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PARTIES, INSTITUTIONS AND POLITICAL BUDGET CYCLES AT THE MUNICIPAL LEVEL

by Marika Cioffi*, Giovanna Messina* and Pietro Tommasino*

Abstract

We study the magnitude, determinants and electoral consequences of pre-electoral fiscal manipulation by incumbent politicians. To this aim, we build a dataset covering all the Italian municipalities. We document several facts. First, there is a clear political cycle in the path of expenditures, driven by capital outlays. Second, only mayors not affiliated to a national political party induce an election-driven expenditure cycle. Third, pre-electoral expenditure boosts the re-election prospects of incumbents only if they are 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 appear ineffective.

JEL Classification: H72, D72.
Keywords: political budget cycles, local public finance, political parties.

Contents

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1 Introduction[1]

In this paper we assess the existence and the determinants of pre-electoral fiscal manipulation by incumbent politicians. To this aim, we build a panel dataset covering all 8,100 Italian municipalities. 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 draw near, whereas no cycle is detected in the behaviour of mayors affiliated to a national political party. Third, pre-electoral expenditure boosts the re-election prospects of incumbents only if they are not affiliated to a national party. Fourth, we find that lame-duck mayors tend to spend more on average, but only those who are not affiliated to a national political party give an extra boost to spending in pre-electoral times.

Taken together, these results suggest that party discipline plays a useful role in limiting pre-electoral profligacy of the incumbents and keeping them accountable even without the incentives to behave well provided by re-election. This function of political parties is well established in the political science literature. For example, Budge and Keman (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".[2] Concerning more specifically the relationship between the national party and local officials, a party-affiliated mayor is likely to act not only with the objective of being re-elected since he also needs to take into account the requests of his national party's central office. Indeed, the party can use several levers in order to discipline its mayor, including the promise of cooptation in the national party leadership, as well as 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 (e.g. van Houten, 2009).

Besides the impact of party membership, some of our results also concern the role of

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[2]Along the same lines, in the economics literature see Harrington (1992).

formal institutions. Concerning in particular the effects of budget rules, we find that their introduction significantly reduces the size of the political budget cycle (this is true both for stand-alone mayors and for party mayors).

This paper contributes to several strands of the political economy literature. First, it adds to the existing evidence on the presence of a political budget cycle (henceforth PBC) at the sub-national level. Research on the PBC was rejuvenated by two important contributions by Brender and Drazen (2005) and Shi and Svensson (2006).[3] These studies have been influential in several respects: (a) they shifted the emphasis from the manipulation of aggregate outcomes to that of fiscal instruments;[4] (b) they stressed the fact that the strength of the PBC may vary according to context-specific conditions;[5] (c) 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 (1998). However, both Brender and Drazen (2005) and Shi and Svensson (2006) use country-level data, which obviously poses problems due to the difficulty of accounting convincingly for all the differences between nations, which are mostly unobserved and possibly related to the PBC. In the last few years, a growing body of literature is trying to overcome the problems inherent in 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).[6] This literature is still relatively small. To our knowledge, apart from the present paper, there are only

[3] See also Persson and Tabellini (2003).

[4] The 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 expectations 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, 1975). However, 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 weak and inconclusive.

[5] In 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).

[6] These 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 that they just study the overall budget balance, instead of individual budgetary items. The second approach, taken in this paper, is consistent with the theoretical idea that PBCs are to be expected on those items which are easier to manipulate and, at the same time, more visible to voters (Rogoff, 1990; Rogoff and Siebert, 1988; Drazen and Erslava, 2010).

two other works that do this. Drazen and Erslava (2010) use data from Columbia, and Veiga and Veiga (2007a) present data on Portuguese municipalities. Therefore, our results document the existence of municipal-level PBCs in a democracy that is the largest, oldest and richest of those studied to date.[7]

This paper also adds 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 are positively correlated with the strength of national political parties. Following Riker (1964), they argue that parties 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 on the issue of PBCs, nor do they discuss the behaviour 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 finding that mayors who are serving their second term in office (who are non re-eligible under Italian law) tend to spend more on average, is consistent with previous US-based evidence (Besley and Case, 1995, 2003) and with standard moral hazard models of political agency (for example, 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 is well known (Poterba, 1997), while there is a broad consensus that fiscal rules might be effective, it has been difficult to find plausibly exogenous variation in the rules. In Italy, municipalities are assigned to different legal regimes based only on their size, which we can control for: this makes the "selection on observables" assumption quite plausible. This interesting feature of the Italian case is also exploited by Grembi, Nannicini and Troiano (2011), who use regression discontinuity techniques to show that the budget rules imposed on the Italian municipalities (Domestic Stability Pact; DSP) improve budgetary discipline.[8]

The rest of the paper is structured as follows: section 2 spells out the fiscal policy

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

[8] Bartolini and Santolini (2009) 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.

framework and the electoral rules which characterize Italian municipalities; sections 3 and 4 describe our dataset and our empirical strategy; sections 5, 6 and 7 present our results, together with several sensitivity exercises; section 8 concludes.

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. The regions are involved primarily in the provision of health services, the provinces perform functions relative to road maintenance and the natural environment, while the municipalities are responsible for public lighting, waste disposal, urban road maintenance, local transport, social aid, childcare and primary schooling. The share of general government primary expenditure administered by municipalities is about 10 per cent (4 per cent of Italian GDP); this share rises to 30 per cent if we consider only capital expenditure, and to slightly less than 50 per cent if we focus on investment.

Municipalities are financed with a mix of transfers and own revenues: municipal taxes account for roughly 35 per cent of total current revenue, a further 25 per cent stems from other own revenue, such as the collection of tariffs and fees, while the remaining 40 per cent comes from transfers from higher levels of government, which are largely unconditional. The allocation of these grants across municipalities reflects demographic, socio-economic and fiscal indicators. [9]

The budget behaviour of sub-national governments is subject to the rules stated in the so-called Domestic Stability Pact (DSP). This Pact was introduced in 1999 with a view to involving sub-national authorities in the attainment of the fiscal objectives set at the European level; it requires regional and local governments to achieve expenditure targets and/or budget balance; its rules are revised from year to year. When the DSP was first introduced in 1999, the targets were based on a version of the "golden rule". Hence the

[9] See Decree law No. 504/1992. The current system of municipal finance is basically in place since 1992. Relatively minor changes occurred in 1997 (Decree law No. 544/1997 introduced new parameters regarding the scope of the services provided, the presence of military bases and indicators of socio-economic decay and of fiscal effort) and in 2001 (Law No. 448/2001 stipulated that the annual amount of transfers to be allocated among municipalities had to be a fixed proportion of the receipts from national personal income tax).

budget balance it referred to was defined as the difference between total revenue, net of state transfers, and total expenditure, net of investment and interest payments. In subsequent years, additional items have been excluded. Since 2002, the budgetary rules set for the regions have been set in terms of expenditure rather than budget balance. Importantly for our analysis, since 2001 smaller municipalities (those with less than 5,000 residents) have been 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 hiring. However, no evidence is available on the effective implementation of these sanctions, and this is likely to have undermined the credibility of the DSP, together with the fact that the rules have changed frequently over time.

2.2 Electoral rules

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.[10]

The direct election of mayors was introduced in 1993,[11] with the aim of strengthening their powers and increasing their accountability. Mayors are elected under a plurality system which varies slightly according to a threshold based on population size (15.000 inhabitants)[12] and which awards a majority premium to the party (or coalition of parties) supporting the winning candidate.[13] The size of municipal bodies also varies according to population, ranging from 12 to 60 members for the *Consigli* and from 4 to 16 members for the *Giunta*. Since 1993, elections have been held every 4 years. The duration of the mandate was subsequently extended to 5 years[14] unless particular circumstances (such as the death of the mayor, ex-post incompatibilities, or criminal charges) trigger an earlier resignation of the mandate. Therefore there is no possibility of calling for "snap elections". Importantly for our purposes, since 1993 mayors have been subject to a term limit: they cannot remain in office for more than two consecutive mandates, unless (since April 1999) an early termination occurs for reasons other than voluntary

[10] The Italian local level of government is regulated by Legislative Decree No. 167/2000.
[11] Law No. 81/1993.
[12] Below 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 more than one list, and a run-off takes place if none of the candidates wins an absolute majority of votes at the first round.
[13] Below this threshold, the list supporting the winning candidate receives two-thirds of the council seats, while above the threshold, the lists endorsing the elected mayor get 60% of the seats.
[14] Law No. 120/1999.

resignation and before half their term has expired.

3 The data

To test for the existence of a PBC in Italian municipalities we consider data covering all 8,100 Italian municipalities, for a nine-year period (from 1998 to 2006). Overall, our data set consists of about 64,000 observations. Table 1 reports the summary statistics for the dependent and explanatory variables used in the model.

Our analysis focuses 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 standpoint, 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 these powers were suspended. Therefore as our dependent variable we use alternatively per capita total expenditure and capital expenditure.[15] 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 be targeted towards particularly sensitive groups of voters; furthermore, in most of the years covered in our sample, the largest share of capital expenditure (i.e. investment) was exempted from DSP rules. By contrast, the bulk of current expenditure is represented by compensation of employees, which is a very rigid budget item.

Our main explanatory variable is the number of days to the next council election (as a proxy for the electoral cycle). Indeed, as Williams (1990) and Grier (1989) were first to observe, this smoother counter variable is preferable to an election-year dummy, also because there may be misalignments between years in which budget choices are made and electoral deadlines. The election-year dummy may in fact be a noisy indicator if elections are held early (late) during a year, since it would capture mostly post-election (pre-election) effects. Since most of the local elections covered by our dataset were held in the first half of the year, we designed the election-year dummy as follows: it takes a value equal to 1 in the year preceding a scheduled administrative local election and 0 otherwise.

[15] Our data source is the Italian Home Office, which collects the yearly balance sheets of all Italian municipalities.

In all our regressions we include a set of socio-demographic controls, namely: the municipality's population, the population density (i.e. the ratio of inhabitants to municipal area expressed in hectares) and the dependency ratio (the share of the population less than 10 and more than 65 years old).[16] Population size and density could influence expenditure 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 the elderly are more likely to increase expenditure on social services.

We include indicators of the public or private financial resources available to each municipality, namely the amount of current transfers from other levels of government and the income per capita.[17] We also include year dummies, in order to capture idiosyncratic shocks across observations during the same period.

Finally, we add a dummy equal to 1 if the mayor is into his second term and therefore not eligible for re-election. We also experimented with a variable meant 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 given the high number of civic coalitions (*liste civiche*), it is very difficult to unambiguously attach a political colour to most of the majorities.[18] Overall, we do not expect ideology or partisanship to play a significant role in PBCs at the municipal level. First, most of the more partisan political issues are typically an object of regional and national politics. Second, within local expenditure our focus is on capital expenditure, which can hardly be seen as being in any way partisan; as it is often said, there is no Republican or Democratic way to fill a pothole. Finally, public finance theory suggests that the possibility of moving from one municipality to another should reduce partisan differences in municipal policies. Indeed, there is evidence that such differences do not exist (Ferreira and Gyourko, 2009). Instead of looking to the political ideology of a mayor, we build a dummy which is equal to 1 if the mayor belongs to a national political party and 0 if he belongs to a *lista civica*.[19] Overall, most municipalities are governed by a *lista civica* most of the time, even if, as reported in Table 2, *liste civiche* are slighly more widespread in larger towns (90 as against almost

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

[17] Data 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. Income per capita is taken from the database on income tax returns of the Revenue Agency.

[18] In any case, we verified that our results are not influenced by the introduction of this variable among regressors.

[19] All our political variables have been computed from the Home Office's database on local and general elections.

80 per cent) and in the centre-north (90 as against 85 per cent). However, there are several instances in which, with elections, a municipality switches from a party-affiliated mayor to a stand-alone mayor or viceversa. Overall, this kind of change occurred about 950 times; almost 700 times in municipalities with more than 5,000 residents, about 550 times in municipalities with a population of above 15,000.

4 The empirical strategy

Our empirical model can be summarized as follows:

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

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 election day approaches. The fixed effects account for time-invariant characteristics of the municipality, either observable (for example, whether it belongs to a special statute region - which implies a different budget structure - or has a geographic characteristics which may influence the price of public goods provision) or unobservable.

Estimation of the above equation with standard procedures (e.g. first-differencing or within-group transformation) to get rid of the unobserved heterogeneity μ_i would yield an estimation bias of order $1/T$, with T being the length of the panel (Nickell, 1981). Therefore, we apply to the version in first differences of equation (1) the GMM approach 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 instruments are, under the assumption of a lack of serial correlation in the error terms, current and past values of the vector of covariates $(x_{i1}, \ldots, x_{i,t-1}, x_{i,t})$, as well as levels of the dependent variable, lagged two or more periods $(y_{i1}, \ldots, y_{i,t-2})$. 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 the presence of autocorrelation and heteroskedasticity. 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, following Drazen and Erslava (2010), we also

use the more parsimonious (actually the most parsimonious possible, as the model is just-identified) set of instruments proposed by Anderson and Hsiao (1982). [20]

As a second exercise, to study whether the existence and magnitude of PBCs depend on the mayor belonging (not belonging) to a national political party and on the mayor being eligible (or not eligible) for re-election, we enrich our empirical set-up by allowing different values of δ in different subsets of municipalities:

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

Where D_{ij} is a dichotomous variable equal to 1 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 only distinguish between municipalities in which the mayor is an expression of a national political party from the other municipalities; we then further distinguish, within each of these subsets, re-eligible mayors from lame ducks, ending up with a four-fold classification.

5 Estimation results

Our main results are summarized in Tables 3, 4 and 5. Whatever the estimation method, and whatever the dependent variable (total spending or capital spending) the coefficient for the cycle[21] is always positive and highly significant, for both total and capital spending (Table 3).[22] In economic terms, in the year leading up to elections expenditure increases by almost 40 euros per capita. Moreover, basically all the increase in total expenditure is attributable to the increase in capital expenditure. Table 3 highlights other interesting findings: first, there is some evidence that mayors who are not eligible for re-election 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 difference between independent and party-affiliated mayors. In Table 4a we allow the PBC to depend on whether the mayor belongs to a national party or not. It

[20] In 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).

[21] As indicated by either the "days to next election" counter or by the pre-electoral dummy.

[22] We performed the same estimation exercises using current expenditure as a dependent variable; as expected, there is no evidence that it is affected by the PBC.

is apparent 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 the equality of the two coefficients). In Table 4b we look for the presence of a PBC, adopting a double partition of the universe of mayors, between party-affiliated and stand-alone mayors and between mayors eligible and those not eligible for re-election. It can be seen that binding term limits do not have any relevant effect, and that the entire PBC is ascribable to independent mayors, who 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 (i.e. with a population exceeding 5,000 inhabitants). Interestingly enough, the effect of the political cycle (Table 6) induced by independent mayors, while present and significant, is almost halved with respect to the full sample (while still statistically significant). Our results suggest that the DSP, while far from perfect, is useful in imposing a binding constraint on the discretional margin of the incumbents and in limiting pre-electoral over-spending. Similar effects are found if we restrict our sample to municipalities with a population of more than 15,000 residents, where the run-off voting system applies. We do this because the run-off electoral system may have an impact on policy volatility and therefore on budget cycles because it reduces the electoral chances of extremist candidates (Bordignon, Nannicini and Tabellini, 2011).[23]

6 Robustness exercises

As a first robustness exercise, we show that the results are not affected if, instead of using our days-to-election variable, we use the pre-election year dummy (Table 6a).[24] In particular, it is still true that the PBC is present only if the mayor is independent.

A second exercise reflects our concern 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 PBCs. If these factors are both unobserved and correlated with the change in the type of mayor, our estimates would be biased. While it seems quite

[23] Both regressions show that the PBC is still present, though less so, in large municipalities. This result is remarkable as about 70% of Italian towns have a population of less than 5,000 and about 90% have a population of lessthan 15,000.The fact that party affiliation is not just a proxy for population size is also suggested by an auxiliary regression (not shown) in which the party affiliation variable is dropped. This does not make the coefficient on the population variable turn significant.

[24] We 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.

difficult to imagine what the unobserved factors could be, to address these concerns 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 is customary in the literature, by the Herfindal index), the age and 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 remains (Table 6b).

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 behaviour of stand-alone mayors. In this section we investigate whether this path is driven by the expectation of an electoral pay-off, and in particular whether there is a difference in electoral gains between stand-alone and party-affiliated mayors, which may 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 prospects (as in Sakurai and Filho, 2008):

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

where F is a cumulative distribution function. The dependent variable z_{is} is a re-election indicator, whose value equals 1 if the mayor is re-elected for a second term and 0 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, normally takes place during the first part of the year). The inclusion of these 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 an electoral campaign. The vector $\boldsymbol{X_{is}}$ replicates the set of socio-economic covariates used in (1). A municipality fixed effect μ_i is also included.

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 stand-alone incumbents.[25]

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

We estimate the above models with a fixed-effect logit specification.[26]

Our main results are illustrated in Table 7. First, higher than average spending over the term and an extra increase in spending legislated in the last budget before the elections unambiguously increase the re-election chances of the incumbent (column 1).

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 by Brender and Drazen (2008) and Alesina, Perotti and Tavares (1998); Alesina, Carloni and Lecce (2010).[27]

None of these studies takes into account the role of party membership, to which we now turn. Estimates of (4) show that the positive effect of pre-electoral extra-spending on re-election prospects only exists for stand-alone mayors (Table 7, column 2).

This finding is in line with the evidence discussed in the previous section that the PBC is driven by stand-alone mayors. In fact, for stand-alone mayors, pre-electoral expenditure is the only lever available to increase their ballots. It remains to be explained why stand-alone incumbents benefit more than their party-affiliated colleagues from PBC.

[25] We keep the notation used in section 4, where D_{ij} is equal to 1 if and only if the ruling mayor is a party affiliate.

[26] We use the conditional maximum likelihood estimator 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 statistic 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. Of course, the price of accounting for unobserved eterogeneity is that the sample of municipalities used in this analysis is smaller than in the previous linear panel model: more than half the municipalities were dropped from the regression due to the absence of within-group variation in z_{is} (the dependent variable was always 0 or 1).

[27] Erlier 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.

While systematically exploring this issue is beyond the scope of this paper, we remark that the latter can rely on party organization and resources to increase their electoral chances.

As a final caveat to the reader, we point out that our estimates (like 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 probabilities may affect fiscal stance because if incumbents expect to be successful at the next poll irrespective of fiscal policy, they have less incentive to induce a cycle. However, it seems likely that the bias, if there is one, leads to an underestimation of the causal effect of the fiscal cycle on re-elections, so if anything our findings would be reinforced. Our estimates should therefore be held as a lower bound of the true effect.[28]

8 Concluding remarks

In the present paper we provide new evidence on the existence of PBCs, and show that formal institutions (namely, budget rules and term limits) as well as a mayor's affiliation 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, in Italy as elsewhere, national parties differ in the strength of their local organizations. Controlling for these differences would be an interesting extension of our study. It would also be interesting to see if our results hold for other countries as well. It should be possible, at least in principle, to perform our kind of analysis refining the time-series dimension - in a similar way 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 merit further research.

[28] The contrary would be true in the case of an incumbent so unpopular that he is doomed to lose elections anyway. However, this possibility appears irrelevant here, 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.

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Table 1. Descriptive Statistics

	All municipalities		Municipalities with mayor affiliated to a NPP		Municipalities with mayor *not* affiliated to a NPP	
All years						
	Mean	*Std dv*	*Mean*	*Std dv*	*Mean*	*Std dv*
Dependency ratio (%)	31.2	4.9	30.3	4.3	31.3	5.0
Population	5327	9248	8659	12219	4945	8764
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 re-eligible mayor	42274		4062		38212	
Obs. with *not* re-eligible 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 re-eligible mayor	6691		886		5805	
Obs. with *not* re-eligible 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 re-eligible mayor	28840		2682		26158	
Obs. with *not* re-eligible mayor	15113		1633		13480	

Fiscal variables expressed in euros per capita.

Table 2. Distribution of party affiliation

	Municipalities with mayor affiliated to a NPP (%)	Municipalities with mayor *not* affiliated to a NPP (%)
Size		
Population equal to and over 15,000	9.37	90.63
Population below 15,000	21.69	78.31
Area		
North-west	7.41	92.59
North-east	9.83	90.17
Center	10.98	89.02
South	13.62	86.38
Islands	14.01	85.99
Regional status		
Special-status regions	11.2	88.73
Ordinary-status regions	10.10	89.90

Table 3. 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***	0.154*	0.146***	0.142
	(0.0413)	(0.0933)	(0.0530)	(0.111)
Second Lag of the Dependent Variable	0.0679***	0.0826*	0.0519*	0.0638
	(0.0230)	(0.0453)	(0.0278)	(0.0519)
Population Density	52.96	-0.166	-27.76	-0.431
	(36.18)	(0.360)	(27.06)	(0.402)
Dependency ratio	26.47	31.33	30.89*	30.81
	(18.30)	(21.91)	(18.28)	(22.75)
Population	-2.161	-0.00150	1.056	-0.0366
	(1.503)	(0.0178)	(1.098)	(0.0244)
Transfers from the government[a]	0.521*	0.438***	1.064***	1.073***
	(0.299)	(0.166)	(0.0653)	(0.0768)
Taxable income[a]	0.0140	-0.0162	-0.00550	0.00773
	(0.0350)	(0.0329)	(0.0236)	(0.0291)
Binding term limit	42.42**	44.68**	34.57**	44.64**
	(19.75)	(18.48)	(17.05)	(19.32)
Party affiliation	-128.9***	-76.26***	-49.76	-66.67**
	(47.41)	(25.65)	(35.16)	(26.18)
Days to the next election	-0.105***	-0.103***	-0.106***	-0.106***
	(0.0118)	(0.0111)	(0.0117)	(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

[a]Variables expressed in per capita terms. Two-step A-B estimator, with Widmejier-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 4a. 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***	0.154*	0.146***	0.142
	(0.0413)	(0.0932)	(0.0530)	(0.111)
Second Lag of the Dependent Variable	0.0678***	0.0826*	0.0519*	0.0638
	(0.0230)	(0.0453)	(0.0278)	(0.0519)
Population Density	52.95	-0.182	-27.82	-0.445
	(36.14)	(0.360)	(27.05)	(0.401)
Dependency ratio	26.55	31.40	30.97*	30.87
	(18.30)	(21.90)	(18.28)	(22.75)
Population	-2.161	-0.000987	1.059	-0.0361
	(1.501)	(0.0178)	(1.097)	(0.0242)
Transfers from the government[a]	0.520*	0.438***	1.064***	1.072***
	(0.299)	(0.166)	(0.0655)	(0.0767)
Taxable income[a]	0.0141	-0.0162	-0.00547	0.00775
	(0.0350)	(0.0328)	(0.0236)	(0.0291)
Binding term limit	43.54**	46.20**	35.84**	46.11**
	(19.69)	(18.56)	(17.03)	(19.43)
Party affiliation	-207.5***	-186.3***	-139.5***	-172.1***
	(58.28)	(44.81)	(47.03)	(47.51)
Days to the next election when:				
Mayor affiliated to a NPP	-0.0346	-0.00519	-0.0262	-0.0119
	(0.0343)	(0.0296)	(0.0299)	(0.0320)
*Mayor **not** affiliated to a NPP*	-0.111***	-0.113***	-0.114***	-0.115***
	(0.0128)	(0.0120)	(0.0127)	(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. those *not* 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

[a]Variables expressed in per capita terms. Two-step A-B estimator, with Widmejier-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 4b. 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***	0.154*	0.146***	0.142
	(0.0413)	(0.093)	(0.0530)	(0.099)
Second Lag of the Dependent Variable	0.0678***	0.083*	0.0518*	0.073
	(0.0230)	(0.045)	(0.0278)	(0.048)
Population Density	52.91	-0.186	-27.80	-0.458
	(36.16)	(0.360)	(27.07)	(0.394)
Dependency ratio	26.52	31.41	30.92*	30.31
	(18.30)	(21.91)	(18.28)	(22.63)
Population	-2.160	-0.001	1.057	-0.037
	(1.503)	(0.018)	(1.099)	(0.024)
Transfers from central government[a]	0.521*	0.438***	1.064***	1.073***
	(0.299)	(0.166)	(0.0655)	(0.075)
Taxable income[a]	0.0141	-0.016	-0.00533	0.008
	(0.0350)	(0.033)	(0.0237)	(0.029)
Binding term limit	31.14	32.357	-10.84	26.078
	(41.22)	(36.375)	(36.38)	(37.130)
Party affiliation[b]	-203.0***	-191.491***	-137.5***	-173.374***
	(58.24)	(46.351)	(47.64)	(47.901)
Days to the next election when:				
Mayor affiliated to a NPP and re-eligible	-0,035	-0.015	-0.0410	-0.024
	(0.0354)	(0.030)	(0.0310)	(0.032)
*Mayor **not** affiliated to a NPP and re-eligible*	-0.116***	-0.117***	-0.129***	-0.121***
	(0.0178)	(0.016)	(0.0173)	(0.017)
*Mayor affiliated to a NPP and **not** re-eligible*	-0.0483	0.029	-0.00466	0.013
	(0.0581)	(0.053)	(0.0502)	(0.054)
*Mayor **not** affiliated to a NPP and **not** re-eligible*	-0.103***	-0.107***	-0.0878***	-0.105***
	(0.0226)	(0.021)	(0.0216)	(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

[a]Variables expressed in per capita terms. [b]The same regression has been run by splitting party affiliation between re-eligile and not re-eligible mayors. Estimation results are unaffected (not shown in the table). Two-step A-B estimator, with Widmejier-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 5. Conditional PBC in municipalities subject to the DSP (pop.> 5000) or to the run-off electoral system (pop.> 15000)

	Capital Spending[a]		**Total Spending**[a]	
	DSP[b]	run-off[c]	DSP[b]	run-off[c]
First Lag of the Dependent Variable	0.0575	0.0892	-0.022	0.006
	(0.0585)	(0.0939)	(0.058)	(0.125)
Second Lag of the Dependent Variable	0.0637*	0.0608	0.009	-0.029
	(0.0330)	(0.0470)	(0.038)	(0.062)
Population Density	4.144	4.873	1.707	1.671
	(4.552)	(3.955)	(1.412)	(1.996)
Dependency ratio	-15.68	-31.64***	-16.72	-35.97*
	(96.25)	(10.06)	(13.07)	(18.89)
Population	-0.161	-0.216	-0.067	-0.093
	(0.170)	(0.150)	(0.051)	(0.076)
Transfers from the government[a]	0.237***	1.114***	0.119	0.677**
	(0.0797)	(0.149)	(0.092)	(0.264)
Taxable income[a]	0.0117	0.0137	-0.004	0.018
	(0.0124)	(0.0142)	(0.019)	(0.028)
Binding term limit	6.017	5.172	3.352	-5.867
	(8.623)	(9.939)	(10.046)	(16.375)
Party affiliation	-44.53**	-66.68***	6.041	-24.439
	(22.61)	(25.79)	(25.724)	(36.743)
Days to the next election when:				
Mayor affiliated to a NPP	-0.0282*	-0.0277	-0.046***	-0.050**
	(0.0152)	(0.0171)	(0.016)	(0.025)
*Mayor **not** affiliated to a NPP*	-0.0524***	-0.0529***	-0.029***	-0.034***
	(0.00578)	(0.00661)	(0.007)	(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. those *not* 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

[a]Variables expressed in per capita terms. The Domestic Stability Pact applies to municipalities with a population of over 5,000 residents. The plurality electoral system with run-off applies to municipalities with a population of over 15,000 inhabitants. Two-step A-B estimator, with Widmejier-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 6a. A different independent variable: pre-election year dummy

	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**	0.209	0.102	0.207
	(0.054)	(0.139)	(0.065)	(0.181)
Second Lag of the Dependent Variable	0.071*	0.102	0.027	0.086
	(0.042)	(0.068)	(0.046)	(0.087)
Population Density	62.808	-0.218	-4.966	-0.373
	(40.881)	(0.396)	(29.552)	(0.486)
Dependency ratio	30.46	34.22	34.93*	35.64
	(20.57)	(27.23)	(20.41)	(28.91)
Population	-2.597	-0.003	0.137	-0.029
	(1.721)	(0.021)	(1.214)	(0.027)
Transfers from the government[a]	0.565	0.436**	1.102***	1.077***
	(0.346)	(0.177)	(0.091)	(0.095)
Taxable income[a]	0.017	-0.025	-0.005	0.012
	(0.051)	(0.041)	(0.036)	(0.037)
Binding term limit	60.595***	64.272***	49.264***	66.458***
	(22.543)	(21.012)	(18.617)	(22.309)
Party affiliation	-62.775	43.849	24.337	57.353
	(73.095)	(40.644)	(49.464)	(41.026)
Pre-election year* Mayor affiliated to a NP	24.866	-50.944	3.110	-43.241
	(51.650)	(43.544)	(41.993)	(43.703)
Pre-election year* Mayor *not* affilaited to a NP	106.224***	105.555***	107.953***	109.853***
	(18.973)	(16.760)	(18.219)	(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. those *not* 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

[a]Variables expressed in per capita terms. Two-step A-B estimator, with Widmejier-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 6b. 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***	0.174	0.141**	0.167
	(0.049)	(0.113)	(0.065)	(0.134)
Second Lag of the Dependent Variable	0.092***	0.102*	0.070**	0.086
	(0.028)	(0.054)	(0.035)	(0.062)
Population Density	39.684	-0.618	-51.148	-0.853
	(75.106)	(0.838)	(44.274)	(0.884)
Dependency ratio	34.64	30.37	35.54	35.66
	-24.66	-29.40	-23.78	-30.94
Population	-2	0.007	2.206	-0.080
	(3.813)	(0.059)	(2.145)	(0.070)
Transfers from the government[a]	0.185	0.131	1.104***	1.069***
	(0.181)	(0.120)	(0.096)	(0.106)
Taxable income[a]	0.025	0.008	-0.007	0.014
	(0.033)	(0.037)	(0.030)	(0.038)
Education of the Mayor	-2.472	71.275**	-6.901	68.769**
	(25.237)	(30.002)	(22.564)	(31.581)
Strength of the Mayor in the city council	0.003	0,454	-1.346	-0,598
	(1.187)	(0.78)	(0.979)	(0.801)
Binding term limit	53.812	-0.120***	39.721	-0.125***
	(33.217)	(0.018)	(28.729)	(0.019)
Party affiliation	-198	2.909	-233.155***	-9.355
	(132.262)	(27.785)	(85.566)	(29.681)
Days to the next election when:				
Mayor affiliated to a NPP	-0.067	-0,044	-0.041	-0,049
	(0.099)	(0.035)	(0.052)	-0,039
*Mayor **not** affiliated to a NPP*	-0.123***	-0.112***	-0.122***	-0.117***
	(0.021)	(0.0164)	(0.020)	(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. those *not* 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

[a]Variables expressed in per capita terms. Two-step A-B estimator, with Widmejier-robust standard errors. 2sls AH estimator with White-robust standard errors. Municipality and year fixed effects included in all estimations. Three controls: fragmentation of the town council and mayor's education and age, 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 7. Re-election probability and the PBC

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

[a]Variables expressed in average over the mandate. Standard error in parentheses.
*: significant at 10%; **: significant at 5%; ***: significant at 1%.

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