9612** (29.590)	-66.4215*** (24.842)	-35.0414* (19.495)	-16.2632 (11.051)	-31.3800** (15.933)	-1.4603 (27.767)
Observations	493	493	493	493	493	493
LLR (h/2)	-128.7826*** (37.564)	-64.9081** (31.064)	-44.5207 (27.907)	-17.3277 (10.853)	-20.3874* (11.691)	63.8745* (35.543)
Observations	243	243	243	243	243	243
LLR (2h)	-52.0010** (26.252)	-59.2497*** (22.408)	-34.8345** (17.438)	-19.8496** (9.957)	-24.4151 (14.987)	-7.2487 (26.604)
Observations	981	981	981	981	981	981

*Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1*

A. Mean below (12,154) – Table 3

VARIABLES	(1) Current surplus	(2) Taxes+Charges	(3) Taxes	(4) Urban Waste Disposal	(5) Charges and profits	(6) Current expenditure net of received transfers
Pol. 2 nd	-6.6818 (17.128)	-19.5621 (21.836)	-10.8286 (11.619)	-6.5137 (5.057)	-8.7335 (19.236)	-12.8803 (24.016)
Pol. 3 nd	23.4883 (21.361)	8.1291 (27.677)	-5.4747 (15.242)	-4.9300 (6.529)	13.6038 (23.226)	-15.3592 (28.743)
Pol. 4 nd	23.2216 (26.170)	35.1690 (34.319)	-2.7073 (17.649)	0.2269 (7.789)	37.8763 (28.840)	11.9474 (35.150)
Observations	1757	1757	1757	1757	1757	1757
LLR (h)	7.6969 (18.029)	-16.4453 (22.638)	-6.8975 (12.302)	-7.5934 (5.430)	-9.5478 (19.102)	-24.1422 (24.014)
Observations	688	688	688	688	688	688
LLR (h/2)	9.7982 (23.575)	-10.1934 (21.535)	-10.4426 (15.928)	-3.1895 (7.435)	0.2493 (19.114)	-19.9916 (26.393)
Observations	344	344	344	344	344	344
LLR (2h)	-8.6761 (15.224)	-32.1103 (20.201)	-7.8450 (10.086)	-7.7819* (4.381)	-24.2654 (18.400)	-23.4343 (22.822)
Observations	1463	1463	1463	1463	1463	1463

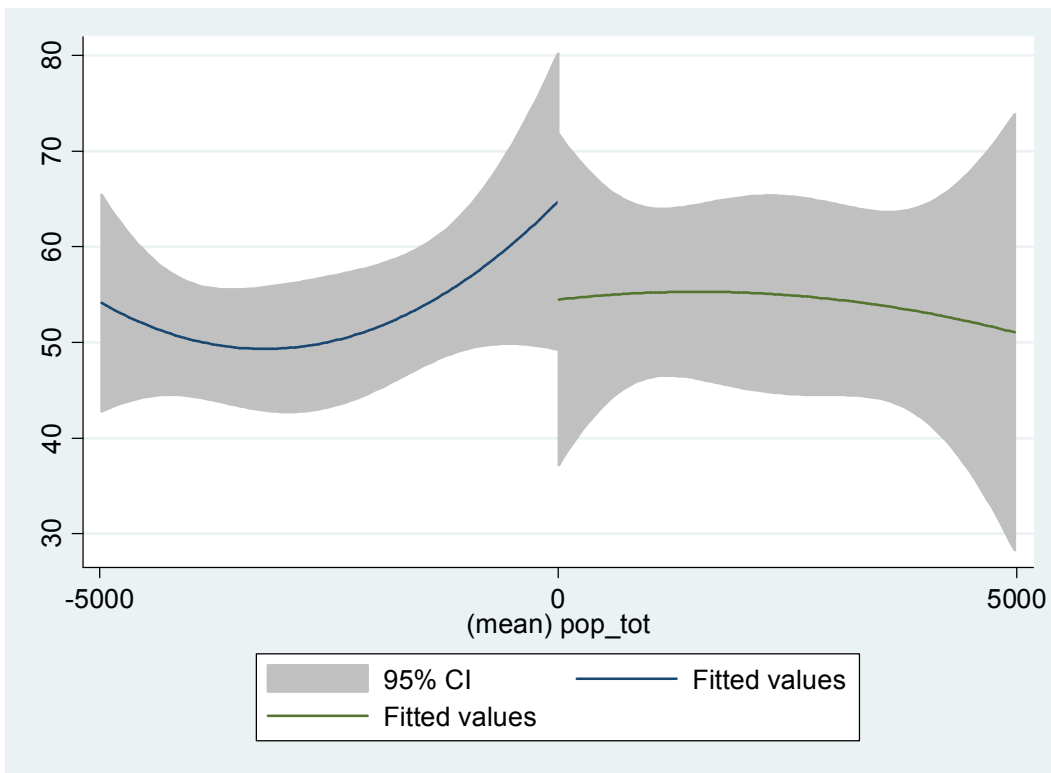
B. Mean above (17,130) – Table 3

Pol. 2 nd	-10.9117 (27.548)	15.0231 (27.167)	13.5763 (18.915)	-9.3867 (10.436)	1.4468 (21.987)	25.9348 (31.355)
Pol. 3 nd	-14.3829 (39.233)	14.4763 (29.802)	15.6626 (20.645)	-10.1753 (11.335)	-1.1862 (23.207)	43.0807 (42.601)
Pol. 4 nd	-86.1907 (58.164)	2.0147 (41.196)	-17.3939 (26.517)	-29.5572** (14.868)	19.4085 (31.516)	88.2054 (59.019)
Observations	822	822	822	822	822	822
LLR (h)	-4.2894 (28.242)	12.4070 (29.283)	11.7727 (19.220)	-11.5264 (9.710)	0.6343 (24.574)	16.6964 (31.464)
Observations	347	347	347	347	347	347
LLR (h/2)	-16.1906 (46.838)	-58.5432 (45.687)	-28.2890 (29.317)	-40.2420** (16.565)	-30.2542 (32.153)	-42.3526 (43.319)
Observations	171	171	171	171	171	171
LLR (2h)	-20.9089 (24.063)	9.3072 (22.746)	18.4356 (16.327)	-1.4148 (8.120)	-9.1284 (17.368)	30.2161 (27.197)
Observations	692	692	692	692	692	692

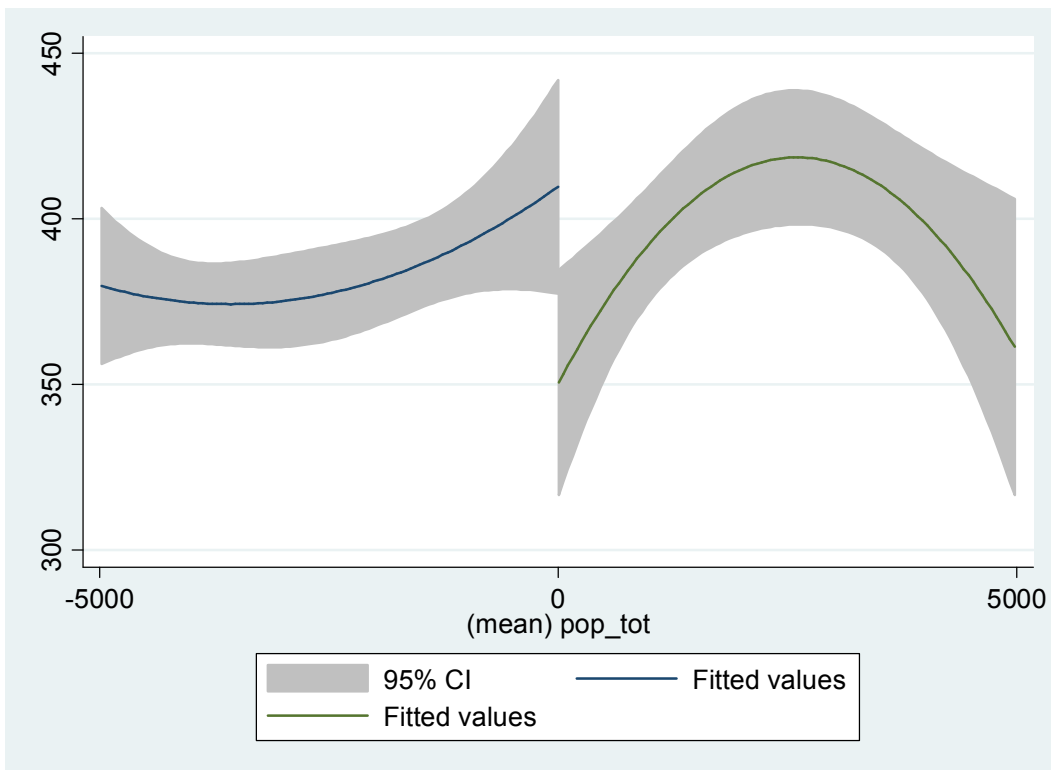
Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Figure 1

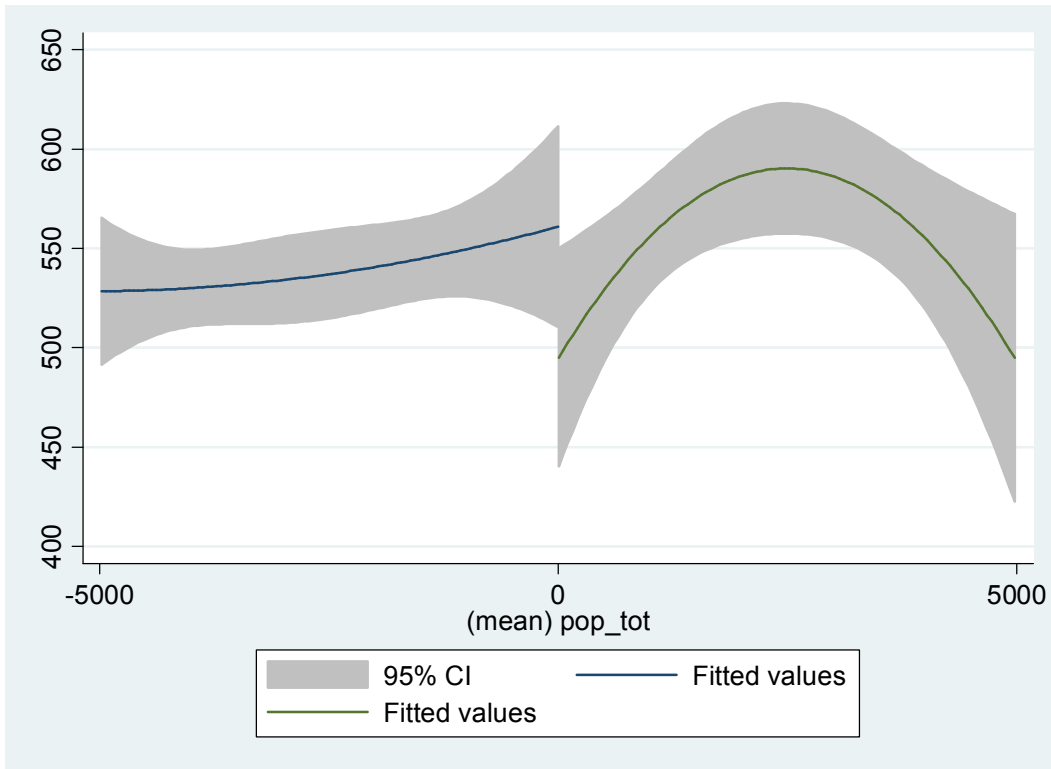
A) Surplus



B) Taxes



C) Taxes+Charges



D) Urban and Waste Disposal Tax

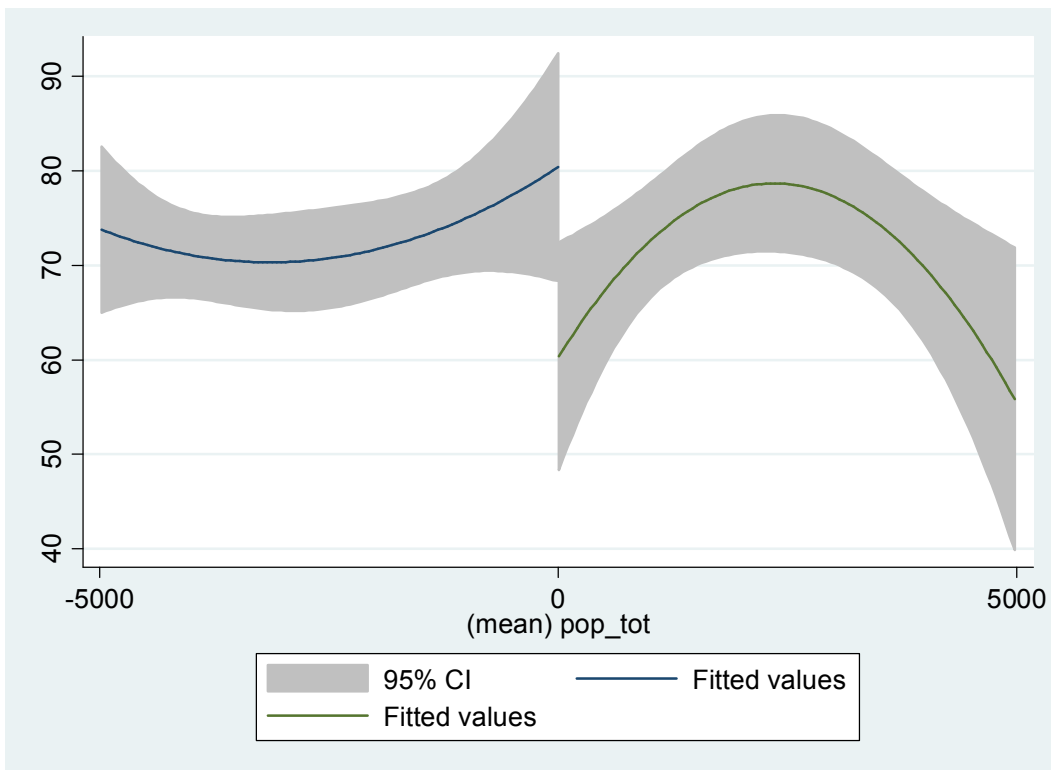
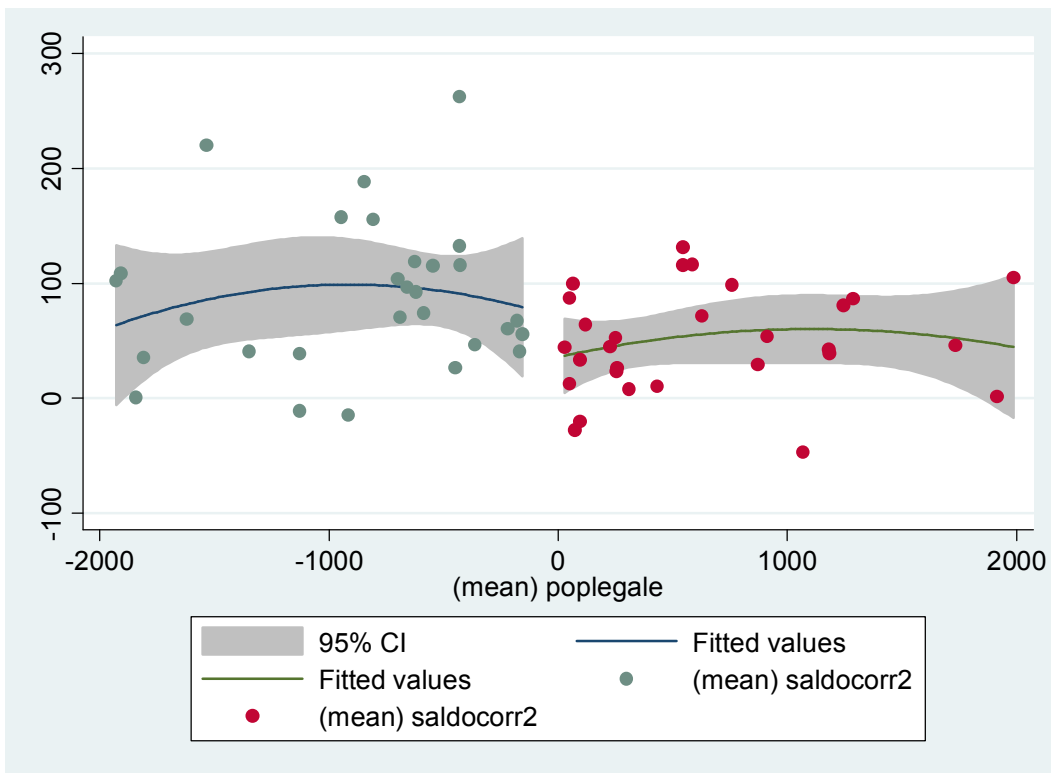
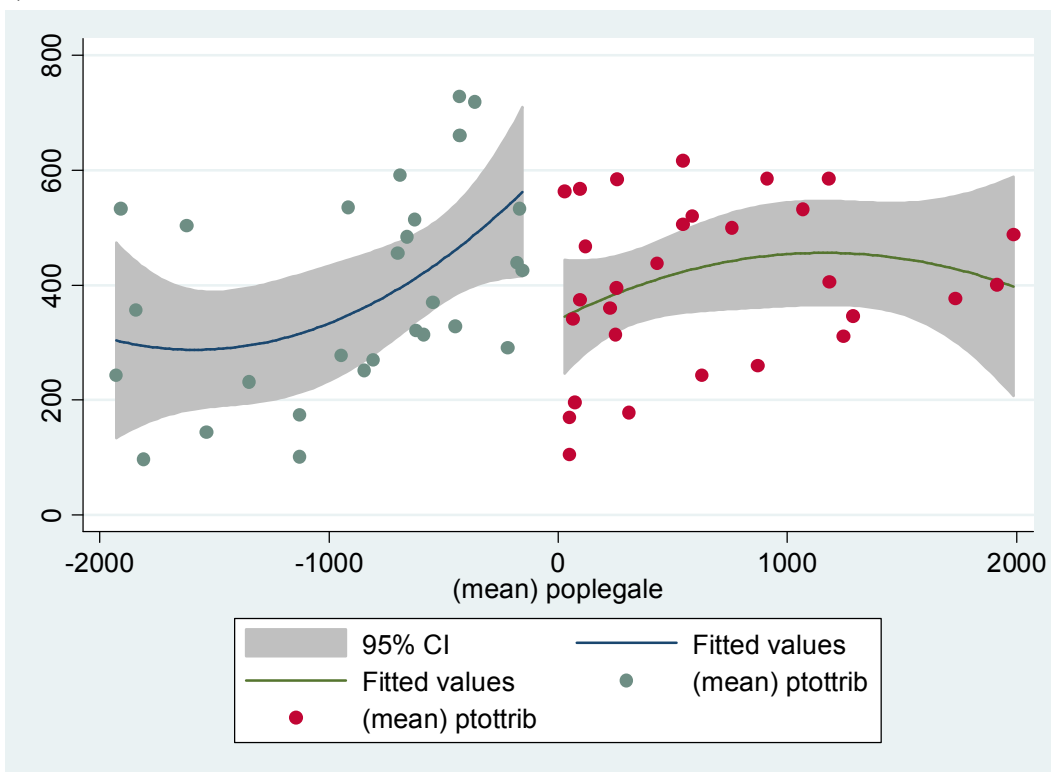


Figure 2

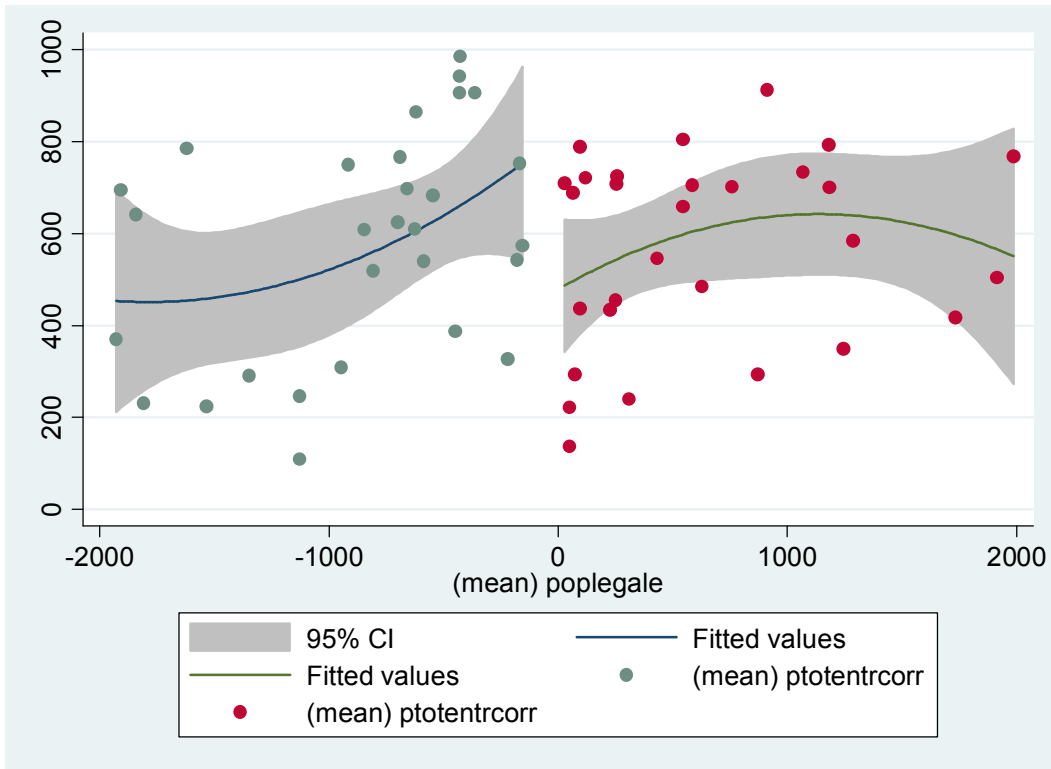
A) Surplus



B) Taxes



C) Taxes+Charges



D) Urban and Waste Disposal Tax

