

Parties, institutions and political budget cycles at municipal level: evidence from Italy

Marika Cioffi, Giovanna Messina, Pietro Tommasino*

This version: January 2012

Abstract

We build a dataset covering all the Italian municipalities in order to study the existence, the magnitude, the determinants and the electoral consequences of pre-electoral fiscal manipulation by incumbent politicians. We document several facts. First, there is a clear political cycle in the path of expenditures, mainly driven by capital expenditures. Second, only mayors not affiliated to a national political party induce an election-driven expenditure cycle. Third, pre-electoral expenditure boosts increase reelection prospects of the incumbent only if she is not affiliated to a party. These results are consistent with the hypothesis that national parties have both the incentives and the resources to curb the pre-electoral profligacy of party-affiliated mayors. We also consider the impact of formal institutions. In particular, we find that budget rules reduce the effects of the political cycle, whereas binding term limits seem to be ineffective.

Keywords: Political Budget Cycles, Local Public Finance, Political Parties, Italy.

JEL Classification Numbers: H72, D72.

*Bank of Italy, Research Department; e-mail: marika.cioffi@bancaditalia.it, giovanna.messina@bancaditalia.it, pietro.tommasino@bancaditalia.it. The authors are grateful to seminar participants at the Bank of Italy, the 2011 Meeting of the Public Choice Society and at the 2011 Meeting of the European Economic Association for helpful comments.

1 Introduction

We build a panel dataset covering all the 8,100 Italian municipalities to assess the existence, the magnitude and the determinants of pre-electoral fiscal manipulation by incumbent politicians. We document several facts. First, on average there is a significant political cycle in the path of expenditures, mainly driven by capital expenditures. Second, only mayors who are not affiliated to a political party increase spending as elections get near, whereas no cycle is detected in the behaviour of mayors affiliated to a national political party. Third, pre-electoral expenditure boosts increase reelection prospects of the incumbent only if she is not affiliated to a national party.

Taken together, these results suggest that party discipline keeps the incumbent accountable even when the incentives to well-behave provided by re-election are absent.

This function of political parties is quite established in the political science literature. For example, Budge and Kemer (1989) stress that: “if some degree of responsibility and accountability has to be enforced, candidates need to be organized in competing teams, i.e. parties. Office-holders who are little known by individual citizens can be at least associated with a definite group, which is tied both to a specific record in government and to certain pronouncements about future performance”.¹

Concerning more specifically the relationship between the national party and local officials, it has been stressed that a party-affiliated mayor is likely to act not only with the objective of winning re-election, as he also needs to take into account the requests of his national party’s central office. Indeed, the party can resort to several levers in order to discipline its mayor, among which are the promise of cooptation in the national party leadership, support and financial help during the re-election campaign. The national party in turn is (relatively) less interested in winning one particular local race in a given year, and more interested in building a long-run reputation as a reliable and fiscally responsible political actor. (van Houten, 2009).

Besides the impact of party membership, some of our results also concern the role of formal institutions. In particular, we find that lame-duck mayors tend to spend more on average, but only those among them which are not affiliated to a national political party give an extra boost to spending in pre-electoral times. Moreover, budget rules designed to induce mayors to behave in a fiscally responsible way significantly reduce the size of the political budget cycle (this is true both for stand

¹Along the same lines, in the economics literature, see the contribution by Harrington (1992).

alone mayors and for party mayors). This is all the more remarkable as the design of the Italian fiscal framework is generally considered as less than perfect.

The present paper contributes to several different strands of the literature. First of all, it adds to the existing evidence on the presence of a political budget cycle (henceforth PBC) at the sub-national level. Research on PBC was rejuvenated by two important contributions by Brender and Drazen (2005) and Shi and Svensson (2006).² These studies have been influent in several dimensions: they shifted the emphasis from the manipulation of aggregate outcomes to that of fiscal instruments³; they stressed the fact that the strength of the PBC may vary according to context-specific conditions⁴; from a methodological point of view, they pioneered the use of dynamic panel specifications and GMM estimation methods such as those developed by Arellano and Bond (1991), Anderson and Hsiao (1982), Arellano and Bover (1995), Blundell and Bond (1995).

However, both Brender and Drazen (2005) and Shi and Svensson (2006) use country level data, which obviously creates problems due to the difficulty to account convincingly for all the possible differences between nations, mostly unobserved, possibly related to the PBC. In the last few years, a growing literature is developing, trying to overcome the problems inherent to the cross-country nature of both the aforementioned studies as well as the data limitations of early within-country studies (which mostly looked at states within federations, with problems of degrees of freedom similar to those of cross-country studies).⁵ This literature is still

²See also Persson and Tabellini (2003).

³The empirical study of opportunistic political business cycles started in the mid seventies and in the subsequent 25 years the amount of research increased tremendously, also encouraged by the theoretical developments of Rogoff (1990) and Rogoff and Siebert (1988). These authors provided models in which economic agents and voters have rational expectation and yet electorally-motivated manipulation of the economy might arise in equilibrium (therefore vindicating the message of earlier seminal models based on adaptive expectations, such as Nordhaus). However, it seems fair to say that by the end of that decade a series of limits on the empirical front started to become apparent (see for example Alesina, Roubini and Cohen, 1997 and Drazen, 2001), and the evidence of electoral cycles in aggregate activity and inflation before elections appeared to be weak and inconclusive.

⁴In particular, they argued that the length of the democratic experience (Brender and Drazen, 2005) and the quality of the media system (Shi and Svensson, 2006) were negatively associated with the size of the PBC. On context-specific PBC see also Franzese (2002).

⁵These works have mainly concerned the USA (see the survey by Besley and Case, 2003). Exceptions are the papers by Khemani (2004) which studies the 14 Indian States, Kneebone and McKenzie (2001), which studies the 8 Canadian Provinces, and those by Seitz (2000) and Galli and Rossi (2002) on German Lander. Another limitation of Brender and Drazen (2005) and Shi and Svensson (2006), is they just study the overall budget balance, instead of individual budgetary items. The second approach, pursued in the present paper, is consistent with the theoretical idea (Rogoff, 1990; Rogoff and Siebert, 1988; Shi and Svensson, 2006; Drazen and Erslava, 2010) that PBC are to be expected on those items which are easier to manipulate and,

relatively small. To our knowledge, apart from the present paper, there are only two other works that do this. Drazen and Erslava (2010) use data from Columbia, and Veiga and Veiga (2007a) have data on Portuguese municipalities. Therefore, our results document the existence of municipal-level PBC in a democracy that is the largest, the oldest and the richest among those studied up to now.⁶

The present paper also relates to an emerging small literature on the effects of national political parties on the behaviour of local politicians. In particular, Akhmedov and Zhuravskaya (2004) show that the quality of government and the efficiency in the provision of public goods at the decentralized level positively depend on the strength of national political parties. They argue, following Riker (1964), that parties are able to do so because they affect the career of local politicians through promotion, and through political support during local electoral campaigns. Ferreira and Gyourko (2009) and Pettersson-Lidbom (2008) study whether Democratic mayors differ from Republican mayors concerning the composition and average level of spending, but neither of them touches upon the issue of PBC, nor discusses the behavior of independent mayors as opposed to party-affiliated mayors.

Our work also relates to the literature concerning the impact of binding term limits on the behaviour of elected politicians. Our result that mayors who are serving their second term in office (which are non re-eligible according to the Italian law) tend to spend more on average, is consistent with previous USA-based evidence (Besley and Case, 1995, 2003) and with standard moral hazard models of political agency (Shi and Svensson, 2006).

Finally, our paper sheds new light on the long-standing issue of the role of budgetary rules in disciplining politicians. As it is well-known (Poterba, 1997), while there is a certain consensus that fiscal rules might be effective, a mayor problem in the literature has been to come up with plausibly exogenous variation in the rules. In the Italian case, municipalities are assigned to different legal regimes only based on their size, which we can control for, making the “unconfoundedness” assumption quite plausible. This interesting feature of the Italian case is also exploited by Grembi, Nannicini and Troiano (2011), which use regression discontinuity techniques to show that the Domestic stability pact (DSP) on average reduces expenditures and improves budgetary discipline. Bartolini and Santolini (1991) find that the DSP reduces spending levels on average but it is associated with higher expenditure increases in pre-electoral years. However, their results are based on a non-representative sample of 246 Italian municipalities located in the Marche region.

at the same time, more visible to the voters.

⁶In a similar vein, Akhmedov and Zhuravskaya (2004) manage to substantially increase the data available for the analysis along the time series dimension, building a monthly panel dataset for the about 80 Russian provinces over the period 1998-2003.

The rest of the paper is structured as follows: section 2 spells out the fiscal policy framework and the electoral rules which characterize Italian municipalities; section 3 and 4 describe our dataset and our empirical strategy; section 5 to 7 show our results, together with several sensitivity exercises; section 7 offers some concluding thoughts.

2 Fiscal policy framework and electoral rules in Italian municipalities

2.1 Fiscal policy framework

In the Italian institutional framework the sub-national sector comprises three levels of government: Regions, Provinces and municipalities. Regions are involved primarily in the provision of health services, Provinces perform some functions in the areas of road maintenance and natural environment, while municipalities are responsible for public illumination, waste disposal, urban road maintenance, local transports, social aid, childcare and primary schooling. The share of general government primary expenditures accounted for by municipalities is about 10 per cent (4 per cent of Italian GDP); this share goes up to 30 per cent if we consider only capital expenditures, and slightly less than 50 per cent if we focus on investment.⁷

municipalities are financed with a mix of transfers and own revenues: according to balance sheet data, municipal taxes account for a share of roughly 35 per cent of total current revenue, another 25 per cent stems from other own revenues, such as the collection of tariffs, fees and penalties, while the remaining 40 per cent comes from transfers, which are largely unconditional. The criteria for grant allocation reflect mostly structural parameters (i.e. demographic, socio-economic and fiscal indicators).⁸

The budget behaviour of sub-national governments is subject to the rules stated by the so-called Domestic Stability Pact (DSP). The Pact was introduced in 1999 with a view to involving subnational authorities in the attainment of the fiscal

⁷For a more detailed description of local public finance in Italy see Franco, Messina and Zotteri (2004).

⁸See Decree law n.504/1992. The current system of municipal finance is basically in place since 1992. Relatively minor changes occurred in 1997 (Decree law n.544/1997 introduced new parameters concerning the broadness of the services provided, the presence of military bases and indicators of socio-economic decay and of fiscal effort) and in 2001 (law 448/2001 decided that the annual amount of transfers to be allocated among municipalities had to be set as a proportion of the receipts from national personal income tax).

objectives set at the European level; it requires regional and local governments to achieve some targets, in terms of expenditures and/or budget balance, but rules are revised from year to year. When the DSP was first introduced in 1999, targets were based on an extended version of the so-called “golden rule”. Hence the budget balance it referred to was defined as the difference between total revenues, net of state transfers, and total expenditure, net of investment and interest payments. In the following years, additional items have been excluded and starting from 2002 budgetary rules set for Regions have been referred to expenditure rather than to a budget balance. Importantly for our analysis, starting from 2001 smaller municipalities (those with less than 5,000 residents) were exempted from the DSP. The Pact is enforced through a system of sanctions and incentives for compliance, such as constraints on indebtedness, intermediate consumption and personnel hiring. But no evidence is available on the effective implementation of such sanctions, and this is likely to have undermined the credibility of the DSP, together with the fact that rules have changed frequently over time.

2.2 Electoral rules

The Italian local level of government is regulated by the legislative decree of 18th August 2000 n. 167. The decision-making bodies at municipal level in Italy are the mayor (*Sindaco*), the Executive committee (*Giunta comunale*), which is appointed and headed by the mayor himself, and the municipal council (*Consiglio comunale*), endowed with legislative powers.⁹

The direct election of the mayors was introduced in 1993 by the “Law on the direct elections of mayors”¹⁰, with an aim of strengthening their powers and increasing their accountability. Mayors are elected with a plurality system slightly differentiated according to a threshold based on population size (15.000 inhabitants)¹¹ and awarding a majority premium to the party/group of party endorsing the winning candidate.¹² Also the dimension of municipal bodies varies according to population size, ranging from 12 to 60 councillors for Consigli and from 4 to 16 members for Giunta. Since 1993, elections were held every 4 years; the duration of

⁹The number of Italian municipalities (almost 8.100) is lower than that in France and Germany, but higher than all the other European countries.

¹⁰Law of 25th March 1993, n.81.

¹¹Below this threshold a simple plurality system applies, with each candidate being supported by a single list, while over the threshold, mayor candidates may be supported by different list, a 50% majority is required to be elected, and a run-off takes place if none of the candidates succeeds in getting an absolute majority of votes at the first round.

¹²Below the threshold, the list supporting the winning candidate receive two-thirds of the council seats, while above the threshold, the lists endorsing the elected mayor get 60% of the seats.

the mandate was then extended to 5 years¹³ unless particular circumstances, such as the death of the mayor, ex-post incompatibilities, or crime charges induce an earlier resignation of the mandate, so there is not the possibility to call for “snap elections”. Importantly for our purposes, since 1993 mayors have been subject to a term limit: they cannot seat for more than two consecutive mandates, unless (since April 1999) an early termination occurs (due to reasons different than voluntary resignation) before half term had expired.

3 The data

In order to test for the existence of a PBC in Italian municipalities we consider data covering all the about 8,100 Italian municipalities, for a 9 year period (from 1998 to 2006). Overall, our data set consists of about 64.000 observations. Table 1 reports summary statistics for the dependent and explanatory variables used in the model.

Our analysis is focused on municipal expenditure, as the opportunistic behaviour of incumbent politicians is more likely to emerge on this side of the budget. Indeed mayors do not have much control over local revenues: as remarked in section 2, transfers from central and regional governments play a paramount role from a financial point of view, and the scope for taxing powers is small: few local tax rates can be changed by municipalities, and in any case they are manipulable only to a very limited extent. Moreover, from 2002 to 2006 such powers were partly suspended. Therefore as our dependent variable we use alternatively per capita total expenditure and capital expenditure.¹⁴ As it is often argued in the literature, we expect that the effects of pre-electoral manipulation are likely to be stronger for the latter. Indeed, this kind of expenditure is not only highly visible, but can easily targeted towards particularly sensitive groups of voters; furthermore in most of the years covered in our sample, the most significant part of capital expenditure (i.e. investment) has been exempted from DSP rules. On the opposite, current disbursement is excluded because the its bulk is represented by salaries, which are regulated by rigid labor contracts.

Our main explanatory variable is the number of days to the following council election (as proxy for electoral cycle). Indeed, as first noticed by Williams (1990) and Grier (1989), this smoother counter variable is preferable to an election year

¹³Law of 30th April 1999, n. 120.

¹⁴Our data source is the Italian Home Office, which collects final budget sheets from all Italian municipalities (and provinces as well) on a yearly basis.

dummy, also because there may be misalignments between years in which budget choices are made and electoral deadlines. The electoral year dummy may in fact be a noisy indicator if elections are held early (late) during a year, since the electoral year dummy tends to capture mostly post-election (pre-election) effects. Since most of local elections covered by our dataset are held in the first half of the year, we designed the electoral year dummy as follows: it takes value equal to 1 in the year preceding a scheduled administrative local election, 0 otherwise.

In all our regressions we also include a set of socio-demographic controls, namely: the municipality's population size (in terms of residents), density (i.e. the ratio of inhabitants to municipal area expressed in hectares) and the dependency ratio of the population, defined as the fraction of population less than 10 years old and more than 65 years old.¹⁵ Population size and density could influence expenditures since the cost of providing public goods may be subject to economies of scale; also population age structure may be relevant for public spending, as children and elderly are more likely to increase expenditure for social services.

We also include some variables approximating the amount of public or private financial resources available to each municipality, namely the amount of current transfers from other levels of government and the average personal income per capita.¹⁶ Average personal income is taken from the database on income tax returns of the Revenue Agency. Finally, we include year dummies, in order to capture idiosyncratic shocks which hit across observations during the same period. Finally, we add as political control variable a dummy representing the possibility for the mayor to be re-elected in the following election (the dummy is equal to 1 if the mayor is at his second term and therefore not-re-eligible). We also experimented with a variable trying to capture the political orientation of local bodies (taking a value of 1 for centre-left governments); however, we do not include it in our baseline equations, as it is very difficult, given the high number of civic coalitions (*liste civiche*), to unambiguously attach a political colour to most of the majorities.¹⁷ Overall, we do not expect ideology or partisanship to play a significant role in PBC at the municipal level. First, most of the more partisan political issues are typically an object of regional and national politics. Second, within local expenditures our focus is on capital expenditure, which can hardly be seen as of any partisan salience; as it is often said: "there is not a Republican and a Democratic way of filling a pothole". Finally, public finance theory suggests that the possi-

¹⁵The data source for all our socio-demographic variables is the National Statistical Office.

¹⁶Data on transfers have been taken from the Home Office balance sheet mentioned above. We exclude capital transfers since they are mostly earmarked. We also correct current State transfers by adding the amount of personal income tax sharing, which is substantially a State transfer although it is recorded among tax revenues in municipal balance sheets.

¹⁷In any case, our results are not influenced by the introduction of this variable among regressors.

bility to move from one municipality to another should tend to decrease partisan differences in municipal policies. Indeed, there is evidence that such differences are not present (Ferreira and Gyourko, 2009) Instead of looking to the political ideology of a mayor, we build a dummy which is equal to one if the mayor belongs to a national political party and zero if it belongs to a *lista civica*.¹⁸

4 Empirical strategy

Our empirical dynamic model can be summarized as follows:

$$y_{it} = \sum_{p=1}^2 \alpha_p y_{it-p} + \mathbf{X}'_{it} \boldsymbol{\beta} + \delta E_{it} + \mu_i + \phi_t + \epsilon_{it} \quad (1)$$

where y_{it} is a fiscal variable (either total expenditure or capital expenditure), \mathbf{X}_{it} is a vector of socio-economic municipality covariates, μ_i and ϕ_t are respectively a municipality and a time fixed effect, and δ is our parameter of interest, which captures how fiscal instruments behave as the election day approaches. The fixed effects accounts for time-invariant characteristics of the municipality, either observable (for example, whether it belongs to a special statute region (RSS), which implies a different structure of the budget, and for geographic characteristics which may influence the price of public good provision) or unobservable.

Estimating the above equation with an OLS regression or with a fixed-effect specification would yield a potential estimation bias of order $1/T$ (so-called *Nickell bias*), with T being the length of the panel. The bias stems from the fact that the lagged dependent variable is, by construction, correlated with the composite error term through the unobserved heterogeneity μ_i . We then use a first differenced version of the above equation, thus removing the individual fixed effect. Nevertheless, since differentiation would induce an endogeneity bias because of the correlation between Δy_{it} and $\Delta \epsilon_{it}$, we estimate (1) by using a GMM approach as developed by Arellano and Bond (1991); the idea is to instrument the first differenced lag of the dependent variable with a set of “internal” instruments. The valid instrument are, under the assumption of lack of serial correlation in the error terms, current and past values of the vector of covariates $(x_{i1}, \dots, x_{i,t-1}, x_{i,t-1})$, as well as levels of the dependent variable, lagged two or more periods $(y_{i1}, \dots, y_{i,t-2})$. The GMM is a robust estimator, as it does not require information on the exact distribution of the error term and it is efficient in presence of autocorrelation and heteroskedasticity.

¹⁸All our political variables have been computed from the database on local and general elections of the Home Office.

The main pitfall is that GMM generates moment conditions prolifically, so that the possibility that the assumptions concerning the high number of over-identifying restrictions are not valid cannot be a priori ruled out. Therefore, we also show results using the more parsimonious (actually the most parsimonious possible, as the model is then just identified) set of instruments suggested by Anderson and Hsiao (1982).¹⁹

As a second exercise, to study whether the existence and magnitude of PBC depend on the mayor belonging or not to a national political party, we enrich our empirical set-up allowing different values of δ in different subsets of municipalities:

$$y_{it} = \sum_{p=1}^2 \alpha_p y_{it-p} + \mathbf{X}'_{it} \boldsymbol{\beta} + \sum_j \delta_j D_{ij} E_{it} + \mu_i + \phi_t + \epsilon_{it} \quad (2)$$

With $D_{ij} = \{0, 1\}$ is a dichotomous variable equal to one if and only if municipality i belongs to the subset j , with subsets being exhaustive and mutually exclusive (i.e. with $\sum_j D_{ij} = 1$). In particular, we first distinguish between municipalities in which the mayor is expression of a national political party from the other municipalities, then we further distinguish, within each of the two subsets, re-eligible mayors from lame-duck mayors (thus ending up with a four-fold classification).

5 Estimation results

Our main results are summarized in Tables 2, 3 and 4. Whatever the estimation method, and whatever the dependent variable (total spending or capital spending) the coefficient for the cycle²⁰ is always positive and highly significant, both for total and for capital spending (Table 2). In economic terms, during the year leading to elections expenditures increase by almost 40 euros per capita. Moreover, basically all the increase in total expenditure is attributed to the increase in capital expenditure. Table 2 also highlights other interesting findings: first, there is some evidence that mayors which are non re-eligible due to the two-term limit tend to spend on average (i.e. independently of the PBC) more than the other mayors; second, mayors affiliated to a national party spend much less, on average, than independent mayors. As a further step, therefore, we delve deeper into the

¹⁹In the estimation à la Anderson and Hsiao $\Delta y_{i,t-1}$ is instrumented using $y_{i,t-2}$ as the only instrument (we also considered the case in which $\Delta y_{i,t-2}$ is used as the only instrument, with no economically or statistically significant changes in the estimate of our parameters of interest).

²⁰As indicated by either the “days to next election” counter or by the pre-electoral dummy.

difference between independent and party-affiliated mayors. In Table 3a, we allow the PBC to depend on whether the mayor belongs to a national party or not. It clearly appears that the PBC is less pronounced for the former than for the latter. Indeed, the PBC for party-affiliated mayors is never significant (moreover, a Wald test clearly rejects equality of the two coefficients).

In Table 3b we look for the presence of a PBC, according to a double partition of the universe of mayors, between party affiliated and standalone mayors and between re-eligible and non re-eligible mayors. However, it appears clearly that binding term limits do not have any relevant effect, and that all the PBC is due to independent mayors, which behave in a very similar way irrespective of their re-eligibility status.

Finally, we explore the relationship between the DSP and the PBC. We estimate our conditional regression (1) only on the subsample of municipality-year observations which were subject to the pact. Interestingly enough, the effect of the political cycle (Table 4), still induced by independent mayors, while present and significant, is almost halved with respect to the full sample. Our results suggest that, the DSP, while far from perfect, is useful in imposing a binding constraint on the discretionary margin of the incumbents and in limiting pre-electoral over-spending. Similar effects are found if we restrict our sample to the municipalities with a population larger than 15 thousands residents, where the run-off voting system applies. According to some recent political theories, a run-off electoral system increases voters involvement in the electoral process, since it implies a more extended interaction with the candidates, because of the double ballot.

6 Robustness exercises

As a first robustness exercise, we show that results are not affected if, instead of using our days-to-election variable, we use the pre-election year (Table 5a).²¹ In particular, it is still true that the PBC is present only if the mayor is independent.

A second concern is that, when a municipality changes from a party mayor to an independent mayor, other factors could change that also influence the existence and size of the political budget cycles. If these factors are both unobserved and correlated with the change in the kind of mayor, our estimates would be obviously biased. While it seems quite difficult to conceive what such unobserved factors

²¹We use a pre-election year dummy instead of an election year dummy because in Italy elections are held in the first half of the year, therefore they should affect the budget of the previous year.

could be, to address such concern we enrich our basic specification with further covariates. In particular, we control for the share of seats of the mayor’s party in the city house, the fragmentation of the city council (measured, as it is usual in the literature, by the Herfindal index), the age and the education of the mayor. All these variables can be seen as proxies of the mayor’s political strength. Indeed, it may be the case that independent mayors are politically stronger than party mayors (or vice versa), and these three measures are meant to capture different dimensions of personal strength and political capital. However, even adopting this richer specification, the difference between independent and party-affiliated mayors is still there (Table 5b).

7 Budget cycles and re-election probabilities

In the previous sections we documented the existence of a political cycle in the path of expenditures in Italian municipalities. We also showed that this cycle is entirely due to the fiscal behavior of standalone mayors. In the present section we investigate whether this path is driven by the expectation of an electoral pay-off, and in particular whether there exists a difference in these electoral gains between standalone and party-affiliated mayors. This could explain their different spending behaviour.

As a first step, we use the following binary response panel model to test whether on average opportunistic fiscal policy pays off, in terms of re-election prospect (as in Sakurai and Filho, 2008):

$$P(z_{is} = 1 | y_{is}, \Delta y_{is}, \mathbf{X}_{is}) = F(\beta y_{is} + \delta \Delta y_{is} + \mathbf{X}'_{is} \boldsymbol{\gamma} + \mu_i) \quad (3)$$

where F is a cumulative distribution function. The dependent variable z_{is} is a re-election indicator, whose value equals one if the mayor is re-elected for a second term and zero otherwise. The index s refers to the election periods, the index i relates to the municipalities; the two indices together uniquely identify mayors in their first mandate. Among the regressors, y_{is} and Δy_{is} indicate, as in section 4, respectively, the average investment spending over the term and the pre-electoral opportunist distortion, measured as the percentage deviation from the term average, in the year preceding local elections (which, as remarked above, take normally place during the first part of the year). The inclusion of those regressors is consistent with the idea that voters’ behaviour might be influenced both by the mayor’s performance during his entire term and by the so-called “election-year economics”, i.e. last-minute fiscal manipulation that candidates use to “impress” voters during

electoral campaign. The vector \mathbf{X}_{is} replicates the set of socio-economic covariates used in (1). A municipality fixed effect μ_i is included as well.

As a second exercise, we assess which category of incumbents gets higher (electoral) dividends from opportunistic distortion; as in (2) we allow δ to differ between party affiliates and standalone incumbents.²²

$$P(z_{is} = 1|y_{is}, \Delta y_{is}, \mathbf{X}_{is}) = F(\beta y_{is} + \sum_j \delta_j D_{ij} \Delta y_{is} + \mathbf{X}'_{is} \boldsymbol{\gamma} + \mu_i) \quad (4)$$

We estimate the above models with a fixed-effect logit specification²³; of course, accounting for unobserved heterogeneity has the price that the sample of municipalities used in this analysis is smaller than in the previous linear panel model: more than half municipalities were dropped out from the regression due to the absence of within group variation in z_{is} (the dependent variable, re-election, was always 0 or 1).

Our main results are provided in Table 6. First, a higher average spending over the term and an extra-increase in spending legislated in the last budget before the elections (column1) unambiguously increase re-election chances for the incumbent.

This result is in line with recent empirical analyses on Russian regional governments (Enikolopov and Zhuravskaya, 2007), Portuguese municipalities (Veiga and Veiga, 2007b), Brazilian municipalities (Sakurai and Filho, 2008) and Colombian municipalities (Drazen and Erslava, 2010), and with cross-country analyses performed by Brender and Drazen (2008) and Alesina, Perotti and Tavares (1998); Alesina, Carloni and Lecce (2010).²⁴

None of these studies takes into account the role of party membership, to which we now turn. Estimates of (4) (Table 6, column 2) show that the positive effect of pre-electoral extra-spending on re-election prospects only exists for standalone mayors.

²²We keep the notation used in section 4, where $D_{ij} = \{0, 1\}$ is equal to one if and only if ruling mayor is a party affiliate.

²³We use the conditional maximum likelihood estimator proposed by Chamberlain (1980). To remove unobserved heterogeneity and thus sort out the incidental parameter problem, this approach uses $\sum_{s=1}^S z_{is}$, which is a sufficient statistics for μ_i . The distribution of data conditional on $\sum_{s=1}^S z_{is}$, does not depend on μ_i , so grouping across time the set of observations related to the same individual, allows to control for unobserved heterogeneity.

²⁴Earlier empirical evidence on this issue has been more mixed. In particular, Peltzman (1992) and Brender (2003), concerning respectively US State Governors and Israeli municipalities, find no evidence that pre-electoral profligacy helps the incumbent.

This finding dovetails with the evidence that we discussed in the previous section: it supports the hypothesis that the PBC is driven by standalone mayors because they are the only ones who earn electoral dividends from pre-electoral expenditures gains. As we remarked in the introduction, this is likely to be due to the fact that reelection of the party incumbent is also helped by the party organization and also benefits from party reputation.

As a final caveat to the reader, we point out that our estimates (as those in the above-mentioned papers) may suffer from an endogeneity bias, since reverse causality is not accounted for. It is plausible to expect that re-election probability may affect fiscal stance due to the fact that, if an incumbent expects to be successful at next poll irrespective of fiscal policy, she has less incentive to induce a cycle. However, it seems likely that the bias, if it exists, induces an underestimation of the causal effect of fiscal cycle on re-elections, so our findings would be, if anything, reinforced (our estimates should be held as a lower bound of the true effect).²⁵

8 Concluding remarks

In the present paper, we provide new evidence on the existence of PBC, and show that formal institutions (namely, budget rules and term limits) as well as affiliation of the mayor to a national political party, play a role in reducing the size of the PBC.

The idea that strong national political parties may improve the quality of local politics is not new in the political science literature (dating back at least to the work of Riker, 1964). However, national parties, in Italy as elsewhere, differ in the strength of their local organizations. Controlling for these differences would be an interesting extension of our study. It would be also interesting to see if our results hold for other countries as well. It should also be possible, at least in principle, to perform our kind of analysis refining the time-series dimension - in a way similar to Enikolopov and Zhuravskaya (2007) - using the new SIOPE database (which reports cash budgetary data of Italian municipalities on an infra-annual basis). All these extensions are matter for further research.

²⁵The contrary would be true in the case of an incumbent so unpopular that he is doomed to loose elections anyway. However this case seems not relevant in our case, given that, on average, there is a clear incumbency advantage in the data, and that, in this case, an incumbent would not run for the election in the first place.

References

- Akhmedov, A. and Zhuravskaya, E. (2004), *Opportunistic Political Cycles: Test in A Young Democracy Setting* Quarterly Journal of Economics, vol. 119(4), pp. 1301-1338.
- Alesina, A., Carloni, D. and Lecce, G. (2010), *The Electoral Consequences of Large Fiscal Adjustments*, Harvard University, mimeo.
- Alesina, A., Perotti, R. and Tavares, J.A. (1998), *The Political Economy of Fiscal Adjustments*, Brookings Papers on Economic Activity, vol. 1, pp. 197-266.
- Alesina, A. Roubini, N. And Cohen, G. (1997), *Political Cycles and the Macroeconomy*, MIT press, Cambridge (Mass).
- Anderson, T.W. and Hsiao, S (1982), *Formulation and Estimation of Dynamic Models using Panel Data*, Journal of Econometrics, vol. 18, pp.67-82.
- Arellano, M. and Bond, S. (1991), *Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations*, Review of Economic Studies, vol. 58, pp. 277-298.
- Arellano, M. and Bover, O. (1995), *Another look at the instrumental variable estimation of error-components models*, Journal of Econometrics, vol. 68(1), pages 29-51.
- Bartolini A. and Santolini R. (2009), *Fiscal Rules and the Opportunistic Behaviour of the Incumbent Politician: Evidence from Italian Municipalities*, Cesifo wp. n. 2605.
- Besley T. and Case, A. (1995), *Does Electoral Accountability Affect Economic Policy Choices? Evidence from Gubernatorial Term Limits*, Quarterly Journal of Economics, vol. 110(3), pp. 769-798.
- Besley T. and Case, A. (2003), *Political institutions and Policy choices: evidence form US States*, Journal of Economic Literature, vol. 41(1), pp. 7-73.
- Blundell, R. and Bond, S., (1998), *Initial conditions and moment restrictions in dynamic panel data models*, Journal of Econometrics, vol. 87(1), pages 115-143.
- Brender, A. (2003), *The effect of fiscal performance on local government election results in Israel:19891998*, Journal of Public Economics, vol(87), pp. 21872205.
- Brender, A. and Drazen, A. (2005), *Political Budget Cycles in New versus Established Democracies*, Journal of Monetary Economics, vol. 52, pp. 1271-1295.

- Brender, A. and Drazen, A. (2008), *How Do Budget Deficits and Economic Growth Affect Reelection Prospects? Evidence from a Large Panel of Countries*, American Economic Review, vol. 98 (5), pp. 2203-2220.
- Budge I. and Keman H.(1989),*Parties and Democracy: Coalition Formation and Government Functioning in Twenty States*, Oxford University Press, Oxford (UK).
- Chamberlain G., (1980) *Analysis of Covariance with Qualitative Data* Review of Economic Studies, vol(47), pp.225-238.
- Drazen, A. (2001), *The Political Business Cycle After 25 Years*, in Bernanke B. S. and Rogoff Kenneth (eds), NBER Macroeconomics Annual 2000, MIT Press, Cambridge (Mass).
- Drazen, A. (2008), *Political Budget Cycles*, in Durlauf, S. N. and Blume, L. E. (eds), The New Palgrave dictionary of economics, Palgrave Macmillan, London (UK).
- Drazen, A. and Erslava, M. (2010), *Electoral Manipulation via Voter-friendly Spending: Theory and Evidence*, Journal of Development Economics, vol 92, pp. 39-52.
- Enikolopov, R. and Zhuravskaya, E. (2007), *Decentralization and Political Institutions*, Journal of Public Economics, vol. 91, pp. 2261-2290.
- Ferreira, F. and Gyourko, J. (2009), *Do Political Parties Matter? Evidence from U.S. Cities*, Quarterly Journal of Economics, vol. 124(1), pp. 399-422
- Franco, D., Messina, G. and Zotteri, S. (2004), *Fiscal Decentralisation in Italy: an Unfinished Agenda*, Wirtschaftspolitische Blatter, vol. 4, pp. 467-81.
- Franzese, R. J. (2002), *Electoral and Partisan Cycles in Economic Policies and Outcomes*, Annual Reviews of Political Science, vol. 5, pp. 369-421.
- Galli, E. and Rossi, S. (2002), *Political Budget Cycles: the case of Western German Lander*, Public Choice, vol. 110, pp. 283-303.
- Gonzalez, M. (2002), *Do changes in democracy affect the political budget cycle? Evidence from Mexico*, Review of Development Economics, 62(2), pp. 204-224.
- Greene W. (2003), *The behaviour of the maximum likelihood estimator of limited dependent variable models in the presence of fixed effects*, Econometrics Journal, vol. 7, pp. 98-119.
- Grembi V., Nannicini, T. and Troiano, U. (2011) *Do Fiscal Rules Matter? A Difference-in-Discontinuities Design*, mimeo.

- Grier, K. (1989), *On the existence of a Political monetary cycle*, American Journal of Political Science, vol. 33, pp.376-389.
- Harrington J. J., 1992. *The role of party reputation in the formation of policy* Journal of Public Economics, vol. 49, pp. 107-121, October
- Khemani, S. (2004), *Political Cycles in a Developing Economy: Effects of Elections in the Indian States*, Journal of Development Economics, vol. 73, pp. 125-154.
- Kneebone, R.D. and McKenzie, K.J. (2001), *Electoral and partisan cycles in fiscal policy: An examination of Canadian Provinces*, International Tax and Public Finance, vol. 8, pp. 753-774.
- Morlino, L. (2001), *The three phases of Italian parties*, in Diamond, L. and Gunther, R. (eds), *Political parties and democracy*, John Hopkins University press, Baltimore.
- Nordhaus, W. (1975), *The political business cycle*, Review of Economic Studies, vol. 42, pp. 169-190.
- Peltz S. (1992), *Voters as fiscal conservatives*, Quarterly Journal of Economics vol(107), pp. 327-361.
- Persson, T. and Tabellini, G. (2003), *The Economic effects of Constitutions*, MIT press, Cambridge (Mass)
- Petterson-Lidbom, P. (2008), *Do Parties Matter for Economic Outcomes? A Regression-Discontinuity Approach* Journal of the European Economic Association, vol. 6(5), pp. 1037-1056.
- Poterba, J. (1997), *Do budget rules work?*, in Auerbach, A. J. (ed), *Fiscal policy: lessons from economic research*, MIT press, Cambridge, Mass.
- Riker, W. (1964), *Federalism: Origin, Operation, Significance*, Little Brown, Boston, Mass.
- Rogoff, K. (1990), *Equilibrium Political Budget Cycles*, American Economic Review, vol. 80(1), pp. 21-36.
- Rogoff, K. and Sibert, A. (1988), *Elections and Macroeconomic Policy Cycles*, Review of Economic Studies, vol. 55(1), pp. 1-16.
- Seitz H. (2000), *Fiscal Policy, Deficits and Politics of Sub-national Governments: the case of German Lander*, Public Choice, vol. 102, pp. 183-218.
- Sakurai, S. N. and Menezes-Filho, N. A. (2008), *Fiscal Policy and Re-election in Brazilian Municipalities*, Public Choice, vol. 137, pp. 301-324.

- Van Houten, P. (2009), *Multi-level relations in political parties: a delegation approach*, Party Politics, vol. 15(2), pp. 137-156.
- Veiga, L.G. and Veiga, F.J. (2007a), *Political business cycles at the municipal level*, Public Choice, vol. 131, pp.45-54.
- Veiga, L.G. and Veiga, F.J. (2007b), *Does opportunism pay-off?*, Economics Letters, vol. 96(2), pp.177-182.
- Williams, J. (1990), *The Political Manipulation of Economic Policy*, American Political Science Review, vol. 84, pp 767-795.
- Shi, M. and Svensson, J. (2006), *Political budget cycles: do they differ across countries and why?*, Journal of Public Economics, vol. 90, pp. 1367-1389.

Table 1. Descriptive Statistics

			Municipalities with mayor affiliated to a NPP		Municipalities with mayor <i>not</i> affiliated to a NPP	
All years						
	<i>Mean</i>	<i>Std dv</i>	<i>Mean</i>	<i>Std dv</i>	<i>Mean</i>	<i>Std dv</i>
Capital spending	634	1231	497	982	650	1256
Total spending	1559	1638	1341	1207	1584	1678
Central government transfers	343	320	313	240	346	328
Taxable income	8310	2916	7714	3013	8378	2897
Observations	66623		6848		59775	
Obs. with reeligible mayor	42274		4062		38212	
Obs. with <i>not</i> reeligible mayor	24349		2786		21563	
Pre-election years						
Capital spending	677	1158	491	670	707	1212
Total spending	1561	1532	1297	876	1603	1608
Central government transfers	335	295	301	182	340	309
Taxable income	8137	2750	7636	2912	8217	2715
Observations	13976		1798		11278	
Obs. with reeligible mayor	6691		886		5805	
Obs. with <i>not</i> reeligible mayor	6385		912		5473	
Non pre-election years						
Capital spending	623	1278	494	1070	637	1298
Total spending	1535	1601	1339	1295	1556	1629
Central government transfers	340	321	315	260	343	327
Taxable income	8219	2883	7673	2999	8278	2865
Observations	43953		4315		39638	
Obs. with reeligible mayor	28840		2682		26158	
Obs. with <i>not</i> reeligible mayor	15113		1633		13480	

Table 2. Unconditional PBC

	Capital Spending ^a		Total Spending ^a	
	A-B estimation	A-H estimation	A-B estimation	A-H estimation
First Lag of the Dependent Variable	0.130*** (0.0413)	0.154* (0.0933)	0.146*** (0.0530)	0.142 (0.111)
Second Lag of the Dependent Variable	0.0679*** (0.0230)	0.0826* (0.0453)	0.0519* (0.0278)	0.0638 (0.0519)
Population Density	52.96 (36.18)	-0.166 (0.360)	-27.76 (27.06)	-0.431 (0.402)
Dependency ratio	26.47 (18.30)	31.33 (21.91)	30.89* (18.28)	30.81 (22.75)
Population	-2.161 (1.503)	-0.00150 (0.0178)	1.056 (1.098)	-0.0366 (0.0244)
Transfers from the government ^a	0.521* (0.299)	0.438*** (0.166)	1.064*** (0.0653)	1.073*** (0.0768)
Taxable income ^a	0.0140 (0.0350)	-0.0162 (0.0329)	-0.00550 (0.0236)	0.00773 (0.0291)
Binding term limit	42.42** (19.75)	44.68** (18.48)	34.57** (17.05)	44.64** (19.32)
Party affiliation	-128.9*** (47.41)	-76.26*** (25.65)	-49.76 (35.16)	-66.67** (26.18)
Days to the next election	-0.105*** (0.0118)	-0.103*** (0.0111)	-0.106*** (0.0117)	-0.106*** (0.0114)
Hansen (test p-value)	0.150		0.0266	
Test of no second order correlation (p-value)	0.130	0.36	0.200	0.228
Number of municipalities	7,585		7,585	
Number of observations	40001	39998	40001	39998

^aVariables expressed in per capita terms. Two-step A-B estimator, with White-robust standard errors. 2sls AH estimator with White-robust standard errors. Municipality and year fixed effects included in all estimations. Standard error in parenthesis. *: significant at 10%; **: significant at 5%; ***: significant at 1%

Table 3a. Conditional PBC

	Capital Spending ^a		Total Spending ^a	
	A-B estimation	A-H estimation	A-B estimation	A-H estimation
First Lag of the Dependent Variable	0.130*** (0.0413)	0.154* (0.0932)	0.146*** (0.0530)	0.142 (0.111)
Second Lag of the Dependent Variable	0.0678*** (0.0230)	0.0826* (0.0453)	0.0519* (0.0278)	0.0638 (0.0519)
Population Density	52.95 (36.14)	-0.182 (0.360)	-27.82 (27.05)	-0.445 (0.401)
Dependency ratio	26.55 (18.30)	31.40 (21.90)	30.97* (18.28)	30.87 (22.75)
Population	-2.161 (1.501)	-0.000987 (0.0178)	1.059 (1.097)	-0.0361 (0.0242)
Transfers from the government ^a	0.520* (0.299)	0.438*** (0.166)	1.064*** (0.0655)	1.072*** (0.0767)
Taxable income ^a	0.0141 (0.0350)	-0.0162 (0.0328)	-0.00547 (0.0236)	0.00775 (0.0291)
Binding term limit	43.54** (19.69)	46.20** (18.56)	35.84** (17.03)	46.11** (19.43)
Party affiliation	-207.5*** (58.28)	-186.3*** (44.81)	-139.5*** (47.03)	-172.1*** (47.51)
Days to the next election when:				
<i>Mayor affiliated to a NPP</i>	-0.0346 (0.0343)	-0.00519 (0.0296)	-0.0262 (0.0299)	-0.0119 (0.0320)
<i>Mayor not affiliated to a NPP</i>	-0.111*** (0.0128)	-0.113*** (0.0120)	-0.114*** (0.0127)	-0.115*** (0.0124)
Hansen (test p-value)	0.151		0.0267	
Test of no second order correlation (p-value)	0.13	0.363	0,2	0.003
Test of equality between the PBC induced by Mayors affiliated vs. <i>not</i> affiliated to a NPP (p-value)	0.04	0.001	0.008	0.229
Number of municipalities	7,585		7,585	
Number of observations	40001	39998	40001	39998

^aVariables expressed in per capita terms. Two-step A-B estimator, with White-robust standard errors. 2SLS AH estimator with White-robust standard errors. Municipality and year fixed effects included in all estimations. Standard error in parenthesis. *: significant at 10%; **: significant at 5%; ***: significant at 1%

Table 3b. Conditional PBC

	Capital Spending ^a		Total Spending ^a	
	A-B estimation	A-H estimation	A-B estimation	A-H estimation
First Lag of the Dependent Variable	0.130*** (0.0413)	0.154* (0.093)	0.146*** (0.0530)	0.142 (0.099)
Second Lag of the Dependent Variable	0.0678*** (0.0230)	0.083* (0.045)	0.0518* (0.0278)	0.073 (0.048)
Population Density	52.91 (36.16)	-0.186 (0.360)	-27.80 (27.07)	-0.458 (0.394)
Dependency ratio	26.52 (18.30)	31.41 (21.91)	30.92* (18.28)	30.31 (22.63)
Population	-2.160 (1.503)	-0.001 (0.018)	1.057 (1.099)	-0.037 (0.024)
Transfers from central government ^a	0.521* (0.299)	0.438*** (0.166)	1.064*** (0.0655)	1.073*** (0.075)
Taxable income ^a	0.0141 (0.0350)	-0.016 (0.033)	-0.00533 (0.0237)	0.008 (0.029)
Binding term limit	31.14 (41.22)	32.357 (36.375)	-10.84 (36.38)	26.078 (37.130)
Party affiliation	-203.0*** (58.24)	-191.491*** (46.351)	-137.5*** (47.64)	-173.374*** (47.901)
Days to the next election when:				
<i>Mayor affiliated to a NPP and reeligible</i>	-0.035 (0.0354)	-0.015 (0.030)	-0.0410 (0.0310)	-0.024 (0.032)
<i>Mayor not affiliated to a NPP and reeligible</i>	-0.116*** (0.0178)	-0.117*** (0.016)	-0.129*** (0.0173)	-0.121*** (0.017)
<i>Mayor affiliated to a NPP and not reeligible</i>	-0.0483 (0.0581)	0.029 (0.053)	-0.00466 (0.0502)	0.013 (0.054)
<i>Mayor not affiliated to a NPP and not reeligible</i>	-0.103*** (0.0226)	-0.107*** (0.021)	-0.0878*** (0.0216)	-0.105*** (0.022)
Hansen (test p-value)	0.151		0.0266	
Test of no second order correlation (p-value)	0.130	0.363	0.200	0.343
Number of municipalities	7,585		7,585	
Number of observations	40001	40001	39998	40001

^aVariables expressed in per capita terms. Two-step A-B estimator, with White-robust standard errors. Municipality and year fixed effects included in all estimations. Standard error in parenthesis. *: significant at 10%; **: significant at 5%; ***: significant at 1%

Table 4. Conditional PBC in municipalities subject to the rules of DSP or to the electoral system with run-off

	Capital Spending ^a		Total Spending ^a	
	DSP ^b	Run-off ^c	DSP ^b	Run-off ^c
First Lag of the Dependent Variable	0.0575 (0.0585)	0.0892 (0.0939)	-0.022 (0.058)	0.006 (0.125)
Second Lag of the Dependent Variable	0.0637* (0.0330)	0.0608 (0.0470)	0.009 (0.038)	-0.029 (0.062)
Population Density	4.144 (4.552)	4.873 (3.955)	1.707 (1.412)	1.671 (1.996)
Dependency ratio	-15.68 (96.25)	-31.64*** (10.06)	-16.72 (13.07)	-35.97* (18.89)
Population	-0.161 (0.170)	-0.216 (0.150)	-0.067 (0.051)	-0.093 (0.076)
Transfers from the government ^a	0.237*** (0.0797)	1.114*** (0.149)	0.119 (0.092)	0.677** (0.264)
Taxable income ^a	0.0117 (0.0124)	0.0137 (0.0142)	-0.004 (0.019)	0.018 (0.028)
Binding term limit	6.017 (8.623)	5.172 (9.939)	3.352 (10.046)	-5.867 (16.375)
Party affiliation	-44.53** (22.61)	-66.68*** (25.79)	6.041 (25.724)	-24.439 (36.743)
Days to the next election when:				
<i>Mayor affiliated to a NPP</i>	-0.0282* (0.0152)	-0.0277 (0.0171)	-0.046*** (0.016)	-0.050** (0.025)
<i>Mayor not affiliated to a NPP</i>	-0.0524*** (0.00578)	-0.0529*** (0.00661)	-0.029*** (0.007)	-0.034*** (0.010)
Hansen (test p-value)	0.0426	0.0760	0.690	0.265
Test of no second order correlation (p-value)	0.970	0.738	0.731	0.840
Test of equality between the PBC induced by Mayors affiliated vs. <i>not</i> affiliated to a NP (p-value)	0.134	0.354	0.17	0.563
Number of municipalities	2,123	2,123	558	558
Number of observations	10,669	10,667	2,519	2,518

^aVariables expressed in per capita terms. The Domestic Stability Pact applies to the municipalities with population over 5,000 residents. The plurality electoral system with run-off applies to the municipalities with population over 15,000 inhabitants. Two-step A-B estimator, with White-robust standard errors. 2SLS AH estimator with White-robust standard errors. Municipality and year fixed effects included in all estimations.

Standard error in parenthesis. *: significant at 10%; **: significant at 5%; ***: significant at 1%

Table 5a. A different independent variable

	Capital Spending ^a		Total Spending ^a	
	A-B estimation	A-H estimation	A-B estimation	A-H estimation
First Lag of the Dependent Variable	0.128** (0.054)	0.209 (0.139)	0.102 (0.065)	0.207 (0.181)
Second Lag of the Dependent Variable	0.071* (0.042)	0.102 (0.068)	0.027 (0.046)	0.086 (0.087)
Population Density	62.808 (40.881)	-0.218 (0.396)	-4.966 (29.552)	-0.373 (0.486)
Dependency ratio	30.46 (20.57)	34.22 (27.23)	34.93* (20.41)	35.64 (28.91)
Population	-2.597 (1.721)	-0.003 (0.021)	0.137 (1.214)	-0.029 (0.027)
Transfers from the government ^a	0.565 (0.346)	0.436** (0.177)	1.102*** (0.091)	1.077*** (0.095)
Taxable income ^a	0.017 (0.051)	-0.025 (0.041)	-0.005 (0.036)	0.012 (0.037)
Binding term limit	60.595*** (22.543)	64.272*** (21.012)	49.264*** (18.617)	66.458*** (22.309)
Party affiliation	-62.775 (73.095)	43.849 (40.644)	24.337 (49.464)	57.353 (41.026)
Pre-election year* Mayor affiliated to a NP	24.866 (51.650)	-50.944 (43.544)	3.110 (41.993)	-43.241 (43.703)
Pre-election year* Mayor <i>not</i> affiliated to a NP	106.224*** (18.973)	105.555*** (16.760)	107.953*** (18.219)	109.853*** (17.237)
Hansen test (p-value)	0.106		0.007	
Test of no second order correlation (p-value)	0.240	0.61	0.489	0.458
Test of equality between the PBC induced by Mayors affiliated vs. <i>not</i> affiliated to a NP (p-value)	0.129	0.0006	0.019	0.009
Number of municipalities	7311		7310	
Number of observations	32300	32300	32297	32297

^aVariables expressed in per capita terms. Two-step A-B estimator, with White-robust standard errors. 2sls AH estimator with White-robust standard errors. Municipality and year fixed effects included in all estimations. Standard error in parenthesis. *: significant at 10%; **: significant at 5%; ***: significant at 1%

Table 5b. Adding control variables

	Capital Spending ^a		Total Spending ^a	
	A-B estimation	A-H estimation	A-B estimation	A-H estimation
First Lag of the Dependent Variable	0.137*** (0.049)	0.174 (0.113)	0.141** (0.065)	0.167 (0.134)
Second Lag of the Dependent Variable	0.092*** (0.028)	0.102* (0.054)	0.070** (0.035)	0.086 (0.062)
Population Density	39.684 (75.106)	-0.618 (0.838)	-51.148 (44.274)	-0.853 (0.884)
Dependency ratio	34.64 -24.66	30.37 -29.40	35.54 -23.78	35.66 -30.94
Population	-2 (3.813)	0.007 (0.059)	2.206 (2.145)	-0.080 (0.070)
Transfers from the government ^a	0.185 (0.181)	0.131 (0.120)	1.104*** (0.096)	1.069*** (0.106)
Taxable income ^a	0.025 (0.033)	0.008 (0.037)	-0.007 (0.030)	0.014 (0.038)
Education of the Mayor	-2.472 (25.237)	71.275** (30.002)	-6.901 (22.564)	68.769** (31.581)
Strenght of the Mayor in the city council	0.003 (1.187)	0.454 (0.78)	-1.346 (0.979)	-0.598 (0.801)
Binding term limit	53.812 (33.217)	-0.120*** (0.018)	39.721 (28.729)	-0.125*** (0.019)
Party affiliation	-198 (132.262)	2.909 (27.785)	-233.155*** (85.566)	-9.355 (29.681)
Days to the next election when: <i>Mayor affiliated to a NPP</i>	-0.067 (0.099)	-0.044 (0.035)	-0.041 (0.052)	-0.049 -0.039
<i>Mayor not affiliated to a NPP</i>	-0.123*** (0.021)	-0.112*** (0.0164)	-0.122*** (0.020)	-0.117*** (0.0169)
Hansen (test p-value)	0.334		0,044	
Test of no second order correlation (p-value)	0.479	0,293	0.282	0.219
Test of equality between the PBC induced by Mayors affiliated vs. <i>not</i> affiliated to a NP (p-value)	0,583	0.007	0.166	0.016
Number of municipalities	5963		5963	
Number of observations	26325	32190	26323	32188

^aVariables expressed in per capita terms. Two-step A-B estimator, with Widmeijer-robust standard errors. 2sls AH estimator with White-robust standard errors. Municipality and year fixed effects included in all estimations. Two controls, fragmentation of the town council and mayor's education, added to the regression, are not shown because not statistically significant.

Standard error in parenthesis. *: significant at 10%; **: significant at 5%; ***: significant at 1%.

Table 6. Re-election probability and PBC

	Probability of re-election	
	odds ratio	odds ratio
Opportunistic deviation		1.0034*** (0.001)
Opportunistic deviation when:		
<i>Mayor affiliated to a NPP</i>	1.005 (0.0032)	
<i>Mayor not affiliated to a NPP</i>	1.0032*** (0.001)	
Investment spending ^a	1.0003*** (0.0001)	1.0003*** (0.0001)
Party affiliation	0.875 (0.1372)	0.8809 (0.1373)
Population density ^a	0.9997 (0.0021)	0.9997 (0.0021)
Dependency ratio ^a	2.481 (1.2584)	2.571 (1.3038)
Population ^a	1.000 (0.0002)	1.000 (0.0002)
Per capita transfers from central government ^a	0.9998 (0.0006)	0.9998 (0.0006)
Per capita taxable income ^a	1.0008*** (0.0001)	1.0008*** (0.0001)
Hausman test (p-value)	0.016	0.028
Observations	2,442	2,442
Number of municipalities	1,180	1,180

^aVariables expressed in average over the mandate.

Standard error in parentheses. *: significant at 10%; **: significant at 5%; ***: significant at 1%.