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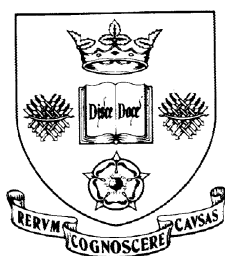
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Public Investment and Re-election Prospects in Developed Countries

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Public Investment and Re-election Prospects in Developed Countries

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Abstract

A growing body of literature suggests that office-motivated politicians manipulate fiscal policy instruments in order to seek their re-election. This paper directly examines the impact of the electoral manipulation of the level and composition of fiscal policy on incumbents' re-election prospects. This impact is estimated through a panel of 21 OECD countries over the period of 1972-1999. Our results suggest that increased public investment during the term in office as well as a shift in expenditures toward public investment can improve re-election prospects. To the contrary, results seem to verify the assumption of low visibility of capital spending, since election year manipulation via public investment does not affect re-election prospects. We also find that voters disfavour politicians who create deficits during elections, while deficit creation over the term in office and preceding the election year (when it is financed by equal proportions of public investment and consumption expenditures) does not seem to affect re-election prospects.

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1. Introduction

Since the seminal work of Nordhaus (1975), a rich body of the literature suggest that office-motivated incumbents manipulate fiscal policy in order to seek their re-election.[1] In a rational expectations framework, political budget cycles (PBC) still arise under the driving assumption of temporary information asymmetries between voters and politicians regarding the competence level of the latter.[2] Electoral manipulation of fiscal policy may, however, also affect the composition rather than the level of public spending. Rogoff (1990) provided a firm theoretical foundation showing that electorally motivated incumbents signal their competence by shifting public spending toward more visible government consumption and away from public investment goods which are mostly long-term projects that will increase voters' utility upon completion.

Many empirical studies find evidence of electorally timed shifts in the composition of public spending not only at the national but also at the local level. It is important to note, though, that for studies conducted at the local level, evidence suggests that authorities attempt to signal their competence by expanding the level of investment spending (see, e.g., Khemani (2004); Drazen and Eslava (2010)), while policymakers at the national level provide immediate benefit to voters through consumption or taxation, whereas capital spending decreases (see, e.g., Vergne (2009); Katsimi and Sarantides (2012)). These findings clearly indicate that Rogoff's (1990) assumption of lower visibility of capital expenditures (e.g., infrastructure) conforms much better to central government rather than to local level spending.

In fact, manipulation of the composition of fiscal policy seems particularly relevant in developed economies in which the incumbent may avoid deficit creation due to the fear of voters' disfavour. Brender and Drazen (2012) find large changes in expenditure composition in election years for developed countries, which are not new democracies, and conclude that this electoral shift in the composition of fiscal policy is "a phenomenon of established democracies".[3]

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[1] In contrast, the partisan approach focuses on the role of government ideology on fiscal policy priorities (see, e.g., Hibbs (1977); Alesina (1987)). For empirical evaluations of the impact of ideology on the composition of fiscal policy, see, e.g., Potrafke (2011).

[2] For a discussion of the implications of theoretical PBC adverse selection and moral hazard type models, see Shi and Svensson (2003). Empirical evidence on the budgetary impact of elections, until recently, suggested that PBC was a phenomenon of less-developed countries (see, e.g., Schuknecht (1996); Shi and Svensson (2006)) or of the so-called new democracies (see Brender and Drazen (2005)). More recent studies of developed countries provide evidence both in favour (see, e.g., Efthyvoulou (2012) for a sample of 27 EU member states) and against (see, e.g., Klomp and de Haan (2013)) the existence of PBC.

[3] In Brender and Drazen (2012), the term "composition" refers to the functional classification of public spending that serves to distinguish transactions by policy purpose or type of outlay (e.g., healthcare expenditures). Throughout this paper, though,

The majority of empirical studies on the impact of electoral manipulation on re-election prospects find that, in established democracies, well-informed voters act as fiscal conservatives and punish rather than reward loose fiscal policies at the polls[4] (see, e.g., Peltzman (1992); Brender (2003) for elections at the state and local levels, and Brender and Drazen (2008) and Alesina et al. (2012) for national elections).[5] Regarding the relationship between public investment expenditures and re-election prospects, limited studies are exclusively concentrated at the *local* level, and their results are mixed (see, e.g., Veiga and Veiga (2007) and Drazen and Eslava (2010)).

Two points should be noted about these contradicting results at the local level. First, as emphasized by Brender and Drazen (2008), empirical conclusions drawn from country studies should, strictly speaking, be limited to these countries. Given that fiscal items that are clearly identifiable as provincial government responsibilities differ from one country to another, it is difficult to derive more general policy conclusions from country studies. Secondly, as already mentioned, local authorities tend to expand expenditures on investment projects near elections, indicating that Rogoff's (1990) prediction of shifts in public spending toward more visible government consumption and away from public investment goods may not hold for local governments in which public investment may not be characterized by low visibility.

The contribution of the present paper is found in its focus on the role of national public investment as an instrument for affecting re-election probability in developed countries through the level and composition of fiscal policy. We believe that this is an important step because, in our research, we empirically test the following predictions implicitly derived by the existing literature: Firstly, if public capital spending is invisible, as suggested by Rogoff (1990), then the manipulation of public investment just before elections should not affect the re-election probability of the incumbent. We use a sample of established democracies, because we believe it makes sense to analyze the impact of electoral manipulation of public investment on the re-election probability of the incumbent in countries in which this type of electoral manipulation has been supported by empirical evidence. Secondly, public investment expenditures that occurred in the earlier years of an incumbent's

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we use the economic classification that divides public spending into capital and current expenditures, and the term "composition" is used to refer specifically and only to the percentage of capital to current expenditures.

[4] It should be noted that, under certain assumptions regarding preferences and the nature of uncertainty, a number of theoretical models can support the opposite result, namely that electoral manipulation of fiscal policy increases re-election probability (see Rogoff (1990); Milesi-Ferreti and Spolaore (1994); Hodler et al. (2010)).

[5] Klomp and de Haan (2013), on the other hand, although they do not directly test the impact of fiscal policy on re-election, they find that election-motivated budget cycles have a significant positive (but fairly small) effect on the electoral support for the political parties in government.

term in office should be observable by voters near the completion of the term, since these expenditures are mostly long-term projects which are noticed with a lag. Given the positive impact of productive expenditure on long-run growth emphasized by the relevant literature (see, e.g., Kneller et al. (1999, 2001)), we expect voters to reward a rise in this type of expenditure.

Our empirical results using a sample of 21 OECD countries over the period of 1972-1999 suggest that re-election prospects do improve following a rise in central government's capital expenditures or a shift of the composition of expenditures towards capital spending during the incumbent's term in office, while they remain unaffected by manipulation around the election period. [6] Thus, although voters reward incumbents who promote public investment during their term in office, electoral spending on public investment is neither rewarded nor punished. The latter result supports Rogoff's (1990) assumption of the lower visibility of capital expenditures and explains previous empirical findings for electoral manipulation of public investment. Moreover, similarly to Brender and Drazen (2008), we find that voters in developed countries dislike and punish election-year deficits at the polls, financed either by consumption expenditures or even by equal proportions of public investment and consumption expenditures. In contrast to Brender and Drazen (2008), though, deficits during the term in office, financed by equal proportions of public investment and consumption expenditures, have no impact on re-election prospects. This may happen because voters have time to observe the public investment component of expansionary fiscal policy that occurred during the candidate's term in office and may expect that the growth effect of the rise in public investment may facilitate repayment of the resulting deficit without a future rise in taxation.

The remainder of the paper is organized as follows. Section 2 describes the data, specifies the econometric model, and contains our basic findings. Section 3 then reports the results of robustness tests. The last section concludes.

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[6] Following previous studies in this area, our empirical analysis is based on central government data (see, e.g., Shi and Svensson (2006)), and the time range of the sample is dictated by the (un)availability of these data. There are two important reasons for using central government data: First, as noted by Schuknecht (2000), the central government controls only its own budget directly while changes in public spending of the general government (that include all levels of government − state, local, and central) may be affected by both state and local elections. Second, data from general government accounts are less consistent across countries and time periods. The problem we face with central government data is that, although *Government Finance Statistics* until the late nineties has been calculated using *Government Finance Statistics Manual 1986* (GFSM 1986) classification, data beyond this point have been calculated with the *Government Finance Statistics Manual 2001* (GFSM 2001) framework. The GFSM 2001 provides observations until 2008, but has only been backdated until 1990. Fiscal variables are measured on a cash basis according to the first classification and on an accrual basis in the GFSM 2001 classification. This implies that expansion of our data set beyond 1999 is related to a number of inaccuracies of unknown magnitude. At the same time, the new classification does not provide an expansion of the capital expenditures and current expenditures series of the GFSM 1986 classification.

2. Empirical Analysis
2.1. Data and estimation method

In order to estimate the effect of public investment expenditure and the composition of public expenditure on re-election prospects, we use data for 21 OECD countries over the period of 1972-1999.[7] We use this sample of countries in which Brender and Drazen (2012) and Katsimi and Sarantides (2012) find electoral manipulation in public investment expenditures and in the composition of public spending. The dependent variable *re-election* is based on information from the World Statesmen Encyclopedia and from the Inter-Parliamentary Union database. These data allow us to follow the terms of individual leaders and parties in office from appointment to termination and to associate them with election dates. It is worth noting that we only include legislative elections for countries with parliamentary political systems and presidential elections for countries with presidential systems. In line with Brender and Drazen (2008), the *re-election* variable includes observations in which the leader (the president for the United States and the prime minister for all other countries of our sample) has been in office for at least two years prior to the elections. It takes value 1 if the incumbent chief executive is re-elected and 0 otherwise. It also allows for the following special cases:

(i) In cases in which the leader quits within the year of elections, *re-election* receives the value 0.

(ii) In cases in which, during the election year, a leader is replaced because he died or resigned due to health problems, *re-election* receives the value 1 if the successor leader gets re-elected and 0 otherwise.

(iii) For the United States, where the president is subject to a legal limit, *re-election* receives the value 1 if the reigning leader's party is winning in the elections and 0 if it loses.[8]

(iv) Finally, in a coalition government, the *re-election* variable receives the value 1 if the appointed prime minister comes from the same party as that of the prime minister before the elections, and 0 otherwise. In addition, to ensure that the prime minister has

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[7] The countries of our sample are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxemburg, Netherlands, Norway, Portugal, Spain, Sweden, the United Kingdom and the United States. South Korea is excluded from the sample, because the president has no possibility of re-election, while at the same time we cannot follow the party's re-election for the two observations we have (1992, 1997), since they were dissolved. New Zealand is excluded from the sample due to unavailability for fiscal data. We included in the sample two small OECD countries, Iceland and Luxemburg, because we did not want to reduce an already small sample. Moreover, when we dropped these countries from our sample, qualitative results remain unaffected.

[8] In our sample, in the US elections of 1988, the candidate could not run for re-election after the termination of the second mandate. Besley and Case (1995) show that the candidate who cannot run for re-election behaves differently regarding the manipulation of public expenditures. In contrast, though, it can be said that some party loyalty can justify the maintenance of public budget manipulation. To ensure that the results are robust, when we drop this observation, results remain unaffected.

not been changed because he became unpopular, we consider *re-election* only in the case in which the party of the appointed prime minister of the governing coalition received in the current elections a higher vote share in comparison to the previous elections.

Regarding the *re-election* definition, we have 113 campaigns in which the leader was re-elected in 59 cases.[9] Given that the dependent variable used in our specification is a dummy variable, the basic estimating equation used in our research is a probit specification common in many previous studies (see, e.g., Arvate et al. (2009); Buti et al. (2010)). An incumbent's likelihood of getting re-elected can be represented mathematically as follows:

$$\Pr ob(R_{it}^*) = F(\beta' x_{it}) \qquad (1)$$

where i denotes countries, t is an index for time periods, and R_{it}^* is an unobserved variable that is related to the dichotomous *re-election* variable R_{it} such that,

$$R_{it} = 1 \ if \ R_{it}^* > 0 \ and \ R_{it} = 0 \ if \ R_{it}^* \le 0 \qquad (2)$$

$F(.)$ is the normal cumulative distribution function and β is the vector of parameters to be estimated according to the following equation:

$$\beta' X_{it} = \alpha + \beta Fiscal_{it} + \gamma X_{it} + \varepsilon_{it}, \qquad (3)$$

where *Fiscal* is the set of variables we use to capture the impact of fiscal policy on re-election prospects, X_{it} is the vector of country-specific and time-varying political and socio-economic control variables that we expect to affect the probability of re-election, and ε_{it} is the error term.

In order to construct the set of fiscal variables of our research, we use data from the Global Development Network Growth Database (GDNGD). Primary data for the proceeds are taken from IMF, Government Financial Statistics (GFS), and data for GDP come from

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[9] Because we do not want to reduce an already small sample, for special cases (ii), (iii), and (iv), we follow the party's re-election, while in all other cases we follow the leader's re-election. Alternatively, if we narrow the sample to keep only the observations of individual leaders in office, results remain unaffected.

Global Development Finance and World Development Indicators. Note that, due to data availability, we have to restrict our data set to the period of 1972-1999. A complete list of all variables used in our estimations is provided in the Data Appendix, with details on data sources and descriptive statistics.

In order to model the impact of public investment on re-election prospects, we use the economic classification provided by the *GFS* database that divides public spending into capital and current expenditures. Based on this classification, we construct the variable *capital term* by computing the average of capital expenditures as a percentage of the GDP during the leader's current term in the office (excluding the election year of previous elections, but including the election year of current elections). At the same time, we want to check whether pre-electoral manipulation in capital expenditures affects re-election prospects. For this reason, we split the variable *capital term* into two: *capital deviation*, which is the change in the capital expenditures as a percentage of GDP in the election year relative to the average of the years preceding elections (excluding the election year of previous elections), and *capital non-election*, which is the average in the fiscal variable as a percentage of GDP during the leader's (party's) term in the office preceding the election year (excluding the election year of previous elections). Finally, given that it takes time for investment to be materialized, we include in our estimations the variable *initial capital*, which includes capital expenditures as a percentage of the GDP in the first year during the term in office (we do not consider in the term the election year of previous elections).

Alternatively, we calculate the percentage of capital to current expenditures in order to test if the composition of public spending affects re-election prospects.[10] In a direct analogy to the definitions in the previous paragraph regarding capital expenditures, we construct the variables *composition term*, *composition deviation*, *composition non-election*, and *initial composition*.

Apart from the fiscal variables, we include in our estimations a number of political and socio-economic control variables that we expect to affect the probability of re-election. More specifically, the following control variables are included in the model specification:

(i) *Macroeconomic conditions*: We include in our specification the growth rate of output (*growth term*), the inflation rate (*inflation term*), and the unemployment rate (*unemployment term*) during the term in office. Although studies for developed countries are contradictory regarding the effect of the growth rate of output on voting

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[10] According to the descriptive statistics in the Data Appendix, the average of our sample for the variable *composition term* is 8.723. This means that capital spending is on average 8.723% of the current expenditure.

behaviour (see, e.g., Alesina and Rosenthal (1995)), we anticipate that a higher growth rate during the term in office is positively associated with re-election prospects. To the contrary, we expect that the variable *inflation term* affects negatively re-election prospects, since voters dislike inflation and disfavour at the polls incumbents who create it (see, e.g., Brender and Drazen (2008); Alesina et al. (2012)). Finally, existing empirical studies, in general, found no evidence that increased unemployment rate has a detrimental consensuses for the incumbent re-election prospects (see, e.g., Peltzman (1992); Aidt (2011); Alesina et al. (2012)).[11] Our data for *growth term* and *inflation term* are taken from the World Bank's World Development Indicators, while those for *unemployment term* are from the OECD Labour Force Statistics.[12]

(ii) *New democracy effect*: We include in our estimations the dummy variable *new democracy* that receives the value 1 for the period of the first 4 elections after Greece, Portugal, and Spain shift to a democratic regime. According to Brender and Drazen (2005), these new democracies are more prone to fiscal manipulation, since incumbents might be rewarded at the polls if they can "mislead" inexperienced voters by attributing the good economic conditions to their competency.[13]

(iii) *Level of "awareness"*: As a measure of awareness, we use the variable *illiteracy term*, which is the proportion of the population aged 15 years old and above with no schooling. It is taken from a dataset collected by Barro and Lee (2010) that covers successive five-year averages. We expect the illiteracy rate to be associated with low levels of voter sophistication and, hence, with higher re-election prospects.

(iv) *Ideological orientation:* In order to check whether government ideology actually matters for re-election, we employ the *govparty* index developed by Schmidt (1992; data provided by Armingeon et al. (2008)), where high values indicate a dominance or even hegemony of social-democratic and other left-wing parties in the cabinet composition (1=Hegemony of right parties to 5=Hegemony of left parties). Based on this classification, we create the dummy variable *centre (left)* that receives the value 1 if the cabinet in power scores 3 (*4 or 5*) on the ideology index *govparty* of Armigneon

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[11] Mechtel and Potrafke (2011) find empirical evidence in favour of electoral unemployment manipulation through Active Labour Market Progammes.

[12] It is worth noting that the macroeconomic variables do not seem to display problematic correlations. In addition, when the variable *growth term*, which does not affect re-election prospects, is dropped from the specification, the results remain unaffected.

[13] We included in our sample Greece, Portugal, and Spain, because we did not want to reduce an already small sample. On the other hand, when we drop these countries from our estimations, our qualitative results remain unaffected.

et al. (2008). Moreover, we expect that the probability of success is much lower for centrist governments, since these governments are, in most cases, coalition and fragmented governments (see, e.g., Alesina et al. (1997)).

(v) *Maastricht*: Finally, we include in our estimations the dummy variable *EU* that receives the value 1 for the period 1993-1999 for countries that are members of the European Union and signed the Maastricht treaty. This variable receives the value 1 for the period of 1995-1999 for Austria, Finland, and Sweden, which become members of the European Union on January 1, 1995. Note that the period after the adjustment of ERM bands and before the establishment of the Euro-area was characterized by EU member states' efforts to comply with the convergence criteria. This effort included a process for extensive structural reforms and fiscal consolidation. Thus, this variable should capture the impact of the countries' efforts to adopt the Euro on the incumbent's re-election prospects.

We have also attempted to include in our model a series of other control variables, such as the percentage of votes the incumbent receive in the previous elections, dummies to control for majoritarian vs. proportional systems, and presidential vs. parliamentary governments as well the number of terms the incumbent chief executive has been in office. However, none of these variables had a significant effect on re-election prospects, and in order to preserve degrees of freedom, we do not include them in our estimations.[14]

Before proceeding to the estimations, we tested for the presence of random effects using a likelihood ratio test. According to the results, we cannot reject the null hypothesis that all slope coefficients are simultaneously equal to zero, which implies that random effects do not improve the pooled model significantly. In our panel where the number of cross sections exceeds the number of time units, the pooled Probit model would be more efficient, since it requires fewer parameters to be estimated in comparison with a random effects model.[15] Similarly, our test results do not support the inclusion of fixed effects.[16] Therefore, we

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[14] Note that including these additional control variables in our specification does not change our basic findings. Results are available upon request.

[15] It is worth noting that, if we account for heterogeneity among countries using a Random Effects model, qualitative results (available upon request) remain essentially the same.

[16] In order to confirm that our socio-economic and political variables are adequate to capture the cross-country heterogeneity of our specification, we follow the methodology of Buti et al. (2010) to include and test for fixed effects in a linear probability model estimated by Least Square Dummy Variables. F-tests for the joint significance of fixed effects, and which are available upon request, do not reject the hypothesis that fixed effects should not be included in our estimations. We have not attempted to apply Fixed Effects in our Probit regressions, because this would lead to inconsistent estimates (see, e.g., Wooldridge (2002)). An additional concern for the inclusion of Fixed Effects in our specification is that we lose the observations of Finland and Italy due to no variation in the re-election index in these countries.

decided to estimate a simple pooled probit, where standard errors are robust to both heteroskedasticity and possible autocorrelation within countries.

2.2. Results

In Table 1, we examine the effect of capital expenditures and the composition of public expenditures on the probability of re-election. For continuous variables, the reported coefficients are marginal effects computed at the sample mean, while for dummy variables, the marginal effect shows the change in the dependent variable when the value of the dummy variable changes from 0 to 1. Regarding the socio-economic variables, we observe that the variable *growth term* is insignificantly related to re-election prospects in all regressions, while the variable i*nflation term* produces results that indicate a robust negative effect on the probability of re-election. These results seem to verify the previous studies of Alesina et al. (1998) and Brender and Drazen (2008), who found that voters dislike inflation, while growth rate does not seem to affect re-election prospects. As far as the variable *unemployment term* is concerned, it does have a negative effect on *re-election*, but this effect is not robust in all regressions. Moreover, the variable *new democracy* is positive when statistically significant, indicating that, in new democracies, leaders have a higher probability to get re-elected. Regarding the government's ideology, we obtain a positive but insignificant coefficient for the variable *Left*, indicating that the probability of success is identical between left-wing and right-wing governments (omitted category). The *Centre* variable, on the other hand, is negative and significantly related to re-election prospects. This result seems to reflect the fact that centrist governments are in most cases fragmented coalition governments which are less likely to get re-elected (see, e.g., Alesina et al. (1997)). In addition, the coefficient of the variable *illiteracy term* is positive and statistically significant, indicating that lower levels of voter awareness are positively related to re-election prospects. Finally, the variable *EU* has a negative and significant coefficient in all estimated equations. This result could be attributed to the conduct of strict and unpopular policies aiming at that the nominal convergence process required by euro-area participation.

Table 1 here

Turning now to the effect of fiscal performance, as can be seen in column 1 (4) of Table 1, we observe that the variable *capital term* (*composition term*) is positively and significantly related to *re-election* at the 1% (5%) level of significance. This result indicates

an increase of 1 percentage point in *capital term* (*composition term*), leading to an increase of about 8.4 (2.7) percentage points in the chances of re-election.

In a next step, we split the variable *capital term* (*composition term*) into the variables *capital deviation* (*composition deviation*) and *capital non-election* (*composition non-election*), in order to disentangle the electoral effect of fiscal policy versus the effect prior to the election year. As can be seen in columns 2 and 5, respectively, variables *capital deviation* and *composition deviation*, which reflect the change in fiscal variable in the election year relative to the average of the years preceding elections (excluding the election year of previous elections), do not seem to affect re-election prospects. Existing empirical evidence for the same sample of countries suggests that, during elections, capital expenditures decrease in order to finance a fall in direct taxation (see Katsimi and Sarantides (2012)). This finding simply indicates that this fall in capital expenditure is not met with disfavour in voting behaviour, because this cut is not visible by voters during the election period. Capital expenditures (e.g., infrastructure) are mostly long-term projects that will increase voters' utility upon completion. Likewise, a change in the expenditure composition initiated by the fall in capital expenditure does not affect voting behaviour, because this cut is not visible in the election period. On the contrary, the variables *capital non-election* and *composition non-election* over the term in office, excluding the election year, are positive and significantly related to *re-election*. More specifically, an increase of 1 percentage point in *capital non-election* (*composition non-election*) can increase the probability of re-election by 9.5 (2.8) percentage points. Finally, in columns 3 and 6, we observe that the variables *initial capital* and *composition* are positively related to *re-election*. As expected, given that it takes time for investment to be materialized, capital expenditures in the first year of the term in office are most likely to be visible to voters at the election period, increasing the re-election prospects of the incumbent. In particular, an increase of 1 percentage point in *initial capital* (*initial composition*) leads to an increase of about 8.0 (2.5) percentage points in the chances of re-election. [17] This implies that an incumbent who wishes to maximize his re-election prospects should frontload public spending; he should spend on capital as soon as he is elected in order to allow for a sufficient period for this spending to be materialized and observed by voters

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[17] Although there is no theoretical justification for dropping outliers from our sample, it would be of considerable concern if our results were driven by them. We have tested our fiscal variables for outlier observations while applying the method of Hadi (1992). The Hadi (1992) method measures the distance of data points from the main body of data and then iteratively reduces the sample to exclude distant data points. We set the significance level for outlier cutoff at $p = .1$. Results suggest 2 outlier observations for the variables *capital deviation* and *composition deviation* and 4 outlier observations for variables *composition term*, *composition non-election*, and *initial composition*. When we exclude these observations from our estimations, though, the qualitative results remain the same.

while he should lower capital spending in the final year of his term, when this type of spending has the lowest visibility.

3. Robustness

In this section, we examine the robustness of our results by re-estimating our regressions under various modifications. First, we check to determine if our results are affected by the timing of elections. Second, we distinguish between coalition and single-party cabinets, and we re-estimate our baseline specification only for the latter. Finally, we add in our estimations of fiscal variables *surplus* and *revenues* in order to have a complete specification of the budget constraint.

3.1. The timing of elections

Regarding the timing of elections, Rogoff (1990) argues that, during predetermined elections, opportunistic incumbents have ample use of fiscal policy in order to increase re-election probabilities, far greater than in the case of elections being called earlier. Consistent with that theoretical prediction, Katsimi and Sarantides (2012) found that, only during predetermined elections, incumbents reduce capital expenditures and shift the composition of expenditures towards public investment. Hence, in line with Brender and Drazen (2005), we look at the constitutionally determined election interval, and we keep in our sample those elections that are characterized as *predetermined* and are held during the expected year of the constitutionally fixed term. In that way, we keep in our sample the elections that are held at least every 4 years, and so there is more time for policy manipulation. It is worth noting that we choose to exclude endogenous elections from our sample, since they probably introduce an important endogeneity bias. In endogenous elections, the re-election probability can affect the election date in two ways: Firstly, elections may be called when the re-election prospects are favourable, and secondly, coalition governments may be more vulnerable when re-election probability is low. As expected, and given that capital expenditures are mostly long-term projects, the results obtained in Table 2 excluding early elections indicate an even stronger connection between the fiscal variables and re-election prospects. For instance, we observe that an increase of 1 percentage in *capital term* (*composition term*) leads to an

increase of about 14.0 (3.7) percentage points, instead of 8.4 (2.7) percentage points for the whole sample, in the chances of re-election.[18]

One could further argue that an endogeneity bias can arise if an incumbent certain of winning by a large margin may not manipulate expenditure, as in the case of a close race. However, this source of endogeneity may not be important, since on the one hand, it is not obvious why a strategy that helps re-election will only be followed by unpopular incumbents (see Brender (2003)), and on the other hand, even incumbents who are certain about their re-election will still have a incentive to increase the number of the Parliament seats for their party (see Veiga and Veiga (2007)).

Another form of endogeneity bias is that a known change in political majority may affect public spending if the incumbent has different preferences over the level or the composition of public spending than the opposition (see among others, e.g., Person and Svensson (1989); Alesina and Tabellini (1990); and Milesi-Ferretti and Spolaore (1994)). In our case, an incumbent with low popularity and a higher relative preference for current expenditure than his opponent may raise this type of expenditure at the expense of capital spending.

Following Brender (2003), we attempted to minimize the possibility of an endogeneity bias in the following ways: First, we tried to mitigate the effect of popularity on public spending by controlling for the share of votes received in the previous elections. Although the inclusion of this variable has no impact in our results, we drop it from Table 1, as its coefficient is statistically insignificant in every specification. In addition, by looking at the data, we found very weak evidence suggesting that the most unpopular incumbents adopted the largest cuts in public spending before elections in order to improve their popularity. More specifically, in the case of single-party governments, we found that, among the incumbents that decreased the capital to current expenditure ratio by the largest amount, the highest percentage (55%) belonged in the middle of the distribution, according to the share of votes they received, while the 15% belonged in the upper quartile and the 30% in the bottom quartile of our sample.[19]

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[18] A complementary robustness check to the above is to keep in the sample elections where the incumbent has been in power for at least 4 years, regardless of whether these elections are predetermined. Our results (available upon request) indicate even higher positive fiscal variables on re-election prospects in comparison to the baseline specification.
[19] We restrict our attention to single party incumbents since in coalition governments the expected difference in the preferences between the party in power and the opposition government is less clear. Moreover, ranking incumbents according to popularity is more meaningful in single party governments since the share of votes received by the incumbent is in this case better comparable between countries.

Table 2a here

Moreover, regarding the timing of elections, one might argue that the treatment of data regarding the election year cannot be uniform for all countries, since there are countries whose elections take place in the first months of the year and others at the end of the year. So, if the elections were held early in the year, the incumbent would not have enough time to manipulate the composition of public expenditure, and that is why the variable *deviation* is never statistically significant. In order to deal with this problem and ensure the robustness of our results, in cases in which the election took place in the first half of the year, we define the year previous to the election as the pre-election period for the fiscal variables. In Table 2b, we re-estimate our regressions and, as can be seen, the qualitative results are in line with those depicted in Table 1.[20]

Table 2b here

3.2. Single-party incumbents

Another interesting issue concerning this literature is that coalition governments may be weaker than single-party governments (see, e.g., Powell and Whitten (1993); Alesina et al. (1997)), and as a consequence, they adopt different fiscal policies than the latter (see, e.g., Roubini and Sachs (1989); Perotti and Kontopoulos (2002)). In addition, Alesina et al. (2012) point out that certain coalitions may be especially cohesive, and although our *re-election* variable receives the value 0 this does not depict the reality, because a new prime minister after elections may simply be a routine personnel replacement in a stable coalition government. Until now, we have included in our regressions observations in which the chief executive can be the leader of a coalition but also a single-party government. In order to check if our results are affected by the heterogeneity of coalition incumbents, we choose to follow the terms of individual leaders and parties in office only for the cases of single-party governments. In Table 3, we re-estimate our regressions, and the qualitative results under this specification remain essentially the same as those depicted in Table 1.

Table 3 here

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[20] Two points are worth mentioning: First, we din not replicate regressions for *initial capital* and *initial composition*, columns 3 and 6 at Table 1, because under the new specification the first year during the term in office remains the same. Secondly, we did not employ this as our baseline specification because it reduces our small sample by 6 observations while results under both specification results remain essentially the same.

3.3. Additional fiscal instruments

The final robustness exercise we conduct serves to add budget surplus/deficit and total revenues in our estimations in order to have a full specification of the government budget constraint (see Kneller et al. (1999)).[21] In order to avoid perfect multi-collinearity, one element of the government budget should be omitted. Given that, in columns 4 to 6 of Table 4, we include the variable *composition term* that contains variable current expenditures, we choose to omit the latter from the specification. Regarding the interpretation of the results, the estimated coefficient γ_j measures the marginal impact of fiscal variable X_j on re-election prospects, net of the marginal impact of fiscal variable X_m, that we exclude from specification and is the assumed financing element. This implies that current expenditures are the financing element in columns 1 to 3 and total expenditures in columns 3 to 6. In accordance to the above definitions for fiscal variables, we construct for budget surplus/deficit variables *surplus term*, *surplus deviation*, *surplus non-election*, and *initial surplus*, while similarly for total revenues we construct variables *revenues term*, *revenues deviation*, *revenues non-election*, and *initial revenues*. All new fiscal variables are expressed as a percentage of the GDP.

As can be seen in Table 4, total revenues do not seem to affect re-election chances in any of our estimations.[22] On the contrary, in columns 1 to 3 we observe that, except for the case of the first year during the term in office, with the variable *initial surplus*, budget surplus/deficit is rewarded/punished by the voters at the polls. In particular, a decrease of 1 percentage point in s*urplus term* (*surplus non-election*) leads to a decrease of about 2.8 (4.2) percentage points in the chances of re-election. In addition, it seems that election year deficits have an even stronger effect on the probability of re-election. We find that a decrease of 1 percentage point in *surplus deviation* can decrease re-election chances by 7.8 percentage points. Based on the full specification of the government budget constraint we have implemented, this implies that, if the incumbent increases the budget deficit around elections via current expenditures, this will decrease the chances of re-election by 7.8 percentage points. These findings are corroborated by the study of Brender and Drazen (2008), in which the well-informed voters in these developed democracies consider deficit creation as harmful for the economy and react even more negatively if deficit is perceived as electorally motivated. Regarding the impact of capital expenditures on re-election prospects, the results obtained in Table 4 are in line with those depicted in Table 1.

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[21] For details see pp. 174-175 of their paper.
[22] It should be noted that qualitative results remain essentially the same after dropping *revenues* from our regressions.

Table 4 here

Next, in columns 3 to 6, we observe that election year deficits seem to decrease the probability of re-election by 7.5 percentage points. Given that we control for the composition of expenditures, this means that voters punish deficit creation around elections, even when it is financed by equal proportions of public investment and consumption expenditures. It is logical to assume that, although an incumbent may promote current and capital spending equally around elections, given that it takes time for investment expenditures to be materialized, in the short run, voters can only observe consumption spending, and so they punish this manipulation. At the same time, in contrast with Brender and Drazen (2008), in columns 4 to 6, it seems that deficits over the term in office and preceding the election year have no impact on re-election prospects. This happens because voters can observe the overall public investment component of the expansionary fiscal policy during the term in office, and so the deficit creation is not considered harmful for the economy, as in the case in which the deficit was financed exclusively by consumption expenditures. Hence, it seems that voters do not act as fiscal conservatives to penalize deficit creation when incumbents promote capital spending, which has long-lasting effects on prosperity and economic growth. Finally, regarding the effect of the composition of expenditures on re-election prospects, the qualitative results presented in Table 4 remain essentially the same as those depicted in Table 1.

4. Conclusions

This paper aims to investigate whether electoral manipulation of the level and the composition of fiscal policy can affect re-election prospects. Regarding the non-fiscal variables, we find that inflation and the policies implemented in order to comply with the Maastricht treaty are negatively related to re-election prospects. Moreover, centre-oriented incumbents face a lower re-election probability. In terms of fiscal variables, we find evidence that re-election prospects improve following a rise in capital expenditures or a shift in expenditures towards capital expenditures during the term in office, while they remain unaffected by manipulation around elections. These results seem to verify Rogoff's (1990) assumption of low visibility of capital spending (e.g., infrastructure), and so, as expected, this manipulation does not affect the re-election probability of the incumbent. Capital expenditures are mostly long-term projects that will increase voters' utility upon completion.

For that reason, capital spending at the beginning of the incumbent's term in office has a positive impact on re-election prospects, since it allows for a sufficient period in order for this spending to be observed by voters before elections. Finally, we have indications similar to those obtained by Brender and Drazen (2008) that voters in developed countries dislike and disfavour at the polls incumbents who create deficits. In contrast, though, voters do not seem to punish deficits during the term in office and preceding the election year, when they are financed by equal proportions of public investment and consumption expenditures. This result is mainly attributed to the positive effect of investment spending on re-election prospects. Near the completion of the term, voters have time to observe the public investment component of expansionary fiscal policy that took place during the term in office and may expect the growth effect of public investment to allow repayment of this deficit without a rise in future taxation.

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Data sources and descriptive statistics

Variable	Obs.	Mean	Std.dev.	Min	Max	Source
re-election	113	0.522	0.502	0	1	"World Statesmen" encyclopedia, "*Inter-Parliamentary Union*" database
capital term	113	2.769	1.397	0.416	6.736	GDNGD
capital deviation	113	-0.103	0.407	-1.409	1.267	GDNGD
capital non-election	113	2.798	1.382	0.382	6.987	GDNGD
initial capital	113	2.801	1.382	0.361	7.068	GDNGD
composition term	113	8.723	5.083	1.800	29.600	GDNGD
composition deviation	113	-0.525	1.210	-6.400	3.400	GDNGD
composition non-election	113	8.875	5.125	1.700	28.800	GDNGD
initial composition	113	8.907	5.025	1.700	28.500	GDNGD
surplus term	112	-4.076	3.831	-14.565	4.874	GDNGD
surplus deviation	112	-0.072	2.446	-9.002	6.390	GDNGD
surplus non-election	112	-4.037	3.874	-12.935	5.403	GDNGD
initial surplus	112	-4.060	4.507	-19.123	9.354	GDNGD
revenues term	113	32.785	8.689	10.249	51.520	GDNGD
revenues deviation	113	0.032	1.684	-8.483	5.144	GDNGD
revenues non-election	113	32.781	8.735	10.557	51.692	GDNGD
initial revenues	113	32.635	8.557	11.527	52.517	GDNGD
inflation term	113	8.310	8.104	0.284	61.150	WDI
growth term	113	2.722	1.617	-1.019	8.832	WDI
unemployment term	113	7.036	4.34	0.397	23.095	OECD Labour Force Statistics
illiteracy term	113	4.266	6.247	0.100	34.300	Barro and Lee (2010)
centre	113	0.168	0.375	0	1	Armingeon, K., et. al. (2008). Comparative Political Data Set I
left	113	0.292	0.456	0	1	Armingeon, K., et. al. (2008). Comparative Political Data Set I
new democracy	113	0.071	0.257	0	1	"*Inter-Parliamentary Union*" database
EU	113	0.142	0.350	0	1	Wikipedia

Table 1. Public investment, composition of expenditures and leader's re-election prospects

Fiscal variable:	(1) capital	(2) capital	(3) capital	(4) composition	(5) composition	(6) composition
Fiscal variable term[1]	0.084** (0.02)	-	-	0.080** (0.02)	-	-
Fiscal variable deviation[2]	-	-0.136 (0.49)	-	-	-0.026 (0.69)	-
Fiscal variable non-election[3]	-	0.095*** (0.01)	-	-	0.027** (0.04)	-
initial Fiscal variable[4]	-	-	0.080** (0.02)	-	-	0.028** (0.04)
growth term	0.054 (0.18)	0.053 (0.21)	0.055 (0.17)	0.045 (0.26)	0.048 (0.26)	0.049 (0.23)
inflation term	-0.072*** (0.00)	-0.071*** (0.00)	-0.071*** (0.00)	-0.077*** (0.00)	-0.077*** (0.00)	-0.076*** (0.00)
unemployment term	-0.027 (0.11)	-0.028 (0.11)	-0.029* (0.08)	-0.024 (0.15)	-0.023 (0.16)	-0.025 (0.13)
new democracy	0.248 (0.15)	0.242 (0.19)	0.244 (0.16)	0.323** (0.05)	0.336** (0.04)	0.329** (0.05)
illiteracy term	0.024** (0.04)	0.024** (0.04)	0.025** (0.04)	0.024** (0.03)	0.023** (0.03)	0.024** (0.03)
centre	-0.404*** (0.00)	-0.416*** (0.00)	-0.402*** (0.00)	-0.382*** (0.00)	-0.394*** (0.00)	-0.385*** (0.00)
left	0.140 (0.22)	0.143 (0.18)	0.138 (0.22)	0.142 (0.23)	0.144 (0.21)	0.141 (0.23)
EU	-0.358*** (0.01)	-0.359** (0.01)	-0.358*** (0.01)	-0.364*** (0.00)	-0.357*** (0.01)	-0.358*** (0.01)
N	113	113	113	113	113	113
pseudo R^2	0.276	0.285	0.275	0.276	0.281	0.274
Log likelihood	-56.607	-55.927	-56.733	-56.610	-56.255	-56.804
L-R test (p-value)	0.19	0.26	0.21	0.21	0.25	0.22
Corrected predications (%)	75.22	78.67	75.22	76.99	76.99	76.11

Notes: Probit estimate coefficients for continuous variable are marginal probability effects computed at sample mean. For dummy variables the marginal effect shows the change in the dependent variable when the value of the dummy variable changes from 0 to 1. In parenthesis we report the p-values based on robust and clustered standard errors. *** denotes significance at 1% level, ** denotes significance at 5% level and * denotes significance at 10% level.

[1] **Fiscal variable term:** the average of the fiscal variable during the leader's current term in the office (excluding the election year of previous elections, but including the election year of current elections).

[2] **Fiscal variable deviation:** the change in the fiscal variable in the election year relative to the average of the years preceding elections. (excluding the election year of previous elections).

[3] **Fiscal variable non-election:** the average in the fiscal variable during the leader's term in the office preceding the election year (excluding the election year of previous elections).

[4] **initial Fiscal variable:** fiscal variable as a percentage of GDP of the leader's first year during the term in office (we do not consider in the term the election year of previous elections)

Table 2a. Public investment, composition of expenditures and leader's re-election prospects in predetermined elections

Fiscal variable:	(1) capital	(2) capital	(3) capital	(4) composition	(5) composition	(6) composition
Fiscal variable term[1]	0.140***	-	-	0.037**	-	-
	(0.01)			(0.01)		
Fiscal variable deviation[2]	-	0.130	-	-	0.040	-
		(0.51)			(0.56)	
Fiscal variable non-election[3]	-	0.138***	-	-	0.038**	-
		(0.01)			(0.01)	
initial Fiscal variable[4]	-	-	0.125**	-	-	0.034**
			(0.03)			(0.01)
growth term	0.076	0.077	0.080	0.067	0.065	0.072
	(0.16)	(0.14)	(0.14)	(0.20)	(0.23)	(0.17)
inflation term	-0.109***	-0.111***	-0.111***	-0.118***	-0.119***	-0.119***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
unemployment term	-0.033	-0.032	-0.038*	-0.035*	-0.035*	-0.038*
	(0.11)	(0.14)	(0.06)	(0.08)	(0.09)	(0.06)
new democracy	-	-	-	-	-	-
illiteracy term	0.025	0.025	0.030*	0.033**	0.034**	0.035**
	(0.20)	(0.21)	(0.09)	(0.04)	(0.04)	(0.02)
centre	-0.397***	-0.394***	-0.391***	-0.360***	-0.355***	-0.365***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
left	0.113	0.097	0.107	0.094	0.082	0.090
	(0.48)	(0.53)	(0.47)	(0.56)	(0.60)	(0.55)
EU	-0.348***	-0.347***	-0.359***	-0.351***	-0.355***	-0.358***
	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
N	68	68	68	68	68	68
pseudo R^2	0.336	0.338	0.330	0.324	0.327	0.322
Log likelihood	-31.301	-31.179	-31.575	-31.838	-31.722	-31.923
L-R test (p-value)	1.00	1.00	1.00	1.00	1.00	1.00
Corrected predications (%)	80.88	77.94	79.41	76.47	77.94	77.94

Notes: see Table 1

Table 2b. Public investment, composition of expenditures re-election prospects under alternative timing specification

Fiscal variable:	(1) capital	(2) capital	(3) composition	(4) composition
Fiscal variable term[1]	0.097**	-	0.026*	-
	(0.03)		(0.06)	
Fiscal variable deviation[2]	-	-0.017	-	-0.003
		(0.91)		(0.94)
Fiscal variable non-election[3]	-	0.103**	-	0.028*
		(0.02)		(0.07)
growth term	0.046	0.047	0.037	0.039
	(0.35)	(0.34)	(0.43)	(0.42)
inflation term	-0.078***	-0.077***	-0.081***	-0.082***
	(0.00)	(0.00)	(0.00)	(0.00)
unemployment term	-0.026	-0.026	-0.025	-0.025
	(0.22)	(0.23)	(0.20)	(0.22)
new democracy	0.236	0.227	0.332*	0.337**
	(0.16)	(0.19)	(0.05)	(0.04)
illiteracy term	0.022	0.021	0.025*	0.024*
	(0.13)	(0.15)	(0.05)	(0.07)
centre	-0.428***	-0.430***	-0.397***	-0.402***
	(0.00)	(0.00)	(0.00)	(0.00)
left	0.090	0.092	0.089	0.092
	(0.47)	(0.44)	(0.49)	(0.46)
EU	-0.361***	-0.361***	-0.365***	-0.362***
	(0.01)	(0.01)	(0.00)	(0.01)
N	107	107	107	107
pseudo R^2	0.292	0.294	0.287	0.289
Log likelihood	-52.489	-52.325	-52.876	-52.677
L-R test (p-value)	0.31	0.32	0.29	0.28
Corrected predications (%)	74.77	76.64	76.64	75.70

Notes: Probit estimate coefficients for continuous variable are marginal probability effects computed at sample mean. For dummy variables the marginal effects shows the change in the dependent variable when the value of the dummy variable changes from 0 to 1. In parenthesis we report the p-values based on robust and clustered standard errors. *** denotes significance at 1% level, ** denotes significance at 5% level and * denotes significance at 10% level.
[1] **Fiscal variable term:** the average of the fiscal variable during the party's current term in the office (excluding the election year of previous elections, but including the election year of current elections).
[2] **Fiscal variable deviation:** the change in the fiscal variable in the election year (the previous year if election took place in the first half of the year) relative to the average of the years preceding elections. (excluding the election year of previous elections).
[3] **Fiscal variable non-election:** the average in the fiscal variable during the party's term in the office preceding the election year (excluding the election year of previous elections).

Table 3. Public investment, composition of expenditures and leader's re-election prospects of single party incumbents

Fiscal variable:	(1) capital	(2) capital	(3) capital	(4) composition	(5) composition	(6) composition
Fiscal variable term[1]	0.143** (0.01)	-	-	0.032* (0.07)	-	-
Fiscal variable deviation[2]	-	0.016 (0.96)	-	-	0.028 (0.77)	-
Fiscal variable non-election[3]	-	0.149*** (0.01)	-	-	0.034* (0.06)	-
initial Fiscal variable[4]	-	-	0.134** (0.02)	-	-	0.028* (0.08)
growth term	0.046 (0.41)	0.046 (0.41)	0.050 (0.36)	0.036 (0.54)	0.034 (0.58)	0.042 (0.47)
inflation term	-0.061*** (0.01)	-0.061*** (0.01)	-0.058** (0.01)	-0.058*** (0.01)	-0.060*** (0.01)	-0.055** (0.02)
unemployment term	0.000 (0.99)	0.000 (0.99)	-0.002 (0.95)	0.004 (0.87)	0.005 (0.86)	0.002 (0.93)
new democracy	-0.136 (0.72)	-0.145 (0.70)	-0.161 (0.65)	0.085 (0.77)	0.086 (0.76)	0.084 (0.77)
illiteracy term	0.025** (0.04)	0.026** (0.04)	0.027** (0.02)	0.022** (0.02)	0.022** (0.03)	0.023** (0.01)
centre	-	-	-	-	-	-
left	0.192 (0.16)	0.187 (0.17)	0.188 (0.16)	0.240* (0.06)	0.239* (0.07)	0.235* (0.06)
EU	-0.638*** (0.00)	-0.644*** (0.00)	-0.638*** (0.00)	-0.580** (0.01)	-0.586** (0.01)	-0.566** (0.03)
N	50	50	50	50	50	50
pseudo R^2	0.208	0.211	0.199	0.194	0.197	0.187
Log likelihood	-26.311	-26.196	-26.588	-26.767	-26.649	-26.989
L-R test (p-value)	1.00	1.00	1.00	1.00	1.00	1.00
Corrected predications (%)	72.00	72.00	72.00	74.00	74.00	74.00

Notes: see Table 1

Table 4. Full specification of the budget constraint and leader's re-election prospects

Fiscal variable:	(1) capital	(2) capital	(3) capital	(4) composition	(5) composition	(6) composition
Fiscal variable term	0.118*** (0.01)	-	-	0.030** (0.01)	-	-
surplus term	0.028* (0.07)	-	-	0.020 (0.19)	-	-
revenues term	-0.004 (0.58)	-	-	0.004 (0.45)	-	-
Fiscal variable deviation[2]	-	-0.146 (0.53)	-	-	-0.047 (0.48)	-
Fiscal variable non-election[3]	-	0.173*** (0.00)	-	-	0.039*** (0.01)	-
surplus deviation	-	0.078** (0.04)	-	-	0.075** (0.02)	-
surplus non-election	-	0.042** (0.02)	-	-	0.028 (0.12)	-
revenues deviation	-	-0.010 (0.81)	-	-	-0.012 (0.71)	-
revenues non-election	-	-0.006 (0.28)	-	-	0.005 (0.35)	-
initial Fiscal variable[4]	-	-	0.091** (0.04)	-	-	0.025* (0.06)
initial surplus	-	-	0.002 (0.88)	-	-	-0.004 (0.82)
initial revenues	-	-	-0.005 (0.50)	-	-	0.002 (0.73)
growth term	0.037 (0.40)	-0.007 (0.90)	0.050 (0.22)	0.039 (0.37)	0.004 (0.95)	0.051 (0.21)
inflation term	-0.070*** (0.00)	-0.068*** (0.00)	-0.074*** (0.00)	-0.073*** (0.00)	-0.073*** (0.00)	-0.076*** (0.00)
unemployment term	-0.017 (0.41)	-0.013 (0.57)	-0.029 (0.12)	-0.016 (0.45)	-0.013 (0.59)	-0.028 (0.15)
new democracy	0.325** (0.02)	0.342* (0.07)	0.265 (0.13)	0.387*** (0.00)	0.425*** (0.01)	0.320* (0.06)
illiteracy term	0.020* (0.08)	0.022 (0.12)	0.024* (0.05)	0.021* (0.06)	0.025* (0.06)	0.024** (0.05)
Centre	-0.407*** (0.00)	-0.382*** (0.01)	-0.387*** (0.00)	-0.396*** (0.00)	-0.359** (0.01)	-0.382*** (0.00)
left	0.121 (0.31)	0.146 (0.21)	0.139 (0.23)	0.118 (0.32)	0.147 (0.22)	0.137 (0.24)
EU	-0.342** (0.02)	-0.452*** (0.00)	-0.339** (0.02)	-0.351** (0.01)	-0.457*** (0.00)	-0.345** (0.01)
N	112	112	112	112	112	112
pseudo R^2	0.287	0.327	0.274	0.282	0.317	0.272
Log likelihood	-55.233	-52.121	-56.246	-55.609	-52.952	-56.422
L-R test (p-value)	0.33	0.50	0.22	0.27	0.38	0.18
Corrected predications (%)	77.68	78.57	75.89	78.57	79.46	75.89

Notes: see Table 1