

**Politically driven cycles in fiscal policy:  
In depth analysis of the functional components of government expenditures**

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**Abstract**

This article analyses the incidence of politically driven cycles on the functional components and sub-components of government expenditures over a group of 18 European countries during the period 1990-2012. An LSDVC estimator is employed in the empirical analysis. The results provide evidence of political opportunism at aggregated and disaggregated levels of public expenditures .. The expenditure components that have proved to be more related to that behaviour are public services, education, social protection and some sub-components of health expenditure, items that tend to generate outcomes that are more visible to voters. Some disaggregated evidence of partisan manipulation is also found.

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## **1. Introduction**

Two commonly held beliefs are that macroeconomic conditions are a relevant determinant of election results, and that governments prefer to stay in office rather than out of it. As a result one should also consider that governments' economic policies are determined by both economic and political considerations. Over the years a significant body of economic and political literature has tried to analyze voters and governments' behaviour in order to unveil the exact nature of the relationship between politics and the economy.

This paper explores the political determinants of fiscal policy choices. If cutting taxes and entering on a sort of spending frenzy can bring electoral advantages to politicians, then they will actually do it, or at least try to do it. This and other more sophisticated assumptions are put to the test by a vast literature, but in general, an inherent weakness of a significant portion of these studies is that they rely on highly aggregated data, namely total expenditures, total revenues, current expenditures, capital expenditures or public deficits. With this type of data nothing can be said about the way governments allocate their expenditures inside those broad aggregates, hence, the picture researchers are getting is hazy. Assuming that governments actually increase spending in election years, we might immediately ask: in what areas are they spending more? Which components are preferred? Probably not all expenditure components are increased because we know that between buying more submarines or increasing the wages of public servants there is a difference in terms of the electoral output that is generated by each choice. Furthermore, finding evidence (or not) of political manipulations in total expenditures, total revenues or public deficits does not assure similar conclusions when checking inside these big aggregates. This means that the exploration of political cycles on the sub-levels of government expenditures is empirically relevant and can provide a better understanding of the subject. Moreover, by analyzing the vast range of expenditures that are at the disposal of governments, we are put a step closer to the reality of fiscal choices and policies.

Only a few papers have looked, in the political perspective, to where and how the main components of public expenditures and revenues are allocated (see, for instance:

Potrafke, 2010; Katsimi and Sarantides, 2012; Enkelman and Leibrecht, 2013; Morozoumi et al., 2014; and Castro and Martins, 2016). In this paper we go as far and as deep as the available data allows us to analyse whether electoral motives and government ideology can be observed at deeper disaggregated levels of public expenditures in a set of developed countries. This also allows us to investigate if there are redistribution of expenditures within each component, as some areas that are less important electorally may actually display a loss in expenditures during electoral years due to the need that opportunistic governments have to reinforce spending in areas that are more effective for gathering votes. This hypothesis is coherent with the moral hazard approach to political budget cycles (Persson and Tabellini, 2000; Shi and Svensson, 2002a). The assumption here is that the government can exert an almost hidden effort, in the sense that, by redistributing expenditures from areas to which people pay less attention to others that they are more aware, they are effectively trying to signal competence. Hence, using data for 18 European countries over the period 1990-2012, we test for the presence of those effects in the functional components and sub-components of public expenditures. This represents an important step forward relatively to the previous literature, as it allows us to identify (and understand) which items inside the main components of public expenditure are indeed being (or not) politically manipulated by incumbents. A comparison between some sub-groups of countries is also provided.

An LSDVC estimator is used in the empirical analysis and the results point out to the presence of political opportunism at the aggregated and disaggregated levels of public expenditures, but no significant evidence of partisan or other political effects is found. The expenditure components that have proved to be more related to that behaviour are public services, education, social protection and some sub-components of health expenditure. These are expenditure components that include items that tend to generate more visible outcomes to voters, which might justify why they are preferred. Hence, a more disaggregated analysis is provided as a way of identifying those components and clarifying that issue.

This article is organized as follows. Section 2 presents a brief review of the relevant literature. Section 3 describes the data and the econometric model. The results are shown and discussed in section 4. Robustness checks are provided in section 5 and section 6 concludes.

## **2. Literature review**

The political business cycles and partisan theories explain how governments affect macroeconomic outcomes. The political business cycles theories are divided into models that assume agents with adaptive expectations (Nordhaus, 1975) and more recent models that adopt rational expectations (Rogoff and Sibert, 1988; and Rogoff, 1990). The main implication of these theories is that all politicians implement expansionary policies before elections with the objective of maximizing their electoral support and after the elections contractionary measures are required to correct the artificial unbalance generated previously. However, the assumption of rational agents tends to reduce this ability of policymakers to induce the political cycle. Empirical studies suggest that favourable economic conditions benefit governments (Hibbs, 2006) but the issue of where and whether opportunistic behaviour exists is still open to debate among scholars. On the one hand, some argue that political business cycles are a phenomenon more present in developing countries and younger democracies (see, for instance, Shi and Svensson, 2006; Brender and Drazen, 2008; and Vergne, 2009). On the other hand, De Haan and Klomp (2013) examining the literature that deals with electoral fiscal policy manipulation consider that there is substantial evidence of political budget cycles in established democracies, although pointing out that “in younger democracies the political budget cycle is more likely to occur and is more likely to be stronger than in more mature democracies.”

Alternatively, both the adaptive (Hibbs, 1977) and rational (Alesina, 1987; Alesina and Sachs, 1988) versions of the partisan theory view politicians as heterogeneous, arguing that different parties have different policy objectives, behaving, when in office, in a partisan manner. Specifically, left-wing parties are relatively more concerned with unemployment (growth) than with inflation, whereas right-wing parties are especially worried with inflation

control. In general, empirical evidence points out that partisan behaviour seems to be more recurrent in developed countries (see Alesina et al., 1992, 1997).

The aim of this paper is to test for the presence of politically motivated cycles in the components of public expenditures. Governments' fiscal policy has been an important topic in the political and economic literature. Hence, the extension of the traditional approaches to fiscal policy is straightforward: boosts in expenditures and/or revenue reductions prior to elections should signal opportunistic behaviour, while in the partisan perspective left-wing governments are more prone to budget deficits than their counterparts. Rogoff and Sibert's (1988) seminal model of political budgetary cycles is an adverse selection model underlining competence and asymmetric information. A further refinement made by Rogoff (1990) highlighted the need to search budgetary cycles inside the broad aggregates, especially in the composition of government spending. The model considered that the most efficient way for governments to signal competence is to divert spending from capital spending to current spending, thus favouring transfers and more visible programs. The idea is to increase those expenditures that send the strongest competence signals to the electorate and preferably those that are also noticeable immediately.

Both at national and multi-national level, empirical studies show evidence of political fiscal policy manipulation. Shi and Svensson (2002a, b; 2006), using multi-country data, captures political budget cycles and show that the effect is significantly stronger in less developed countries. For a set of developed countries, Persson and Tabellini (2003) find a political revenue cycle but not a political cycle in expenditures, budget or transfers. Focusing on EU countries, Andrikopoulos et al. (2004) also do not find a fiscal electoral cycle. However, Mink and de Haan (2006) report a budget deficit increase in electoral years in EU members and that left governments are more prone to deficits than their counterparts. Efthyvoulou (2012) also concludes that governments across the EU tend to generate budgetary opportunistic cycles, but that these tend to be larger in the Eurozone countries.

In this paper, we go inside the main budget aggregates and analyze whether political motives can be observed at deeper levels of European countries' public expenditures.

Akhmedov and Zhuravskaya (2004), Veiga and Veiga (2007), Drazen and Eslava (2010), Aidt et al. (2011) and Sakurai and Menezes-Filho (2011) found political opportunism at aggregated and disaggregated levels of public expenditures in Russia, Portugal, Colombia and Brazil, but restricted to the local/municipal level of government.<sup>1</sup>

At the national level, the results found by Blais and Nadeau (1992) for Canadian regions suggest a short pre-electoral cycle on road expenditures and social services. Also considering an economic decomposition of public expenditures, Katsimi and Sarantides (2012) and Morozoumi et al. (2014) show that elections shift public spending towards current expenditures at the cost of public investment using a panel of countries. Brender and Drazen (2013) also disaggregate public spending but building a composite index, which does not allow us to identify what spending components are affected and how in election years.

Looking at functional components of public expenditures, Potrafke (2010) finds that incumbents increase the growth of public health expenditures in election years, while Enkelman and Leibrecht (2013) conclude that election cycles are mainly found in the new democracies of Eastern Europe and in categories such as social welfare, general public services, environmental protection and infrastructures. Finally, Castro and Martins (2016) found political opportunism in health, social welfare and general public services when analysing Portuguese public expenditures.

In this paper, we take a step forward in the analysis of politically driven cycles by looking for their presence in a panel of European countries at the level of the functional components of government expenditures and, most importantly, at the deeper level of their sub-components. The exploration of political cycles in the sub-levels of government expenditures is expected to provide a better understanding of the politically motivated cycles. As far as we know, no other study has dig so deep inside public expenditures to unveil the hidden complexity of politically driven cycles. Furthermore, by analyzing the vast

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<sup>1</sup> In particular, Akhmedov and Zhuravskaya (2004), Veiga and Veiga (2007) and Drazen and Eslava (2010) provide evidence of a strategic opportunistic behaviour in the composition of local/municipal (investment) expenditures, especially in highly visible items to the electorate: infrastructure spending, buildings, roads and general constructions. The evidence of opportunistic budget cycles at the local level as been ample and reinforced by more recent works like for instance Chortareas, et. al. (2016) and Klein and Sakurai (2015).

range of expenditure components at the disposal of governments, we can become more aware of the reality of fiscal choices and public policies.

### 3. Data and model specification

To explore the presence of opportunism and partisan effects in the composition of government expenditures, we collected annual data for 18 European countries over the period 1990-2012.<sup>2</sup> These data were obtained from the Eurostat Database.

The analysis developed in this study is based on a break-down of government expenditures as defined by the OECD in its Classification of the Functions of the Government (COFOG).<sup>3</sup> It classifies government expenditure data from the System of National Accounts by the purpose for which the funds are used, also called functional decomposition. This data measures the general governments' expenditures. Ideally, as De Haan et al. (1999) argue, we are better off using data for the Central Government as it relates to those expenditures that are directly controlled by government ministers. However, as far as we are concerned there is no data by functions available for the Central Government. Therefore, we assume that incumbents can control effectively both direct and indirect expenditures. The first-level of this classification splits public expenditures into ten functional components: (i) general public services; (ii) defence; (iii) public order and safety; (iv) economic affairs; (v) environmental protection; (vi) housing and community amenities; (vii) health; (viii) recreation, culture and religion; (ix) education; (x) social protection. The second-level disaggregates each first-level group into up to nine sub-components. The total general government expenditures (*TotExpd*) and each of those ten components (and respective sub-components) are used as dependent variables in this analysis.<sup>4</sup>

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<sup>2</sup> The countries used in this study are: Austria (1995-2012), Belgium (1990-2012), Denmark (1990-2012), Finland (1990-2012), France (1995-2012), Germany (1991-2012), Greece (1990-2012), Iceland (1998-2012), Ireland (1990-2012), Italy (1990-2012), Luxembourg (1990-2012), Netherlands (1995-2012), Norway (1990-2012), Portugal (1990-2012), Spain (1995-2012), Sweden (1995-2012), Switzerland (2005-2012), United Kingdom (1990-2012).

<sup>3</sup> See, for example, OECD (2015): Government at a Glance.

<sup>4</sup> See Table A.1 in Annex for the definition of each component and sub-component.

As starting point for our empirical specification we rely on the standard median voter/taxpayer model typically used by the literature to relate variations of public spending with economic, political and demographic factors (Bergstrom and Goodman 1973; Niskanen 1979). This approach is based on the traditional representative voter/taxpayer's Cobb-Douglas demand function for government goods and services and from this framework researchers have derived a variety of empirical specifications.<sup>5</sup> Mueller (1989) considers that most studies test some variant of the following median voter's demand equation:

$$\ln G = \alpha + \alpha \ln t_m + \beta \ln Y_m + \gamma \ln Z + \mu \quad (1)$$

Where  $G$  is the level of government expenditures, or in other words, the public good to be demanded by the median voter; the price of the good is  $t_m$  measured as the price of the tax share of the median income voter and  $Y_m$  is the median income of the voter/taxpayer. Finally,  $Z$  is a vector of variables that reflect the tastes of the voter, typically demographic and/or socioeconomic variables<sup>6</sup>. The model assumes that public fiscal conduct aims to reflect the wishes of the median voter, as such much attention has been paid to crucial demand variables like price and income. In this paper, we take a different perspective and test if the provision of public goods depends not only on demand factors but also on the governments' electoral and ideological agenda. Therefore, our primary focus is the  $Z$  part of the equation where we introduce variables to capture electoral, partisan and political motives behind the variations on public expenditures. To test for the predictions of the opportunistic and partisan theories on the components (and sub-components) of government expenditures we employ the following dynamic panel data model:

$$\begin{aligned} \ln \text{Expd}C_{it} = & \alpha + \gamma \ln \text{Expd}C_{it-1} + \delta_1 \ln \text{GDP}pc_{it} + \delta_2 \ln \text{RelPr}_{it} + \delta_3 \ln \text{Pop}_{it} + \\ & \beta_1 \text{ElectYr}_{it} + \beta_2 \text{LeftGov}_{it} + \beta_3 \text{MajGov}_{it} + v_i + \eta_t + e_{it} \end{aligned} \quad (2)$$

where  $i=1, \dots, 18$ ,  $t=1990, \dots, 2012$  and the natural logarithm of  $\text{Expd}C_{it}$  represents the log of one of the components (or sub-component) of government expenditures. The coefficient on the lag of the dependent variable ( $\gamma$ ) measures its persistence, while the coefficients  $\beta_1, \beta_2, \beta_3$

<sup>5</sup> See, for instance, Tridimas (1992) and Easaw and Garratt (2006).

<sup>6</sup> Tridimas (1992) proposed that the right-side of the equation should also include the relative prices.



measure, respectively, the impact of the opportunistic, partisan and political support effects on the expenditure components. To represent the median voter's income ( $Y$  in the model) we use the real GDP per capita ( $GDPpc$ ); and the relative prices ( $t$  in the model) are approximated by the ratio of the government final consumption deflator to the GDP deflator ( $RelPr$ ). We also introduce the natural logarithm of the total population ( $Pop$ ) to capture demographic effects. Regarding the remaining elements,  $v_i$  is the individual effect of each country  $i$ ,  $\eta_t$  captures the time effects and  $e_{it}$  is the error term.

One way in which our empirical model differentiates from the typical median voter model is by including the lagged dependent variable which consequently turns the  $\delta_i$  coefficients in equation (2) into short-run elasticities. In specifying a dynamic model we are assuming that the level of expenditures desired by the median voter does not correspond immediately to the level of expenditures provided by the government, which means that we have a partial adjustment process. We can think of some public expenditures that are actually obligations like interest payments and social security and others that are fixed like those related to the physical stock and public servants, as such it is reasonable to assume that there may be different rates of adjustments for different expenditure components. We also assume that the public deflator is the same for all expenditure components, as there are no consistent data for each specific unit cost. The set of variables introduced in the model to control for potential opportunistic, partisan and political effects follows Alesina et al. (1997) and represent the following: (i) *ElectYr* is a dummy variable that takes the value of 1 in the year of national legislative elections, and 0 otherwise; (ii) *LeftGov* is a dummy variable that takes the value of 1 when there is hegemony or dominance of left-wing parties in the cabinet, and 0 otherwise; and (iii) *MajGov* is a dummy variable that takes the value of 1 when a single party or coalition has majority in the parliament, and 0 otherwise. The data for these variables were collected from the Comparative Political Data Set I.<sup>7</sup> A complete description of the variables and some descriptive statistics can be found in Tables A.1 and A.2 in Annex.

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<sup>7</sup> *LeftGov* was computed from the *gov\_party* variable in the CPDS database (it is equal to 1 when *gov\_party* is equal to 4 and 5, i.e. when there is dominance or hegemony of left-wing parties). *MajGov* was computed from

Opportunism can be present in any category of expenditures. However, following Rogoff (1990) - and some strong empirical evidence found in the literature (see for instance Blais and Nadeau 1992; Veiga and Veiga 2007) - we consider that those components that are more visible to voters like, for example, public services, health, education and social protection, may be the primary targets for opportunistic manipulations. As to the partisan variable *LeftGov*, we conjecture that the fiscal conservatism of right-wing parties and their greater willingness to deregulate the economy can contrast with the tendency for left governments to increase public spending, particularly in those components related with welfare programs. For instance, Kauder and Potrafke (2013) find that right-wing parties are more willing to mobilise private funds to co-fund higher education. Hence, a positive effect is expected for the variable *LeftGov* especially when it comes to expenditures related with the welfare state. Looking at the descriptive statistics (see Table A.2 in the Annex) we observe that, on average, the total real government expenditures per capita in the group of countries analysed is close to 14 thousand of Euros, while the components in which governments tend to spend more are public services, economic affairs, health, education and social protection. Therefore, we expect that these components might be the ones in which the government has more margin to act politically. This is a hypothesis that we intend to test in our empirical analysis.

Given the presence of individual effects  $v_i$ , the model can be estimated assuming those effects as fixed or random. However, the lagged value of the dependent variable would be correlated with the error term even if the latter is not serially correlated. This implies that OLS estimates (random or fixed effects) will be biased and inconsistent. Although the fixed effects estimator gains consistency as the number of time periods increases, in our analysis its number is not big enough ( $T=23$ ) to rely on its estimates.

The estimators that take into account that bias can be grouped into: (i) instrumental variables estimators; (ii) and bias-corrected estimators. According to the large sample properties of the generalized method of moments (GMM), the dynamic estimator proposed

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the *gov\_type* variable in the CPDS database (it is equal to 1 when *gov\_type* is equal to 1, 2 and 3, i.e. government formed with a party(ies) with a majority of seats in the parliament).

by Arellano and Bond (1991) is adequate when there is a clear dominance of cross sections over time periods in the sample. This is not the case in our panel, in which the cross sectional dimension is small ( $N=18$ ), and about the same as the number of time periods ( $T=23$ ). This means that the dynamic panel data estimator developed by Arellano and Bond (1991) is not the most suitable procedure to solve the problem. More specifically, given our panel structure, it will also be biased if employed to this analysis. Hence, a bias-corrected estimator is more appropriated here. Therefore, we apply Bruno's (2005a, b) bias-corrected least squares dummy variable estimator (LSDVC) for dynamic panel data models with small  $N$  (and not large enough  $T$ ). In the regressions, we employ the Blundell and Bond (1998) estimator as the initial estimator. In this case, the instruments are collapsed as suggested by Roodman (2009), which makes sure that we avoid using invalid or too many instruments. Following Bloom et al. (2007), we undertake 50 repetitions of the procedure to bootstrap the estimated standard errors.<sup>8</sup> The empirical results from panel data analysis using the LSDVC estimator are presented and discussed in the next section.

#### 4. Empirical results

The results from the estimation of political opportunism and partisan effects in the components of public expenditures are reported in Table 1. We start by inspecting whether those effects are present at the aggregated level, i.e. in total general government expenditures. We use the natural logarithm of its real value per capita ( $LnTotExpd$ ) as it allows us to easily and intuitively interpret the results in terms of percentages and mitigate possible heteroscedasticity problems in the error term (Wooldridge, 2013, p. 278).

**[Insert Table 1 around here]**

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<sup>8</sup> Bootstrapping the standard errors is a common practice when this estimator is applied because Monte Carlo simulations proved that the analytical variance estimator performs poorly for large coefficients of the lagged dependent variable (see Bruno, 2005a, b). We should also stress that our results do not qualitatively change with more repetitions (100, 200 or even 500) or when either Arellano and Bond (1991) or Anderson and Hsiao (1982) estimators are used as initial estimators instead.

The results presented in column (1) show that governments increase total public expenditures (per capita) by about 1.2% in election years (*ElectYr*).<sup>9</sup> These results are in line with the findings of other studies focusing on the EU (Mink and de Haan, 2006; and Efthyvoulou, 2012). Nevertheless, no effects are found in terms of government orientation (*LeftGov*) or political support (*MajGov*). Therefore, no matter whether a right-wing or left-wing government is in office, or whether it has a ruling majority or not, the behaviour is always the same: acting opportunistically to increase the chances of winning the elections. Additionally, we also observe that public expenditures are behaving pro-cyclically – contrary to the Keynesian view – as they tend to increase (decrease) when the economic situation improves (deteriorates): for each 1% increase in the GDP per capita, total public expenditures per capita increase by 0.14% in the short-run (hence, the long-run income elasticity will be around 2.1%). This long-run elasticity is significantly larger than one suggesting a more than proportional increase of government expenditures with respect to economic activity, therefore confirming Wagner’s law. The demographic conditions, here measured by the natural logarithm of total population (*LnPop*), have a negative impact on total expenditures per capita. This means that when the population increases (or is bigger), government expenditure has to be divided by more people, hence, expenditure per capita is lower. Finally, no effect is found regarding the relative prices.

Empirical studies using this level of data aggregation on fiscal variables clearly dominate the literature and, most of them, are consistently finding politically driven budgetary cycles. However, their findings do not say how policymakers use public expenditures to generate their expected outcome at the ballots. The results in column (1) do not allow us to figure out which components of public expenditures are being employed opportunistically near the elections. Moreover, they can also not guarantee the complete absence of partisan movements inside the total expenditure aggregate.

Hence, following Rogoff (1990) – who has already highlighted the need to search budgetary cycles inside the broad aggregates, especially in the composition of government

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<sup>9</sup> This represents only the short-run effect. Given the slow speed of adjustment, in the long-run the impact will be much higher: 19.4% ( $=0.012/(1-0.933)$ ).

spending – we consider the ten functional components of government expenditures (as defined by the OECD) to uncover this reality. The results are presented in columns (2)-(11) of Table 1 and clearly indicate that the functional items in which expenditures are increased during elections are public services education and social protection.<sup>10</sup> These are the components in which governments tend to spend more in proportion to the total expenditure (as it is clear in the descriptive statistics – see Table A.2). Hence, the results confirm our hypothesis: the bigger categories of public expenditure are especially targeted by opportunistic governments. The results also seem to conform with the theoretical expectations (except for health expenditure) because of the strong positive signalling to voters and the quick visibility that characterizes these categories. Nevertheless, only the reasons behind the opportunistic boost of public services seem a bit unclear. As this category includes transfers of a general character between different levels of government, it is possible that increased spending in this sub-category may be happening in election years because they may be related to the quick conclusion of infrastructures (at the local or regional level) that can be beneficial to the government's popularity, or to other highly visible items like, for example, the sponsorship of cultural and/or recreational local events.

However, similarly to the findings for total expenditures, no significant effects are found regarding the political orientation and support of the party(ies) in office. Expenditures on environmental protection and education are slightly higher when left-wing governments are in office, but the respective effects are only marginally significant. This means that spending preferences seem to converge across governments, while ideology retires to the background.

When we look at the impact of the controllers, a good economic environment has the expected positive impact in most of the components, and after calculating the long-run elasticities we found that those that are greater than one are observed in health, environment,

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<sup>10</sup> Like for total expenditures, the natural logarithm of each expenditure component is used as dependent variable, which makes its interpretation easier. In particular, during election years, spending in public services per capita is 3.6% higher. Moreover, smoothing the scale of measure of the dependent variable, using logs, can also mitigate possible heteroscedasticity problems in the error term (see Wooldridge, 2013, p. 278).

recreation and especially education, where the long-run income elasticity estimate is close to 4%. As to the coefficient on the log of *RelPr*, it remains insignificant across all estimations. Regarding the demographic scale effect, we find that per capita expenditures on defence, environmental protection, recreation and education per capita decrease with population, probably because these are items in which economies of scale are easier to reach.

Finally, total expenditure and all its components exhibit a reasonable degree of persistence, as the coefficient associated to the respective lagged dependent variables is always highly significant. This evidence supports the use of our dynamic panel framework.

So far the results give some insights as to which components are being exploited electorally. However they also raise some interesting questions. First, what is exactly being manipulated by governments in those categories that exhibit a PBC? Second, the lack of a PBC in the health category is at odds with theoretical expectations and with most empirical evidence (see, for instance, Potrafke, 2010 and Castro and Martins, 2016). Third, the almost absence of partisan effects found so far is a puzzling result. Education, particularly expenditures related to mandatory schooling, the social protection of the unemployed and of those socially excluded for example, culture, health and other areas are normally seen as focus of special attention by left governments. Finally, besides the abnormal growth of expenditures in electoral years reported in column (1) and in other columns of the previous table, there may be also some redistribution of expenditures within each component. Some areas less important electorally may actually display a decrease in spending, allowing opportunistic governments to reinforce other areas that are electorally more effective. This hypothesis is coherent with the moral hazard approach to political budget cycles (Persson and Tabellini, 2000; Shi and Svensson, 2002a) as the assumption here is that the government can exert an almost hidden effort to effectively signal competence, in the sense that it redistributes expenditures from areas to which people pay less attention to others they are more aware of.. To investigate this questions that remained from the analysis of table 1, we collected data on items or sub-components of each component of public expenditures available from the Eurostat database, even though they present a shorter time span (1995-

2012) than the previous data and also some missing data for a few countries/components. Even so, we ended up with reasonably good sets of panel data for each sub-component, which allows us to proceed with a more fine-tuned analysis. The division into the 10 major components, discussed in table 1, can be seen as representing the broad objectives of the governments and the analysis of the sub-components will help us to detail the means by which those objectives are achieved (i.e. to get closer to the actual policies). The results are presented in Tables 2 and 3. The structure of the model used in these estimations is identical to the analysis for the first-level components, in the sense that each equation is related to the respective sub-component and estimated using the LSDVC estimator over the same political variables and controllers.

**[Insert Table 2 around here]**

**[Insert Table 3 around here]**

Overall, with this more disaggregated data we now find the expected PBC in some of health's sub-components, and also get substantially more partisan effects which are in line with theoretical expectations. The evidence supporting the idea that there may be a redistribution of expenditures to signal competence is observed, but it is found to be weak.

A primary interest regarding these results is to see the origin of public services' electoral importance. Both Enkelman and Leibrecht (2013) and Castro and Martins (2016) find it to be strongly significant. Unfortunately, data on transfers of a general character between different levels of government (*TransfGen*) are missing or of poor quality for most countries, which made it impossible to test our earlier hypothesis. Available results show that the only statistically relevant sub-component is expenditures on executive and legislative organs, financial and fiscal affairs and external affairs (*ExecAff*) and that opportunism is the only effect found. When we look at the expenditures lodged in this sub-item (see Eurostat, 2011), we conjecture that the management costs of public funds and public debt may be increasing in electoral years. That might be the case, not just because this sub-item is associated with the ability to increase spending in other categories but also because the Eurostat states that the interests connected to delayed debt payments are often

included in this sub-category. Debt payments in electoral years are probably not in the best interest of opportunistic governments as they tend to divert resources from electorally efficient spending. Another source of extra spending in this sub-category is related to physical amenities provided to the chief executive, the legislature and their aides, and to commissions and committees created by the chief executive. Normally politics intensifies in electoral years, so one should expect to see an increase in those expenditures, although, *per se*, they probably cannot account for a political cycle, more so because they may or may not be electorally driven.

For the controllers the results are in line with the ones obtained in the *PubServ* equation in Table 1, but here we can observe the expected positive impact of *LnGDPpc* on some items of *PubServ*.

Regarding the sub-components of expenditures on defence, the results indicate no presence of opportunistic, partisan or political support effects in any of them, which is in line with the findings reported in Table 1 for defence. However, when we look at the results for public order and economic affairs we are faced with two interesting surprises: even though no evidence of opportunism is found for each of those components, when we dig deeper we find that expenditures in police services (*Police*, in public order) and in agriculture, forestry, fishing and hunting (*Agric* in Economic Affairs) are significantly increased during election years (2.3% in the first sub-item and 5.8% in the second). Probably governments want to reinforce their popularity within the workforce of these sectors and also with the increased spending on police they want to signal competence and increase the voters' sympathy towards them by assuring more general safety in election years. Despite left governments are likely to spend more in some economic affairs items, no other political effects are found and the signs and significance of the coefficients on the controllers are, in general, consistent with the ones reported in Table 1 for each of those two components.

Regarding environmental protection items, there is some weak evidence that governments tend to spend less on waste water management and protection of biodiversity and landscape prior to the elections, maybe to divert funds to other items that more useful to



increase their chances of re-election thus supporting the idea that there may be a redistribution of expenditures to signal competence. Additionally, left governments seem to be more concerned with a few items inside this component (*Protect* and *OthEnvir*). On the contrary, no relevant electoral or ideological effects are found concerning housing and community amenities (see Table 3).

With this more disaggregated data we find the expected PBC in some of health's sub-components and also some partisan effects despite no evidence is found for the component itself. Electoral manipulation can be seen in per capita expenditures in medical products, appliances and equipment (*MedProd*), hospital services (*HospServ*) and research and development in health (*HlthRD*). The strategy of providing better health care to the populations in election years is consistent with political opportunism as it can improve governments' popularity in all segments of the voting population. Additionally, we also find some partisan effects: left-wing governments spend more on research and development in health (*HlthRD*) than centre or right-wing parties. Although these partisan results conform to the theoretical expectations, we should note that the regression for the component itself did not show any sign of opportunism or partisanship (see Table 1). It is only when we dig deeper in the analysis of its sub-components that we realise the real importance of the political opportunism and can extract some partisan effects. Taking into account not only the case of health expenditures, but also public order, economic affairs and environmental protection (analysed above), it seems that some of the more aggregated data conceals the political manipulation of public expenditures. It is only when we look "under the microscope" that we really become aware of some important aspects of government's behaviour regarding fiscal policy.

Recreation remains a component in which no significant political effects are found, even after disaggregating further, with the one exception that left-wing governments are more prone to spend more on culture. On the contrary, for education and social protection we have some interesting results. First, it has become clear that most of the opportunism on expenditures in education is related to an increase in pre-primary and primary education

(*Prim*) during election years. This is the basis of all educational system and voters tend to take a special attention and be very concerned with the quality of education of their young children (qualification of the teachers, infrastructures, materials,...). Second, some partisan effects are found for primary (*Prim*), secondary (*Second*) and general education expenditures not defined by level (*Genr*), sub-components of education in which left-wing governments tend to spend more. Third, our results also point out that majority governments are more prone than minority ones to cut expenditures at higher levels of education (*Tert*).

Another universally accepted “good” policy that tends to provide dividends at the ballots is to improve the protection of the sick and of those with disabilities. Our results show that these expenditures are higher during election periods (*SickDis* in social protection). Despite no significant opportunism is found in unemployment protection (*UnemPrt*), our results indicate that they tend to decrease when GDP per capita rises. This makes sense, as unemployment decreases when the economic activity boosts.

Apart from these findings, no other relevant results are found. Nevertheless, we should stress that the lack of information for some countries in some sub-components and the shorter time period might affect the quality of the results in comparison with the ones obtained for the main components. However, the results for the sub-components are, in general, qualitatively, quantitatively and statistically consistent with the ones for the respective components of public expenditures. Most importantly, they provide a rich set of outcomes that help us get a clearer view of where the political manipulation of expenditures actually happens. Undoubtedly, this analysis for the sub-components of public expenditures provides finer details about the way policy-makers try to maximize their chances of re-election that otherwise might remain hidden.

## **5. Robustness checks**

To check the robustness of our results we separate the analysis into three blocks or sub-groups of countries. The first sub-group is formed by Nordic countries (Denmark, Finland, Iceland, Norway and Sweden). These are considered to have well established

democracies, with a long tradition and have the reputation of being more concerned in keeping public accounts balanced. On the opposite side – not only geographically – we have the Southern European countries (Greece, Italy, Portugal and Spain), which are characterized by more unstable and younger democracies, that traditionally exhibit more unbalanced public accounts and growing public debts. In the middle, we have the remaining group of Central European countries (Austria, Belgium, France, Germany, Ireland, Luxembourg, Netherlands, Switzerland and the United Kingdom), also with well-established democracies as the Nordic, but with their own specificities and with a different agenda in what concerns to promote balanced public accounts.<sup>11</sup> The idea here is twofold: (i) infer the presence of political opportunism (and possible partisan effects) in each of these three sub-groups; (ii) and emphasize the differences between them.

A first glance at the results reported in Table 4 reveals three interesting aspects. The first is that if we would focus only on the outcomes for total expenditures (column 1) we would conclude that no evidence of political effects is found for the Nordic and Central countries. In fact, majority governments seem to be more prone to environmental and cultural/recreational spending, and some evidence of opportunism is also found in public services for Nordic countries. Political opportunism is also present in this component for Central countries, as well as in health and social protection expenditures. In this group, political orientation also plays an important role in some items of government expenditure (public order, recreation, education and social protection).

Nevertheless, in general, it seems that Nordic and Central countries have been successful in mitigating the electoral effect over total spending – probably with adjustments in some components at the expense of others – while Southern countries do not.

Secondly, the opportunism in general public services is common to all three groups of countries, which reinforces our conclusions. Thirdly, following Brender and Drazen's

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<sup>11</sup> We also considered regressions with only Central European countries that took part in the Euro, to avoid any heterogeneity, but the results remained unchanged (those results are available upon request). Different partitions between EMU and non-EMU countries and before and after the introduction of the Euro are considered in the Annex, but once again the main conclusions of this study do not change and they are even reinforced (see Table A5).

(2005) claim, one would expect that Southern European countries, as younger democracies with a more pronounced history of unbalanced public accounts, might be characterized by a higher degree of political manipulation. However, most of the opportunistic effects inside of the components of public expenditures are found in the more established democracies of central Europe, a result that is supportive of De Haan and Klomp's (2013) conclusion that the PBC is pretty much alive and is not restricted to younger democracies. Also the partisan effects found seem to be exclusive to this subset: left-wing governments are more prone to increase total spending and expenditures in public order, recreation, education and social protection. Nonetheless, one could argue that the near absence of political effects found in the Southern countries is not because governments' do not manipulate budgetary variables but simply because they cannot do it efficiently. These were the countries that faced the hardest challenges to comply with the Maastricht criteria required to join the EMU and are also those that were hit more severely by the recent economic recession that came out of the US sub-prime mortgage crisis. As such, there is a significant amount of time where Southern European countries' budgetary policy and decision making is strongly impaired, reducing the governments' ability to generate fiscal electoral cycles. Finally, in what concerns to the other coefficients (controllers, persistence,...), the results do not change much in comparison with the ones presented in Table 1 for the whole sample.

**[Insert Table 4 around here]**

Similarly to what we did for the sample of all countries, we also tried to check political effects at a deeper disaggregated level (sub-components) for each of these three subsets of countries. Those results are presented in Table 5. Only the estimates for the political variables are reported to save space, but the missing results for the controllers are available upon request.

The results offer a great deal of extra information and in general confirm the findings reported in Table 3 for the sample of all countries. We can highlight some of the information that seems particularly interesting. Expenditures on executive affairs (*ExcAff*) remain as the item of public services in which a more significant rise is felt during election years, and

continues to be common to all three sub-groups of countries. Nordic countries present additional but marginally significant increases in other items like R&D in environmental protection (*EnvirRD*) and street lighting (*StrLight*). On the contrary, our results show that during election periods they cut spending on other public order expenditures (*OthPO*), waste water management (*WastWat*) and housing development (*HousDev*). As we pointed out above, this behaviour might be the reason why political opportunism is not found at the aggregated level: they compensate the rise in one item by decreasing the spending in others. Overall, their strategy might be more of reallocating than of increasing spending.<sup>12</sup>

**[Insert Table 5 around here]**

For Southern European countries no additional opportunism was found but Central European governments have a widespread opportunistic behaviour that involves rises in police spending (*Police*), pollution abatement (*Pollut*), community development (*ComDev*), in all health items, primary school education (*Prim*) and sickness and disability (*SickDis*) in years of elections. These items are almost all related to the components in which political opportunism was identified for this group of countries (see Table 4).

We also did some additional sensitivity analysis to verify if our findings were sensitive to changes in the political variables, in the controllers and to cross effects between the variables (see Tables A.3 and A.4 in the Annex). Specifically, we begin by checking whether governments start to increase expenditures well before the elections year (see top of Table A.3 in the Annex). Thus, we add to the model a dummy that takes the value of one in the year before the elections (*YrBefElect*). The results indicate that governments prefer to act opportunistically in the elections year, and not before. As the time of the year in which the election takes place can be relevant for the timing of the opportunist manipulation of the economy, we also consider an additional pre-election variable measuring the fraction of a year that is within 12 months before an election (*Bef12Elect*). Despite this fine-tuning, our conclusions remain quantitatively and qualitatively unchanged.

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<sup>12</sup> Morozumi et al. (2014) also find a similar behaviour in established democracies, where governments seem to reallocate expenditure and revenue components in election years, keeping their total levels unchanged.

To test for the presence of a full or complete opportunistic cycle, we then replace the election variable by a dummy that takes the value of one in the year after the elections, and 0 otherwise (*YrAftElect*). Apart from defence and economic affairs, the coefficients on *YrAftElect* are all negative (in contrast to the positive ones on *ElectYr*), supporting the post-electoral predictions of opportunistic models and the results found by Castro and Martins (2016). However, we only find some weak significance for the coefficient on education.

Next, instead of using dummies to control for the electoral period, we employ a variable that controls for the timing of the elections by measuring the proportion of time that has elapsed since the last election, i.e. it measures the proportion of time a government is in office in a particular year, since it has been elected (*ElectTiming*).<sup>13</sup> The results remain consistent with the ones discussed above and with the ones reported in Table 1.

Although with the previous changes no significant partisan or political support effects are found, we replaced the dummy variable *LeftGov* by a set of four dummies that act like a kind of fine-tuning for the partisan effects (see Table A.4): *Partisan1* (dummy variable that takes the value of one when there is hegemony of right-wing and centre parties in office); *Partisan2* (dummy variable that takes the value of one when there is dominance of right-wing and centre parties in office); *Partisan3* (dummy variable that takes the value of one when there is balance of power between left and right-wing parties in office); and *Partisan4* (dummy variable that takes the value of one when there is dominance of social-democratic and other left parties in office).<sup>14</sup> In general the partisan effects found are weak and no clear (or significant) trends are identified; moreover, no significant effects are observed at the aggregated level (total spending).<sup>15</sup>

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<sup>13</sup> It is equal to 1 in the election year.

<sup>14</sup> The base category is *Partisan5* which refers to those governments in which there is hegemony of social-democratic and other left-wing parties. Like the *LeftGov* variable, those five partisan dummies were computed from the variable *gov\_party* in the CPDS database.

<sup>15</sup> We also replaced *MajGov* by *GovSup>50%*, which corresponds to a dummy that takes value of one when the seat share of all parties in government is higher than 50% (in this case, weighted by the numbers of days in office in a given year), however, no significant effects are found. Additionally, in line with the studies by Roubini and Sachs (1989a,b), De Haan and Sturm (1997) and De Haan et al. (1999), we also analysed the role

Different controllers to our models are also tested (second block of results in Table A.4). Replacing *LnGDPpc* by the unemployment rate (*Unemp*) and *LnPop* by the percentage of people in total population with age lower than 15 (*Young*) and with 65 and over (*Elderly*). Qualitatively the main conclusions of this study are not affected with the use of these proxies for economic environment and demographic issues.<sup>16</sup>

Some additional robustness checks are also reported in Tables A.5 and A.6 in Annex. Different partitions between EMU and non-EMU countries and before and after the introduction of the Euro are considered in the Table A.5. Regarding political opportunism, results for EMU countries are in line with the ones for the whole sample and more robust than those for the sub-set of non-EMU countries. However, opportunism is present in total expenditures and in the same components as for the whole sample (public services, education and social protection) both before and after the introduction of the Euro. Results in Table A.6 confirm these findings for the sample of EU countries and when we exclude the financial crisis period from the sample.

Our conclusions have also proved to be highly robust to the use of a different bias-corrected fixed effects estimator.<sup>17</sup> This estimator, known as BCFE, was developed by Vos et al. (2015) and the authors claim that it allows for a further bias reduction for panels with a small time period. In our exercise it corroborates our main finding that political opportunism is present not only in total government expenditure, but also deep inside its components that are perceived to generate outcomes that are more visible to voters, in particular, public services, education and social protection.

As a final exercise, we decided to test the cross-effects between the expenditures components. We replaced the dependent variable in the previous components-equations by the logarithm of the ratio of each component relatively to the others (and to total

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of coalitions and fractionalisation of the government, but no additional evidence was found. Those results are not reported here but they are available upon request.

<sup>16</sup> In other regressions, we used the output gap, real GDP growth, government debt and lags of the controllers, but the results remained essentially the same. We also tried to test for the interaction effects between *ElectYr* and *LeftGov*, *MajGov* and *LnGDPpc* (or *Unemp*), but the respective coefficients were always statistically insignificant. Those results are not reported here to save space, but they are available upon request.

<sup>17</sup> We are grateful to one of the referees for bringing this alternative estimator to our attention.

expenditures). This means that now we are measuring the relative effects between the components when the covariates change. The results are presented in Table 6, but only for the coefficient on *ElectYr*.<sup>18</sup>

**[Insert Table 6 around here]**

Each line in Table 6 presents the political effect for the log of the ratio of the respective component to each of the other components that are in each column. The results clearly show that expenditures in public services increase significantly in elections years relatively to almost all the other components of public expenditures (ranging from 2.0% to 4.5%), and inclusive relatively to total expenditures (where the relative rise is of about 2.5%). Overall, the results are consistent in showing public services as the component that is privileged by governments to generate the necessary conditions for them to obtain the required support to win the elections.

## **6. Conclusions**

This paper analyses the presence of opportunism, partisan and political support effects in the functional components and sub-components of public expenditures using data for 18 European countries over the period 1990-2012. The empirical analysis points to a strong presence of political business cycles at the aggregated and disaggregated levels of public expenditures, contrasting with the weak and limited evidence found for the partisan cycles. Furthermore, some effects would remain undetected if we relied solely on traditional aggregated data. The amount of relevant information found by the in depth analyses of government expenditures is quite significant, enabling us to better understand what is actually being politically driven. The components of public spending identified as being significantly manipulated in election years are: public services, education, social protection and some items inside health expenditure. Those components are chosen because they, quite likely, aggregate items that tend to generate more visible outcomes for voters. Furthermore,

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<sup>18</sup> Each regression was estimated with the same covariates used in our baseline model, but the estimates on their coefficients are not reported here to save space; however, they are available upon request.



it seems that the biggest categories of expenditure are especially targeted by governments near elections. A deeper analysis of their sub-components reveals some effects that were hidden in the more aggregate data analysis, which provides a clearer picture of the nature of the expenditures that are actually increasing in election years. We found that was the case of (i) expenditures on most of the health items; (ii) expenditures on primary education; (iii) expenditures on sickness and disability. Reinforcing the budget on these categories is seen across all segments of the population as a “good” policy, hence increasing governments’ popularity. These are highly visible policies, with quick short-term effects and very much consistent with political opportunism. Additionally, we found some weak evidence suggesting that there may be a redistribution of expenditures to signal competence, as some sub-components are found to decrease in electoral years.

Our results also show that public services have proved to be the component that is more robust and consistent across alternative model specifications. The only sub-category found to be always targeted in election years is expenditures on executive and legislative organs, financial and fiscal affairs and external affairs. The management costs of public funds and public debt included inside this sub-category might be a relevant source for the cycle found at this level. Hence, this study contributes to the understanding of the hidden complexity of political business cycles buried inside the main aggregates of public expenditures and our results highlight the need to continue the development of theoretical budget cycles models that take in consideration not only the growth of public expenditures but also where they are allocated and the purpose for which they are used.

We also conclude that political opportunism in Central European countries ranges over several components, while in Nordic and Southern European countries it is concentrated in public services. But Nordic (and Central) countries seem to have been able to mitigate this evidence in total expenditures by making surgical negative adjustments in other components.

Finally, we also verify that a better economic environment exerts a positive impact on almost all components, while relative prices have proved not to be relevant. On the

contrary, demographic effects seem to be dependent on the specificities of each component, having a negative impact on those components that benefit from economies of scale.

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## References

- Aidt, T., Veiga, F., Veiga, L., 2011. Election Results and Opportunistic Policies: A New Test of the Rational Political Business Cycle Model. *Public Choice*, 148, 21-44.
- Akhmedov, A., Zhuravskaya, E., 2004. Opportunistic political cycles: Test in a young democracy setting. *The Quarterly Journal of Economics*, 119(4), 1301–1338.
- Anderson, T., Hsiao, C., 1982. Formulation and estimation of dynamic models using panel data. *Journal of Econometrics*, 18(1), 47-82.
- Andrikopoulos, A., Loizides, I., Prodromidis, K., 2004. Fiscal policy and political business cycles in the EU. *European Journal of Political Economy* 20, 125-152.
- Alesina, A., 1987. Macroeconomic Policy in a Two-Party System as a Repeated Game. *Quarterly Journal of Economics*, 1023, 651-78.
- Alesina, A., Sachs, J., 1988. Political Parties and Business Cycle in the United States, 1948-84. *Journal of Money, Credit, and Banking*, 201, 63-82.
- Alesina A, Cohen, G, Roubini, N., 1992. Macroeconomic policies and elections in OECD democracies. *Economics & Politics.*, 41, 1-30
- Alesina, A., Cohen, G., Roubini, N., 1997. *Political Cycles and the Macroeconomy*. Cambridge, Mass. and London, The MIT Press.
- Arellano, M., Bond, S., 1991. Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations. *Review of Economic Studies*, 58, 277-297.
- Bergstrom, T. C., Goodman R. P., 1978. Private Demands for Public Goods. *The American Economic Review*, 63(3), 280-296.
- Blais, A., Nadeau, R., 1992. The Electoral Budget Cycle. *Public Choice*, 744, 389-403.
- Bloom, D., Canning, D., Mansfield, R., Moore, M., 2007. Demographic change, social security systems, and savings. *Journal of Monetary Economics*, 54(1), 92-114.
- Blundell R., Bond, S., 1998. Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 87(1), 115–143.

- Brender, A., Drazen, A., 2005. Political budget cycles in new versus established democracies. *Journal of Monetary Economics*, 52(7), 1271–1295.
- Brender, A., Drazen, A., 2008. How do budget deficits and economic growth affect Reelection prospects? Evidence from a large panel of countries. *American Economic Review*. 98, 2203-2220.
- Brender, A., Drazen, A., 2013. Elections, leaders, and the composition of government spending. *Journal of Public Economics* 97, 18-31.
- Bruno, G., 2005a. Estimation and inference in dynamic unbalanced panel-data models with a small number of individuals. *Stata Journal*, 5(4), 473-500.
- Bruno, G., 2005b. Approximating the bias of the LSDV estimator for dynamic unbalanced panel data models. *Economics Letters*, 87(3), 361-366.
- Castro, V., Martins, R., 2016. Political cycles and government expenditures: evidence from Portugal. *Applied Economics Letters*, 23(1), 34-37.
- Chortareas, G., Logothetis, V., Papandreou, A.. 2016. Political budget cycles and reelection prospects in Greece's municipalities, *European Journal of Political Economy*, 43, 1-13.
- De Haan, J., Sturm, J-E.,1997. Political and Economic Determinants of OECD Budget Deficits and Government Expenditures: A Reinvestigation. *European Journal of Political Economy*, 13, 739-750.
- De Haan, J., Sturm, J-E., and Beekhuis, G., 1999. The Weak Government Thesis: Some New Evidence, *Public Choice*, 101, 163-176.
- De Haan, J. de, Klomp, J., 2013. Conditional political budget cycles: a review of recent evidence. *Public Choice*, 157(3), 387–410.
- Drazen, A., Eslava, M., 2010. Electoral manipulation via voter-friendly spending: Theory and evidence. *Journal of Development Economics*, 92, 39-52.
- Efthyvoulou, G., 2012. Political budget cycles in the European Union and the impact of political pressures. *Public Choice*, 153, 295-327.

- Enkelman, S., Leibrecht, M., 2013. Political expenditure cycles and election outcomes: Evidence from disaggregation of public expenditures by economic functions. *Economics Letters*, 121, 128-32.
- Easaw, J. and Garratt, D., 2006. General elections and government expenditure cycles: Theory and evidence from the UK. *European Journal of Political Economy* 22 (2), 292-306.
- Eurostat, 2011. Sources and Methods for the compilation of COFOG statistics. Eurostat Working papers.
- Hibbs, D.A. Jr. 1977. Political Parties and Macroeconomic Policy. *American Political Science Review*, 71, 1467-87.
- Hibbs, D., 2006. Voting and the Macroeconomy. In B. R. Weingast & D. A. Wittman Eds., *The Oxford handbook of political economy* pp. 565–586. Oxford: Oxford University Press.
- Katsimi, M., Sarantides, V., 2012. Do elections affect the composition of fiscal policy in developed, established democracies? *Public Choice*, 151, 325-362.
- Kauder, B., Potrafke, N. 2013. Government Ideology and Tuition Fee Policy: Evidence from the German States. *CESifo Economic Studies*, 59 (4), 628-649.
- Klein, F.A., Sakurai, S.N., 2015. Term limits and political budget cycles at the local level: Evidence from a young democracy. *European Journal of Political Economy*, 37, 21-36.
- Mink, M., De Haan, J., 2006, Are There Political Budget Cycles in the Euro Area? *European Union Politics*, 7, 191-211.
- Morozumi, A., Veiga, F., Veiga, L., 2014: Electoral effects on the composition of public spending and revenue: evidence from a large panel of countries. NIPE Working Paper 23/2014.
- Mueller, D., 1989. *Public Choice II*. Cambridge, Cambridge University Press.
- Niskanen, W.A., 1978. Deficits, government spending and inflation: what is the evidence?. *Journal of Monetary Economics* 4, 591– 602.

- Nordhaus, W. D. 1975. The Political Business Cycle. *Review of Economic Studies*, XLII, 169-90.
- Persson, T. and Tabellini, G., 2000. *Political economics: Explaining Economic Policy*, MIT Press, Cambridge, MA.
- Persson, T., Tabellini, G., 2003. The Economic Effect of Constitutions: What do the Data Say?. MIT Press, Cambridge, MA.
- Potrafke, N., 2010. The growth of public health expenditures: do government ideology and electoral motives matter?. *Journal of Health Economics*, 296, 797-810.
- Rogoff, K., 1990. Equilibrium Political Budget Cycles. *The American Economic Review*. 801, 21-36.
- Rogoff, K., Sibert, A., 1988. Elections and Macroeconomic Policy Cycles. *Review of Economic Studies*. LV1, 1-16.
- Roodman, D., 2009. How to do xtabond2: An introduction to difference and system GMM in Stata. *Stata Journal*, 9(1), 86-136.
- Roubini, N., Sachs, J., 1989a. Political and Economic Determinants of Budget Deficits in the Industrial Democracies. *European Economic Review*, 33, 903-933.
- Roubini, N., Sachs, J., 1989b. Government spending and budget deficits in the industrialized countries, *Economic Policy*, 8, 99-132.
- Sakurai, S., Menezes-Filho, N., 2011. Opportunistic and partisan election cycles in Brazil: new evidence at the municipality level. *Public Choice*, 148, 233-247.
- Shi, M., Svensson, J., 2002a. Conditional political budget cycles. CEPR Discussion Paper 3352.
- Shi, M., Svensson, J., 2002b. Political business cycles in developed and developing countries, working paper, IIES, Stockholm University.
- Shi, M., Svensson, J., 2006. Political budget cycles: Do they differ across countries and why? *Journal of Public Economics*, 90, 1367-1389.
- Tridimas, G., 1992. Budgetary deficits and government expenditure growth: towards a more accurate empirical specification. *Public Finance Quarterly* 20, 275– 297.

- Veiga, F. and Veiga, L. 2007. Political business cycles at municipal level. *Public Choice*, 131(1-2), 45-64.
- Vergne, C., 2009. Democracy, elections and the allocation of public expenditures in developing countries. *European Journal of Political Economy* 25, 63-77.
- Vos, I., Evaraert, G., Ruysen, I., 2015. Bootstrap-based bias correction and inference for dynamic panels with fixed effects. *The Stata Journal*, 15(4), 986-1018.
- Wooldridge, J., 2013. *Introductory Econometrics: A Modern Approach*, 5<sup>th</sup> Edition, South-Western, Cengage Learning: USA.

## Tables

**Table 1.** Political opportunism and partisan effects in the components of public expenditures

<b>Dep. Variables:</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>	<b>(7)</b>	<b>(8)</b>	<b>(9)</b>	<b>(10)</b>	<b>(11)</b>
<i>Log of (per capita)</i>	<b>TotExpd</b>	<b>PubServ</b>	<b>Defence</b>	<b>PubOrder</b>	<b>EconAff</b>	<b>Environm</b>	<b>Housing</b>	<b>Health</b>	<b>Recreat</b>	<b>Educ</b>	<b>SocProtect</b>
<i>ElectYr</i>	0.012** (0.006)	0.036*** (0.007)	0.004 (0.016)	0.005 (0.017)	-0.011 (0.025)	-0.001 (0.016)	0.003 (0.032)	0.013 (0.011)	0.011 (0.012)	0.012** (0.006)	0.016*** (0.006)
<i>LeftGov</i>	0.001 (0.008)	-0.001 (0.008)	-0.008 (0.019)	-0.033 (0.020)	-0.008 (0.037)	0.033* (0.018)	0.058 (0.036)	0.006 (0.012)	0.012 (0.014)	0.017* (0.009)	0.003 (0.007)
<i>MajGov</i>	0.008 (0.012)	0.020 (0.013)	-0.001 (0.030)	-0.016 (0.030)	0.012 (0.033)	0.012 (0.028)	0.003 (0.058)	0.007 (0.019)	0.002 (0.021)	-0.004 (0.013)	0.014 (0.011)
<i>LnGDPpc</i>	0.141*** (0.046)	0.001 (0.051)	0.204* (0.123)	0.669*** (0.137)	0.121 (0.182)	0.437*** (0.123)	0.421* (0.248)	0.455*** (0.091)	0.443*** (0.093)	0.193*** (0.051)	0.023 (0.044)
<i>LnRelPr</i>	-0.001 (0.085)	0.025 (0.093)	0.069 (0.228)	-0.019 (0.216)	0.229 (0.332)	-0.148 (0.204)	-0.207 (0.434)	-0.059 (0.137)	-0.208 (0.151)	0.009 (0.091)	0.033 (0.074)
<i>LnPop</i>	-0.251** (0.126)	0.143 (0.121)	-0.574* (0.294)	0.261 (0.305)	0.622 (0.552)	-0.654** (0.279)	-0.251 (0.593)	-0.263 (0.194)	-0.521** (0.216)	-0.548*** (0.134)	-0.041 (0.109)
<i>DepVar(-1)</i>	0.933*** (0.029)	0.943*** (0.030)	0.829*** (0.041)	0.361*** (0.034)	0.528*** (0.050)	0.796*** (0.036)	0.490*** (0.049)	0.720*** (0.031)	0.793*** (0.030)	0.951*** (0.025)	0.948*** (0.025)
No. Observations	341	341	341	341	341	341	341	341	341	341	341
No. Countries	18	18	18	18	18	18	18	18	18	18	18

*Notes:* See Tables A.1 and A.2 in Annex. Bootstrapped standard errors are in parentheses; significance level at which the null hypothesis is rejected: \*\*\*, 1%; \*\*, 5%; and \*, 10%. The logarithm of the real value of each expenditure component per capita is used as dependent variable in each equation. A bias-corrected least squares dummy variable (LSDVC) estimator for dynamic panel data models is employed. The Blundell and Bond (1998) procedure is used as the initial estimator. We undertake 50 repetitions of the procedure to bootstrap the estimated standard errors. The results do not qualitatively change with more repetitions (100, 200 or 500) or when the Arellano and Bond (1991) or Anderson and Hsiao (1982) estimator are chosen as initial estimators. Country and time effects are controlled for in all estimations.



**Table 2. Sub-components analysis (part I)**

Dep.Vars.: <i>Log of (p.c.)</i>	1. Public Services							2. Defence					3. Public Order				
	(1.1) ExecAff	(1.2) ForAid	(1.3) GServ	(1.4) BasicRD	(1.5) GServRD	(1.6) OthServ	(1.7) DebtTrs	(2.1) MilDef	(2.2) CivDef	(2.3) FMilAid	(2.4) DefRD	(2.5) OthDef	(3.1) Police	(3.2) Fire	(3.3) Courts	(3.4) Prisons	(3.5) OthPO
<i>ElectYr</i>	0.030** (0.015)	0.030 (0.048)	0.026 (0.028)	-0.016 (0.135)	0.004 (0.055)	0.059 (0.065)	0.013 (0.019)	-0.007 (0.018)	-0.055 (0.085)	0.019 (0.052)	-0.089 (0.078)	0.099 (0.115)	0.023** (0.010)	0.013 (0.015)	0.009 (0.014)	0.001 (0.017)	-0.060 (0.045)
<i>LeftGov</i>	0.004 (0.021)	0.049 (0.051)	0.022 (0.036)	0.109 (0.190)	0.140* (0.077)	0.114 (0.091)	-0.011 (0.023)	0.021 (0.024)	-0.024 (0.089)	-0.058 (0.079)	-0.077 (0.112)	0.103 (0.154)	0.014 (0.012)	0.004 (0.019)	-0.010 (0.018)	0.010 (0.021)	-0.005 (0.075)
<i>MajGov</i>	0.007 (0.028)	-0.076 (0.067)	-0.095** (0.048)	0.115 (0.196)	0.095 (0.077)	-0.049 (0.115)	0.013 (0.031)	-0.039 (0.031)	0.033 (0.160)	0.031 (0.104)	0.053 (0.142)	-0.154 (0.190)	-0.005 (0.017)	-0.038 (0.025)	-0.015 (0.024)	-0.026 (0.028)	0.062 (0.091)
<i>LnGDPpc</i>	0.380** (0.153)	1.214*** (0.342)	0.718*** (0.254)	1.166 (1.325)	0.184 (0.504)	0.818 (0.750)	0.000 (0.159)	0.233 (0.155)	0.341 (0.867)	0.592 (0.503)	-1.124 (0.822)	1.022 (1.154)	0.279*** (0.090)	0.303** (0.129)	0.397*** (0.122)	0.239 (0.148)	0.207 (0.438)
<i>LnRelPr</i>	-0.263 (0.226)	0.450 (0.555)	-0.650* (0.371)	-0.548 (1.721)	0.676 (0.832)	-0.480 (1.307)	0.223 (0.240)	-0.178 (0.248)	0.870 (1.522)	-0.826 (0.874)	0.395 (1.224)	-2.059 (2.118)	-0.241* (0.134)	-0.195 (0.198)	-0.365* (0.190)	-0.477** (0.223)	0.190 (0.720)
<i>LnPop</i>	0.284 (0.237)	0.862 (0.796)	-0.031 (0.349)	2.007 (2.736)	-1.470* (0.788)	1.915 (1.312)	0.866*** (0.264)	0.220 (0.235)	-1.874 (2.625)	1.019 (0.785)	2.146 (1.440)	0.471 (2.857)	0.004 (0.227)	0.384* (0.208)	0.544*** (0.207)	0.531** (0.253)	-0.395 (0.794)
<i>DepVar(-1)</i>	0.706*** (0.055)	0.580*** (0.054)	0.779*** (0.055)	0.345*** (0.074)	0.963*** (0.045)	0.637*** (0.068)	1.019*** (0.034)	0.822*** (0.051)	0.537*** (0.071)	0.797*** (0.046)	0.715*** (0.054)	0.687*** (0.057)	0.907*** (0.052)	0.821*** (0.036)	0.783*** (0.037)	0.805*** (0.049)	0.846*** (0.055)
No. Observ.	228	222	228	201	197	213	228	228	152	198	183	178	228	228	228	228	222
No.Countries	17	16	17	15	15	15	17	17	13	15	14	13	17	17	17	17	17

  

Dep.Vars.: <i>Log of (p.c.)</i>	4. Economic Affairs							5. Environmental Protection							
	(4.1) GenAff	(4.2) Agric	(4.3) Energy	(4.4) Constr	(4.5) Transp	(4.6) Communic	(4.7) OthInd	(4.8) EAffRD	(4.9) OthEAff	(5.1) Waste	(5.2) WastWater	(5.3) Pollut	(5.4) Protect	(5.5) EnvirRD	(5.6) OthEnvir
<i>ElectYr</i>	-0.014 (0.067)	0.058* (0.032)	-0.060 (0.096)	0.006 (0.071)	0.016 (0.032)	-0.026 (0.130)	-0.003 (0.033)	-0.029 (0.032)	-0.024 (0.085)	-0.008 (0.040)	-0.110* (0.058)	0.115 (0.123)	-0.067* (0.038)	0.016 (0.092)	-0.010 (0.035)
<i>LeftGov</i>	0.012 (0.086)	0.004 (0.040)	0.203* (0.107)	0.174* (0.099)	0.087** (0.039)	-0.219 (0.160)	-0.023 (0.050)	0.022 (0.036)	0.148 (0.109)	0.048 (0.051)	-0.085 (0.085)	0.087 (0.152)	0.093* (0.050)	0.048 (0.101)	0.086** (0.037)
<i>MajGov</i>	0.055 (0.112)	-0.037 (0.052)	-0.031 (0.140)	-0.060 (0.106)	-0.016 (0.051)	-0.131 (0.210)	-0.077 (0.056)	-0.035 (0.046)	0.098 (0.144)	0.049 (0.068)	-0.009 (0.104)	-0.112 (0.192)	-0.008 (0.057)	-0.025 (0.127)	0.039 (0.049)
<i>LnGDPpc</i>	-1.263** (0.606)	0.371 (0.280)	-0.142 (0.703)	0.322 (0.561)	1.094*** (0.289)	2.816** (1.151)	0.794** (0.343)	0.436* (0.252)	1.079 (0.811)	0.527 (0.339)	0.904* (0.504)	0.206 (1.136)	0.842** (0.338)	1.259* (0.730)	-0.149 (0.242)
<i>LnRelPr</i>	1.573* (0.900)	-0.316 (0.422)	2.743*** (1.172)	0.853 (1.160)	1.010** (0.417)	-3.836*** (1.682)	-1.418*** (0.549)	-0.430 (0.382)	0.168 (1.186)	0.315 (0.525)	-0.672 (1.180)	-0.094 (1.527)	0.326 (0.477)	-0.101 (1.005)	0.531 (0.418)
<i>LnPop</i>	4.055*** (0.996)	0.087 (0.387)	0.680 (1.717)	-1.493 (1.339)	0.514 (0.414)	1.945 (1.578)	0.232 (0.739)	0.147 (0.612)	-1.428 (1.154)	0.321 (0.521)	-0.371 (1.220)	2.414 (2.126)	0.052 (0.625)	1.608 (1.372)	0.705 (0.561)
<i>DepVar(-1)</i>	0.590*** (0.072)	0.563*** (0.057)	0.620*** (0.048)	0.710*** (0.044)	0.430*** (0.065)	0.314*** (0.062)	0.828*** (0.052)	0.913*** (0.059)	0.720*** (0.056)	0.776*** (0.040)	0.834*** (0.047)	0.504*** (0.079)	0.675*** (0.052)	0.554*** (0.070)	0.647*** (0.050)
No. Observ.	228	228	222	221	228	228	221	222	228	228	213	215	221	213	222
No.Countries	17	17	16	16	17	17	17	16	17	17	16	16	16	16	16

Notes: See Tables 1 and Table A.1 in Annex. Bootstrapped standard errors are in parentheses; significance level at which the null hypothesis is rejected: \*\*\*, 1%; \*\*, 5%; and \*, 10%. Data for *TransfGen*, (in Public Services) and *PubOrdRD* (in Public Order) are missing for most countries; the lack of variability makes it impossible to run the model in those cases. Country and time effects are controlled for in all estimations.

**Table 3. Sub-components analysis (part II)**

Dep.Vars.: <i>Log of (p.c.)</i>	6. Housing Amenities						7. Health						8. Recreation					
	(6.1) HousDev	(6.2) ComDev	(6.3) WatSup	(6.4) StrLight	(6.5) HousRD	(6.6) OthHous	(7.1) MedProd	(7.2) OutPServ	(7.3) HospServ	(7.4) PubHlth	(7.5) HlthRD	(7.6) OthHlth	(8.1) Sports	(8.2) Culture	(8.3) Broadcast	(8.4) Religious	(8.5) RecrRD	(8.6) OthRecr
<i>ElectYr</i>	0.001 (0.106)	0.008 (0.092)	0.063 (0.059)	0.008 (0.040)	0.058 (0.097)	0.154 (0.106)	0.066* (0.036)	0.046 (0.029)	0.022*** (0.008)	0.045 (0.030)	0.061** (0.025)	-0.010 (0.046)	0.013 (0.016)	0.012 (0.019)	0.000 (0.077)	0.028 (0.046)	0.010 (0.060)	-0.093 (0.074)
<i>LeftGov</i>	0.102 (0.126)	-0.202 (0.125)	0.114 (0.092)	0.105* (0.063)	-0.182 (0.146)	0.085 (0.171)	0.030 (0.051)	0.047 (0.041)	0.006 (0.014)	-0.048 (0.035)	0.065** (0.031)	-0.024 (0.059)	0.024 (0.020)	0.050** (0.024)	-0.059 (0.099)	-0.017 (0.042)	0.095 (0.083)	-0.012 (0.097)
<i>MajGov</i>	-0.064 (0.128)	-0.306** (0.133)	-0.046 (0.075)	0.129* (0.066)	0.088 (0.121)	0.342* (0.181)	-0.023 (0.054)	-0.013 (0.043)	-0.015 (0.013)	-0.001 (0.044)	-0.009 (0.041)	-0.068 (0.077)	-0.044 (0.027)	-0.036 (0.031)	0.074 (0.129)	-0.082 (0.068)	0.021 (0.110)	-0.166 (0.116)
<i>LnGDPpc</i>	1.296 (0.852)	0.296 (0.746)	0.656 (0.450)	-0.286 (0.409)	0.479 (0.859)	0.181 (0.963)	0.578* (0.298)	0.646*** (0.230)	0.247*** (0.075)	0.003 (0.215)	0.406* (0.221)	0.306 (0.427)	0.581*** (0.133)	0.542*** (0.166)	0.059 (0.651)	0.555 (0.351)	0.348 (0.646)	0.905 (0.592)
<i>LnRelPr</i>	1.916 (1.246)	0.727 (1.295)	0.421 (0.790)	1.939** (0.961)	-3.339*** (1.265)	1.130 (1.531)	-0.158 (0.637)	0.484 (0.483)	-0.287** (0.137)	0.054 (0.363)	-0.724** (0.330)	-0.157 (0.652)	-0.769*** (0.218)	-0.369 (0.252)	-0.692 (1.046)	-0.611 (0.560)	-0.904 (1.328)	-1.341 (0.909)
<i>LnPop</i>	-0.141 (1.829)	-1.116 (1.503)	-0.669 (0.862)	0.449 (1.266)	2.181 (1.953)	0.161 (2.052)	-0.141 (0.673)	-0.246 (0.543)	-0.116 (0.196)	0.256 (0.506)	-0.408 (0.444)	1.250* (0.700)	-0.541** (0.236)	0.120 (0.274)	1.486 (1.043)	0.061 (0.588)	0.537 (1.196)	-1.254 (1.140)
<i>DepVar(-1)</i>	0.337*** (0.063)	0.936*** (0.041)	0.740*** (0.062)	0.865*** (0.071)	0.723*** (0.059)	0.809*** (0.052)	0.812*** (0.037)	0.819*** (0.039)	0.971*** (0.029)	0.891*** (0.035)	0.945*** (0.047)	0.800*** (0.060)	0.932*** (0.037)	0.807*** (0.047)	0.911*** (0.050)	0.756*** (0.040)	0.641*** (0.053)	0.883*** (0.049)
No. Observ.	226	202	211	144	144	165	221	221	211	222	228	228	228	228	224	185	191	
No.Countries	17	15	16	11	11	13	16	16	16	16	17	17	17	17	17	14	14	

  

Dep.Vars.: <i>Log of (p.c.)</i>	9. Education									10. Social Protection								
	(9.1) Prim	(9.2) Second	(9.3) PosSec	(9.4) Tert	(9.5) Genr	(9.6) SubServ	(9.7) EducRD	(9.8) OthEduc	(10.1) SickDis	(10.2) Olders	(10.3) Survivors	(10.4) Family	(10.5) UnemPrt	(10.6) HousPrt	(10.7) SocExcl	(10.8) SocPrtRD	(10.9) OthSocP	
<i>ElectYr</i>	0.016** (0.008)	0.004 (0.009)	0.095 (0.110)	0.011 (0.017)	0.001 (0.032)	0.024 (0.031)	0.007 (0.061)	-0.009 (0.028)	0.020** (0.010)	0.007 (0.010)	0.011 (0.013)	0.009 (0.014)	0.007 (0.023)	0.042 (0.081)	-0.035 (0.038)	0.082 (0.090)	0.010 (0.025)	
<i>LeftGov</i>	0.023** (0.010)	0.038*** (0.011)	-0.002 (0.149)	0.012 (0.019)	0.112** (0.046)	0.040 (0.036)	-0.050 (0.081)	0.037 (0.035)	0.013 (0.012)	-0.005 (0.013)	0.031* (0.017)	0.029 (0.018)	0.032 (0.029)	0.082 (0.166)	0.058 (0.049)	0.170 (0.146)	0.032 (0.030)	
<i>MajGov</i>	-0.010 (0.013)	-0.008 (0.015)	0.098 (0.193)	-0.063** (0.025)	0.043 (0.042)	0.039 (0.045)	-0.130 (0.096)	0.006 (0.048)	-0.024 (0.017)	0.007 (0.017)	0.022 (0.022)	-0.003 (0.024)	-0.003 (0.038)	-0.031 (0.140)	-0.043 (0.066)	-0.149 (0.144)	0.038 (0.042)	
<i>LnGDPpc</i>	0.212*** (0.063)	0.299*** (0.074)	1.916** (0.864)	0.308** (0.125)	0.054 (0.242)	0.469** (0.226)	0.952* (0.492)	0.125 (0.258)	0.224*** (0.081)	0.038 (0.085)	0.099 (0.113)	0.629*** (0.113)	-0.671*** (0.194)	0.547 (0.885)	0.354 (0.335)	-0.389 (0.925)	0.159 (0.198)	
<i>LnRelPr</i>	-0.092 (0.110)	0.066 (0.122)	-1.384 (1.351)	-0.174 (0.202)	-0.344 (0.446)	0.256 (0.361)	-1.778** (0.717)	-0.255 (0.395)	-0.206 (0.136)	0.016 (0.137)	-0.006 (0.169)	-0.022 (0.185)	0.752** (1.343)	0.462 (0.525)	0.532 (1.898)	-1.375 (1.898)	-0.359 (0.326)	
<i>LnPop</i>	-0.295* (0.156)	0.065 (0.143)	-0.735 (1.684)	-0.401* (0.221)	1.207** (0.564)	0.187 (0.618)	-0.087 (1.211)	-0.027 (0.424)	0.080 (0.204)	0.665*** (0.170)	-0.092 (0.168)	-0.385 (0.253)	1.886*** (0.332)	1.271 (1.837)	0.712 (0.495)	6.790** (2.849)	-0.267 (0.313)	
<i>DepVar(-1)</i>	0.966*** (0.041)	0.800*** (0.042)	0.631*** (0.062)	1.051*** (0.028)	0.595*** (0.047)	0.840*** (0.044)	0.925*** (0.047)	0.896*** (0.051)	0.944*** (0.041)	0.865*** (0.038)	0.980*** (0.026)	0.914*** (0.035)	0.822*** (0.048)	0.656*** (0.063)	0.718*** (0.054)	0.771*** (0.063)	0.970*** (0.033)	
No. Observ.	228	228	160	228	215	222	221	228	228	228	228	228	228	211	228	184	228	
No.Countries	17	17	12	17	15	16	17	17	17	17	17	17	17	16	17	15	17	

Notes: See Tables 1 and 2 and Table A.1 in Annex. Bootstrapped standard errors are in parentheses; significance level at which the null hypothesis is rejected: \*\*\*, 1%; \*\*, 5%; and \*, 10%. *DepVar(-1)* represents the first lag of the respective dependent variable. Country and time effects are controlled for in all estimations.

**Table 4.** Robustness check I: Nordic, Central and Southern European countries

<i>Log of (p.c.)</i>	TotExpd	PubServ	Defence	PubOrder	EconAff	Environm	Housing	Health	Recreat	Educ	SocProtect
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<b>Nordic</b>											
<i>ElectYr</i>	0.002 (0.016)	0.036** (0.018)	-0.018 (0.036)	0.024 (0.019)	-0.020 (0.042)	-0.021 (0.031)	-0.062 (0.076)	0.011 (0.019)	0.021 (0.025)	0.006 (0.018)	0.018 (0.017)
<i>LeftGov</i>	-0.013 (0.021)	0.022 (0.025)	-0.045 (0.050)	-0.011 (0.027)	-0.084 (0.058)	0.027 (0.040)	0.031 (0.099)	0.002 (0.025)	-0.001 (0.036)	0.007 (0.026)	0.004 (0.022)
<i>MajGov</i>	0.023 (0.027)	0.033 (0.031)	0.042 (0.071)	0.026 (0.033)	0.051 (0.069)	0.113** (0.051)	0.133 (0.119)	0.013 (0.032)	0.076* (0.046)	0.016 (0.032)	0.033 (0.030)
<i>LnGDPpc</i>	0.162* (0.093)	0.109 (0.131)	0.496** (0.245)	0.291** (0.117)	0.243 (0.323)	0.376* (0.222)	-0.636 (0.556)	0.298*** (0.107)	0.360** (0.166)	0.283** (0.111)	0.028 (0.102)
<i>LnRelPr</i>	-0.098 (0.156)	-0.201 (0.193)	-0.535 (0.442)	-0.115 (0.208)	-0.310 (0.445)	-0.112 (0.295)	-0.421 (0.767)	-0.112 (0.186)	-0.070 (0.274)	-0.145 (0.200)	0.053 (0.167)
<i>LnPop</i>	-0.671* (0.395)	-0.005 (0.480)	-1.990** (0.943)	-0.940* (0.508)	-0.736 (1.135)	-1.901*** (0.720)	1.425 (1.905)	-1.122** (0.466)	-1.360* (0.769)	-1.089** (0.484)	-0.563 (0.432)
<i>DepVar(-1)</i>	0.992*** (0.057)	0.872*** (0.096)	0.982*** (0.083)	0.948*** (0.060)	0.647*** (0.106)	0.853*** (0.059)	0.279** (0.115)	1.001*** (0.045)	0.933*** (0.077)	0.959*** (0.060)	1.005*** (0.061)
No. Observ.	97	97	97	97	97	97	97	97	97	97	97
No. Countr.	5	5	5	5	5	5	5	5	5	5	5
<b>Central</b>											
<i>ElectYr</i>	0.011 (0.011)	0.024** (0.012)	-0.007 (0.020)	0.015 (0.010)	-0.017 (0.036)	0.009 (0.029)	0.045 (0.050)	0.025** (0.010)	0.001 (0.013)	0.014 (0.008)	0.017* (0.009)
<i>LeftGov</i>	0.032** (0.016)	-0.014 (0.016)	0.025 (0.034)	0.028** (0.014)	-0.004 (0.077)	0.020 (0.044)	0.066 (0.073)	0.017 (0.014)	0.035* (0.020)	0.025** (0.012)	0.026** (0.013)
<i>MajGov</i>	0.007 (0.018)	0.032* (0.018)	-0.019 (0.035)	0.002 (0.017)	0.027 (0.069)	-0.013 (0.047)	0.004 (0.076)	-0.007 (0.017)	0.020 (0.023)	-0.001 (0.014)	0.018 (0.015)
<i>LnGDPpc</i>	0.184*** (0.071)	-0.030 (0.064)	0.057 (0.127)	0.103* (0.062)	0.243 (0.270)	0.520*** (0.193)	0.933*** (0.275)	0.131* (0.070)	0.267*** (0.100)	0.093* (0.054)	0.053 (0.055)
<i>LnRelPr</i>	0.225 (0.164)	0.064 (0.156)	-0.151 (0.299)	-0.324** (0.130)	2.218*** (0.726)	0.119 (0.419)	0.157 (0.609)	-0.082 (0.148)	-0.042 (0.204)	-0.193 (0.121)	0.126 (0.123)
<i>LnPop</i>	0.218 (0.172)	0.100 (0.166)	0.018 (0.317)	-0.120 (0.128)	-0.224 (0.708)	-0.695 (0.423)	-0.802 (0.683)	-0.335** (0.160)	-0.530*** (0.199)	-0.212* (0.116)	0.503*** (0.158)
<i>DepVar(-1)</i>	0.672*** (0.070)	0.965*** (0.048)	0.895*** (0.057)	0.983*** (0.035)	0.290*** (0.087)	0.789*** (0.051)	0.416*** (0.058)	0.961*** (0.043)	0.902*** (0.052)	0.991*** (0.043)	0.718*** (0.066)
No. Observ.	166	166	166	166	164	166	166	166	166	166	166
No. Countr.	9	9	9	9	9	9	9	9	9	9	9
<b>South</b>											
<i>ElectYr</i>	0.021* (0.013)	0.052*** (0.017)	0.030 (0.051)	-0.021 (0.050)	0.026 (0.046)	0.013 (0.036)	0.028 (0.081)	0.005 (0.034)	0.036 (0.039)	0.017 (0.020)	0.009 (0.011)
<i>LeftGov</i>	0.003 (0.015)	-0.012 (0.021)	0.009 (0.058)	-0.152** (0.059)	0.006 (0.055)	0.078* (0.041)	0.036 (0.099)	0.031 (0.039)	-0.022 (0.047)	0.014 (0.023)	0.002 (0.013)
<i>MajGov</i>	0.000 (0.013)	-0.002 (0.018)	-0.011 (0.053)	-0.057 (0.048)	0.013 (0.046)	-0.012 (0.035)	-0.073 (0.085)	0.024 (0.033)	-0.086** (0.040)	-0.025 (0.020)	0.009 (0.011)
<i>LnGDPpc</i>	0.249* (0.136)	0.151 (0.180)	0.009 (0.517)	0.634 (0.488)	0.158 (0.481)	1.161*** (0.382)	0.486 (0.904)	0.796** (0.350)	1.171*** (0.426)	0.463** (0.213)	0.170 (0.111)
<i>LnRelPr</i>	0.117 (0.170)	0.281 (0.228)	1.478** (0.611)	1.237* (0.652)	-0.598 (0.612)	0.316 (0.469)	-0.582 (1.114)	1.326*** (0.467)	-0.081 (0.582)	0.471* (0.261)	0.089 (0.142)
<i>LnPop</i>	0.158 (0.275)	0.196 (0.338)	0.014 (1.006)	1.579 (1.015)	0.840 (1.004)	-0.132 (0.760)	-2.416 (1.860)	1.377* (0.731)	-0.711 (0.874)	-0.402 (0.414)	0.297 (0.222)
<i>DepVar(-1)</i>	0.734*** (0.067)	1.012*** (0.065)	0.467*** (0.110)	0.171*** (0.042)	0.342*** (0.083)	0.241*** (0.082)	0.422*** (0.107)	0.185*** (0.070)	0.506*** (0.081)	0.681*** (0.066)	0.845*** (0.041)
No. Observ.	78	78	78	78	78	78	78	78	78	78	78
No. Countr.	4	4	4	4	4	4	4	4	4	4	4

*Notes:* See Table 1. Bootstrapped standard errors are in parentheses; significance level at which the null hypothesis is rejected: \*\*\*, 1%; \*\*, 5%; and \*, 10%. Nordic countries: Denmark, Finland, Iceland, Norway and Sweden; Central countries: Austria, Belgium, France, Germany, Ireland, Luxembourg, Netherlands, Switzerland and the United Kingdom; Southern countries: Greece, Italy, Portugal and Spain. Country and time effects are controlled for in all estimations.

**Table 5. Robustness check II: Sub-components analysis by group of countries**

		1. Public Services						2. Defence				3. Public Order					
<i>Log.p.c.</i>	<i>ExecAff</i>	<i>ForAid</i>	<i>GServ</i>	<i>BasicRD</i>	<i>GService</i>	<i>OthServ</i>	<i>DebtTrs</i>	<i>MilDef</i>	<i>CivDef</i>	<i>FMAid</i>	<i>DefRD</i>	<i>Police</i>	<i>Fire</i>	<i>Courts</i>	<i>Prisons</i>	<i>OthPO</i>	
Nordic	<i>ElectYr</i>	0.034* (0.019)	-0.002 (0.024)	0.007 (0.030)	0.035 (0.026)	0.030 (0.052)	0.032 (0.132)	-0.013 (0.049)	0.003 (0.025)	-0.195 (0.148)	-0.051 (0.112)	-0.350 (0.280)	-0.005 (0.019)	0.017 (0.019)	0.009 (0.023)	0.022 (0.020)	-0.245** (0.103)
	<i>LeftGov</i>	0.024 (0.058)	0.044 (0.038)	0.012 (0.050)	-0.017 (0.039)	0.189** (0.093)	0.308 (0.214)	0.133* (0.080)	0.061 (0.042)	0.100 (0.236)	-0.174 (0.190)	-0.355 (0.345)	-0.001 (0.033)	0.013 (0.031)	-0.033 (0.038)	-0.013 (0.036)	0.155 (0.183)
	<i>MajGov</i>	-0.082 (0.072)	-0.071 (0.048)	-0.059 (0.065)	0.001 (0.049)	-0.298 (0.220)	-0.018 (0.277)	0.062 (0.103)	-0.074 (0.052)	0.043 (0.287)	0.227 (0.232)	0.575 (0.424)	-0.037 (0.039)	-0.044 (0.041)	-0.063 (0.046)	0.005 (0.043)	-0.112 (0.225)
Central	<i>ElectYr</i>	0.015** (0.007)	0.028 (0.032)	0.036 (0.042)	-0.013 (0.061)	0.000 (0.070)	0.038 (0.111)	0.012 (0.023)	-0.025 (0.024)	0.082 (0.096)	0.009 (0.049)	0.011 (0.061)	0.032** (0.013)	0.010 (0.013)	0.005 (0.012)	0.015 (0.017)	-0.028 (0.054)
	<i>LeftGov</i>	0.014 (0.032)	-0.065 (0.061)	0.034 (0.075)	0.290** (0.125)	0.156 (0.129)	-0.062 (0.215)	-0.036 (0.045)	-0.007 (0.048)	0.014 (0.138)	-0.015 (0.083)	-0.193 (0.137)	0.017 (0.024)	0.020 (0.023)	-0.000 (0.019)	0.040 (0.032)	0.016 (0.096)
	<i>MajGov</i>	0.007 (0.036)	0.037 (0.066)	-0.190** (0.088)	0.022 (0.125)	0.154 (0.171)	0.015 (0.176)	0.042 (0.050)	-0.027 (0.054)	-0.257 (0.331)	0.012 (0.109)	-0.062 (0.149)	0.004 (0.028)	-0.009 (0.028)	-0.010 (0.025)	-0.013 (0.038)	-0.125 (0.112)
South	<i>ElectYr</i>	0.030** (0.015)	0.053 (0.127)	0.023 (0.054)	-0.070 (0.513)	-0.016 (0.098)	0.102 (0.191)	0.002 (0.034)	-0.011 (0.040)	0.127 (0.188)	0.168 (0.205)	-0.031 (0.142)	0.002 (0.022)	0.027 (0.047)	-0.002 (0.046)	-0.037 (0.050)	0.026 (0.135)
	<i>LeftGov</i>	-0.041 (0.072)	0.338 (0.252)	0.081 (0.077)	-0.156 (1.159)	0.039 (0.151)	0.364 (0.403)	0.020 (0.054)	-0.037 (0.063)	-0.105 (0.277)	0.169 (0.401)	0.349 (0.278)	-0.011 (0.035)	-0.017 (0.073)	-0.093 (0.067)	-0.111 (0.082)	-0.062 (0.279)
	<i>MajGov</i>	-0.045 (0.077)	-0.220 (0.246)	-0.012 (0.076)	-0.032 (0.987)	0.014 (0.146)	-0.034 (0.379)	0.023 (0.053)	-0.176*** (0.063)	0.186 (0.451)	0.116 (0.351)	0.199 (0.283)	-0.034 (0.035)	-0.049 (0.080)	-0.052 (0.081)	-0.076 (0.082)	0.123 (0.326)
		4. Economic Affairs						5. Environmental Protection									
<i>Log.p.c.</i>	<i>GenAff</i>	<i>Agrie</i>	<i>Energy</i>	<i>Constr</i>	<i>Transp</i>	<i>Communic</i>	<i>OthInd</i>	<i>EAIRD</i>	<i>OthEAff</i>	<i>Waste</i>	<i>WastWater</i>	<i>Pollut</i>	<i>Protect</i>	<i>EnvirRD</i>	<i>OthEnvir</i>		
Nordic	<i>ElectYr</i>	0.012 (0.031)	-0.040 (0.040)	0.102 (0.123)	-0.157 (0.126)	-0.012 (0.023)	-0.030 (0.194)	0.115 (0.117)	-0.076 (0.084)	-0.129 (0.075)	-0.037 (0.206)	-0.361* (0.122)	-0.039 (0.055)	0.198** (0.100)	-0.001 (0.039)		
	<i>LeftGov</i>	-0.024 (0.051)	-0.023 (0.065)	0.241 (0.200)	0.394* (0.206)	0.032 (0.039)	-0.374 (0.281)	-0.127 (0.132)	0.010 (0.138)	0.336 (0.312)	-0.015 (0.135)	-0.437 (0.348)	0.251 (0.197)	0.123 (0.087)	0.044 (0.173)	0.049 (0.061)	
	<i>MajGov</i>	-0.034 (0.062)	-0.070 (0.078)	0.026 (0.270)	0.220 (0.248)	-0.010 (0.047)	0.185 (0.374)	-0.144 (0.173)	-0.026 (0.175)	0.707* (0.396)	-0.072 (0.169)	-0.252 (0.335)	0.021 (0.264)	-0.015 (0.112)	0.194 (0.209)	-0.169** (0.079)	
Central	<i>ElectYr</i>	-0.065 (0.100)	0.048 (0.033)	-0.011 (0.108)	0.070 (0.113)	0.014 (0.042)	-0.033 (0.161)	-0.014 (0.033)	-0.011 (0.030)	0.063 (0.118)	0.040 (0.056)	-0.055 (0.079)	0.136** (0.060)	-0.089** (0.044)	0.011 (0.046)	-0.006 (0.040)	
	<i>LeftGov</i>	0.105 (0.187)	0.024 (0.062)	0.046 (0.197)	0.057 (0.199)	0.087 (0.076)	-0.145 (0.289)	-0.007 (0.064)	-0.008 (0.058)	0.123 (0.232)	0.019 (0.099)	0.168* (0.102)	0.041 (0.116)	0.018 (0.098)	0.018 (0.116)	0.102 (0.070)	
	<i>MajGov</i>	0.081 (0.206)	0.011 (0.069)	-0.154 (0.230)	-0.084 (0.205)	0.038 (0.085)	0.063 (0.328)	-0.032 (0.072)	0.025 (0.062)	0.054 (0.252)	0.285** (0.122)	0.151 (0.146)	-0.150 (0.132)	0.010 (0.084)	0.048 (0.095)	0.040 (0.079)	
South	<i>ElectYr</i>	0.164 (0.125)	0.146 (0.091)	-0.284 (0.177)	-0.001 (0.107)	0.037 (0.052)	-0.171 (0.272)	-0.108 (0.098)	-0.117 (0.046)	-0.106** (0.088)	0.002 (0.054)	0.156 (0.524)	-0.068 (0.052)	-0.089 (0.253)	-0.056 (0.063)		
	<i>LeftGov</i>	-0.049 (0.185)	-0.149 (0.135)	0.672* (0.349)	0.052 (0.164)	0.007 (0.083)	-1.085** (0.439)	-0.111 (0.157)	-0.013 (0.096)	-0.089 (0.134)	0.018 (0.087)	-0.069 (0.101)	-0.081 (1.190)	0.141 (0.106)	0.333 (0.514)	-0.062 (0.132)	
	<i>MajGov</i>	0.201 (0.190)	-0.301** (0.142)	0.515 (0.354)	-0.250 (0.173)	-0.217** (0.085)	-0.926** (0.461)	-0.273* (0.160)	-0.108 (0.092)	-0.177 (0.145)	-0.085 (0.090)	-0.104 (0.111)	-0.622 (0.940)	-0.073 (0.099)	-0.201 (0.450)	0.111 (0.122)	
		6. Housing Amenities						7. Health				8. Recreation					
<i>Log.p.c.</i>	<i>HousDev</i>	<i>ComDev</i>	<i>WatSup</i>	<i>StrLight</i>	<i>HousRD</i>	<i>OthHous</i>	<i>MedProd</i>	<i>OutPServ</i>	<i>HospServ</i>	<i>PubHlth</i>	<i>HlthRD</i>	<i>Sports</i>	<i>Culture</i>	<i>Broadcast</i>	<i>Religious</i>	<i>RecrRD</i>	
Nordic	<i>ElectYr</i>	-0.309* (0.165)	0.180 (0.514)	-0.001 (0.042)	0.415* (0.222)	-0.244 (0.228)	0.002 (0.017)	0.005 (0.019)	-0.012 (0.014)	-0.008 (0.027)	0.038 (0.038)	0.025 (0.017)	-0.003 (0.024)	0.313 (0.231)	0.019 (0.054)	0.025 (0.174)	
	<i>LeftGov</i>	0.278 (0.251)	-1.178* (0.668)	-0.014 (0.085)	-0.614* (0.344)	0.087 (0.317)	0.027 (0.028)	-0.021 (0.031)	0.006 (0.023)	-0.017 (0.047)	0.079 (0.061)	0.030 (0.027)	0.056 (0.040)	-0.173 (0.364)	-0.003 (0.085)	-0.018 (0.285)	
	<i>MajGov</i>	0.132 (0.315)	-0.527 (0.777)	-0.105 (0.069)	0.063 (0.387)	dropped	-0.053 (0.034)	-0.067* (0.040)	-0.052* (0.029)	0.013 (0.058)	0.007 (0.078)	0.044 (0.032)	0.004 (0.054)	-0.134 (0.453)	0.054 (0.107)	0.178 (0.358)	
Central	<i>ElectYr</i>	0.096 (0.138)	0.064* (0.033)	0.075 (0.077)	-0.025 (0.034)	0.003 (0.126)	0.156* (0.091)	0.130** (0.063)	0.098** (0.048)	0.032*** (0.011)	0.064* (0.036)	0.087** (0.038)	0.005 (0.020)	0.017 (0.022)	-0.087 (0.089)	0.015 (0.057)	
	<i>LeftGov</i>	0.092 (0.241)	0.079 (0.062)	0.077 (0.140)	0.069 (0.067)	-0.155 (0.222)	0.257* (0.153)	0.116 (0.121)	0.033 (0.097)	0.001 (0.018)	-0.056 (0.072)	0.055 (0.036)	-0.006 (0.043)	0.028 (0.163)	-0.019 (0.071)	-0.155** (0.099)	
	<i>MajGov</i>	-0.128 (0.266)	-0.072 (0.070)	0.024 (0.159)	0.100 (0.072)	0.218 (0.233)	0.132 (0.202)	0.036 (0.120)	-0.003 (0.093)	0.004 (0.022)	-0.036 (0.076)	-0.042 (0.082)	-0.039 (0.047)	-0.041 (0.047)	0.244 (0.199)	-0.093 (0.107)	-0.060 (0.180)
South	<i>ElectYr</i>	0.101 (0.133)	-0.257 (0.169)	0.102 (0.089)	0.046 (0.091)	-0.156 (0.302)	0.288 (0.204)	-0.020 (0.045)	-0.038 (0.043)	0.008 (0.028)	0.023 (0.032)	0.014 (0.035)	0.027 (0.035)	0.042 (0.052)	-0.007 (0.086)	0.051 (0.088)	
	<i>LeftGov</i>	-0.192 (0.182)	-0.024 (0.329)	0.181 (0.129)	0.247* (0.143)	1.444 (0.988)	-0.235 (0.336)	-0.095 (0.063)	0.121* (0.062)	-0.008 (0.035)	-0.215* (0.127)	0.051 (0.048)	0.037 (0.057)	0.024 (0.083)	-0.020 (0.144)	-0.087 (0.143)	0.061 (0.212)
	<i>MajGov</i>	-0.127 (0.228)	-0.431 (0.309)	-0.021 (0.141)	0.220 (0.154)	0.724 (0.678)	0.339 (0.341)	-0.194** (0.079)	0.046 (0.070)	0.009 (0.051)	-0.131 (0.118)	-0.001 (0.050)	-0.137** (0.057)	-0.125 (0.084)	-0.186 (0.145)	-0.274* (0.149)	-0.050 (0.201)
		9. Education						10. Social Protection									
<i>Log.p.c.</i>	<i>Prim</i>	<i>Second</i>	<i>PosSec</i>	<i>Tert</i>	<i>Genr</i>	<i>SubServ</i>	<i>EducRD</i>	<i>SickDis</i>	<i>Olders</i>	<i>Survivors</i>	<i>Family</i>	<i>UnenPrt</i>	<i>HousPrt</i>	<i>SocExcl</i>	<i>SocPrtRD</i>	<i>OthSocP</i>	
Nordic	<i>ElectYr</i>	0.009 (0.013)	-0.004 (0.019)	0.498 (0.357)	-0.020 (0.020)	-0.019 (0.048)	0.006 (0.088)	0.051 (0.156)	0.018 (0.024)	0.001 (0.016)	-0.007 (0.016)	-0.006 (0.014)	0.045 (0.054)	0.008 (0.031)	-0.009 (0.031)	0.110 (0.124)	
	<i>LeftGov</i>	0.000 (0.022)	0.020 (0.032)	0.220 (0.586)	0.005 (0.033)	-0.018 (0.076)	-0.024 (0.153)	-0.083 (0.173)	0.024 (0.038)	0.006 (0.027)	0.005 (0.026)	-0.042 (0.023)	0.117 (0.083)	0.015 (0.120)	0.095 (0.052)	0.103 (0.199)	
	<i>MajGov</i>	-0.042 (0.027)	-0.011 (0.040)	0.176 (0.527)	-0.079* (0.042)	-0.038 (0.092)	-0.110 (0.192)	-0.002 (0.280)	-0.101** (0.049)	-0.028 (0.034)	-0.043 (0.031)	-0.024 (0.030)	-0.174 (0.109)	-0.155 (0.146)	-0.020 (0.065)	-0.215 (0.265)	
Central	<i>ElectYr</i>	0.021** (0.009)	0.005 (0.008)	-0.005 (0.038)	0.020 (0.025)	0.028 (0.045)	0.036 (0.028)	-0.014 (0.073)	0.016** (0.008)	0.008 (0.016)	0.009 (0.019)	0.021 (0.014)	0.005 (0.026)	-0.082 (0.081)	-0.004 (0.023)	0.108 (0.108)	
	<i>LeftGov</i>	0.019 (0.017)	0.008 (0.015)	-0.005 (0.085)	0.028 (0.048)	0.083 (0.070)	0.068 (0.057)	-0.046 (0.142)	-0.016 (0.021)	0.010 (0.029)	0.087** (0.037)	0.014 (0.026)	0.065 (0.047)	-0.065 (0.166)	0.024 (0.043)	-0.023 (0.208)	
	<i>MajGov</i>	0.020 (0.020)	-0.010 (0.017)	-0.079 (0.053)	-0.109** (0.072)	0.190*** (0.062)	0.055 (0.062)	-0.281* (0.164)	0.021 (0.027)	-0.027 (0.033)	0.015 (0.045)	0.031 (0.030)	0.010 (0.054)	0.107 (0.157)	-0.030 (0.049)	0.121 (0.186)	
South	<i>ElectYr</i>	0.010 (0.019)	0.001 (0.023)	0.109 (0.303)	0.025 (0.022)	0.020 (0.068)	0.006 (0.035)	-0.011 (0.092)	0.027 (0.019)	-0.003 (0.011)	0.016 (0.023)	-0.025 (0.044)	-0.037 (0.053)	0.115 (0.236)	-0.121 (0.132)	0.209 (0.345)	
	<i>LeftGov</i>	0.013 (0.026)	0.046 (0.034)	0.088 (0.635)	0.025 (0.033)	-0.124 (0.146)	0.160** (0.070)	0.046 (0.134)	0.016 (0.029)	-0.012 (0.015)	-0.017 (0.031)	-0.005 (0.068)	-0.023 (0.077)	-0.385 (0.392)	0.017 (0.214)	0.156 (0.413)	
	<i>MajGov</i>	-0.071** (0.030)	-0.036 (0.038)	0.345 (0.548)	-0.007 (0.039)	-0.226* (0.136)	0.165*** (0.064)	-0.029 (0.151)	-0.057** (0.029)	-0.0							

**Table 6.** Opportunistic effects in the ratios between the public expenditure components

	PubServ	Defence	PubOrder	EconAff	Environm	Housing	Health	Recreat	Educ	SocProtect	TotExpd
<b>PubServ</b>	--	0.031*	0.021	0.045*	0.034**	0.027	0.020*	0.022*	0.024***	0.020***	0.025***
	--	(0.016)	(0.018)	(0.025)	(0.016)	(0.034)	(0.011)	(0.012)	(0.008)	(0.007)	(0.007)
<b>Defence</b>		--	-0.002	0.016	0.005	0.001	-0.009	-0.009	-0.008	-0.011	-0.007
		--	(0.029)	(0.031)	(0.022)	(0.037)	(0.020)	(0.020)	(0.014)	(0.015)	(0.015)
<b>PubOrder</b>			--	0.012	0.002	0.001	-0.009	-0.013	-0.006	-0.006	-0.004
			--	(0.025)	(0.018)	(0.032)	(0.012)	(0.016)	(0.013)	(0.017)	(0.014)
<b>EconAff</b>				--	-0.008	-0.011	-0.025	-0.028	-0.022	-0.024	-0.020
				--	(0.028)	(0.039)	(0.024)	(0.025)	(0.024)	(0.025)	(0.021)
<b>Environm</b>					--	-0.003	-0.013	-0.011	-0.014	-0.016	-0.012
					--	(0.032)	(0.013)	(0.015)	(0.015)	(0.015)	(0.015)
<b>Housing</b>						--	-0.011	-0.013	-0.011	-0.012	-0.009
						--	(0.030)	(0.030)	(0.031)	(0.032)	(0.030)
<b>Health</b>							--	0.003	-0.001	-0.001	0.002
							--	(0.008)	(0.010)	(0.009)	(0.009)
<b>Recreat</b>								--	0.001	-0.002	0.002
								--	(0.010)	(0.011)	(0.010)
<b>Educ</b>									--	-0.004	0.001
									--	(0.005)	(0.005)
<b>SocProtect</b>										--	0.004
										--	(0.005)
<b>TotExpd</b>											--
											--

*Notes:* Bootstrapped standard errors are in parentheses; significance level at which the null hypothesis is rejected: \*\*\*, 1%; \*\*, 5%; and \*, 10%. Each line presents the electoral effect (*ElectYr* coefficient, where each regression was estimated with the same covariates as in the baseline model) for the logarithm of the ratio of the respective component to each of the other components that are in each column. The estimates for the coefficients on the other regressors are not reported here to save space, but they are available upon request. Country and time effects are controlled for in all estimations.

## ANNEX

**Table A.1.** Description of the Variables

Variable	Description
<i>TotExpd</i>	Total general government expenditure, real values (base year: 2005).
<i>PubServ</i>	General public services, which comprises the following items: (i) Executive and legislative organs, financial and fiscal affairs, and external affairs ( <i>ExecAff</i> ); (ii) Foreign economic aid ( <i>ForAid</i> ); (iii) General services ( <i>GServ</i> ); (iv) Basic research ( <i>BasicRD</i> ); (v) R&D general public services ( <i>GServRD</i> ); (vi) Other general public services ( <i>OthServ</i> ); (vii) Public debt transactions ( <i>DebtTRS</i> ); (viii) Transfers of a general character between different levels of government ( <i>TransfGen</i> ).
<i>Defence</i>	Defence expenditures, which comprises the following items: (i) Military defence ( <i>MilDef</i> ); (ii) Civil defence ( <i>CivDef</i> ); (iii) Foreign military aid ( <i>FMilAid</i> ); (iv) R&D defence ( <i>DefRD</i> ); (v) Other defence expenditures ( <i>OthDef</i> ).
<i>PubOrder</i>	Public order and safety, which comprises the following items: (i) Police services ( <i>Police</i> ); (ii) Fire-protection services ( <i>Fire</i> ); (iii) Law courts ( <i>Courts</i> ); (iv) Prisons ( <i>Prisons</i> ); (v) R&D public order and safety ( <i>PubOrdRD</i> ); (vi) Other public order and safety expenditures ( <i>OthPO</i> ).
<i>EconAff</i>	Economic affairs expenditures, which comprises the following items: (i) General economic, commercial and labour affairs ( <i>GenAff</i> ); (ii) Agriculture, forestry, fishing and hunting ( <i>Agric</i> ); (iii) Fuel and energy ( <i>Energy</i> ); (iv) Mining, manufacturing and construction ( <i>Constr</i> ); (v) Transport ( <i>Transp</i> ); (vi) Communication ( <i>Communic</i> ); (vii) Other industries ( <i>OthInd</i> ); (viii) R&D economic affairs ( <i>EAffRD</i> ); (ix) Other economic affairs expenditures ( <i>OthEAff</i> ).
<i>Environm</i>	Environmental protection expenditures, which comprises the following items: (i) Waste management ( <i>Waste</i> ); (ii) Waste water management ( <i>WastWater</i> ); (iii) Pollution abatement ( <i>Pollut</i> ); (iv) Protection of biodiversity and landscape ( <i>Protect</i> ); (v) R&D environmental protection ( <i>EnvirRD</i> ); (vi) Other environmental protection expenditures ( <i>OthEnvir</i> ).
<i>Housing</i>	Housing and community amenities, which comprises the following items: (i) Housing development ( <i>HousDev</i> ); (ii) Community development ( <i>ComDev</i> ); (iii) Water supply ( <i>WatSup</i> ); (iv) Street lighting ( <i>StrLight</i> ); (v) R&D housing and community amenities ( <i>HousRD</i> ); (vi) Other housing and community amenities expenditures ( <i>OthHous</i> ).
<i>Health</i>	Health expenditures, which comprises the following items: (i) Medical products, appliances and equipment ( <i>MedProd</i> ); (ii) Outpatient services ( <i>OutPServ</i> ); (iii) Hospital services ( <i>HospServ</i> ); (iv) Public health services ( <i>PubHlth</i> ); (v) R&D health ( <i>HlthRD</i> ); (vi) Other health expenditures ( <i>OthHlth</i> ).
<i>Recreat</i>	Recreation, culture and religion expenditures, which comprises the following items: (i) Recreational and sporting services ( <i>Sports</i> ); (ii) Cultural services ( <i>Culture</i> ); (iii) Broadcasting and publishing services ( <i>Broadcast</i> ); (iv) Religious and other community services ( <i>Religious</i> ); (v) R&D recreation, culture and religion ( <i>RecrRD</i> ); (vi) Other recreation, culture and religion expenditures ( <i>OthRecr</i> ).
<i>Educ</i>	Education expenditures, which comprises the following items: (i) Pre-primary and primary education ( <i>Prim</i> ); (ii) Secondary education ( <i>Second</i> ); (iii) Post-secondary non-tertiary education ( <i>PosSec</i> ); (iv) Tertiary Education ( <i>Tert</i> ); (v) General education expenditures not defined by level ( <i>Genr</i> ); (vi) Subsidiary services to education ( <i>SubServ</i> ); (vii) R&D education ( <i>EducRD</i> ); (viii) Other education expenditures ( <i>OthEduc</i> ).
<i>SocProtect</i>	Social protection expenditures, which comprises the following items: (i) Sickness and disability ( <i>SickDis</i> ); (ii) Old age ( <i>Olders</i> ); (iii) Survivors ( <i>Survivors</i> ); (iv) Family and children ( <i>Family</i> ); (v) Unemployment protection ( <i>UnemPrt</i> ); (vi) Housing protection ( <i>HousPrt</i> ); (vii) Social exclusion ( <i>SocExcl</i> ); (viii) R&D social protection ( <i>SocPrtRD</i> ); (ix) Other social protection expenditures ( <i>OthSocP</i> ).
<i>ElectYr</i>	Dummy variable that takes de value of 1 in the year of legislative elections; 0 otherwise.
<i>LeftGov</i>	Dummy variable that takes de value of 1 when there is hegemony or dominance of left-wing parties in the cabinet; 0 otherwise.
<i>MajGov</i>	Dummy variable that takes the value of 1 when a single party or coalition has majority in the parliament; 0 otherwise.
<i>GDPpc</i>	Real GDP per capita (constant prices, base year: 2005)
<i>RelPr</i>	Relative prices computed as the ratio of the government final consumption deflator to the GDP deflator.
<i>Pop</i>	Population, in thousands.

*Notes:* All government expenditure components are in real values (base year: 2005).

Sources: OECD (2009), *Government at a Glance*; Eurostat (<http://ec.europa.eu/eurostat/data/database>); Comparative Political Data Set I (<http://www.cpds-data.org/>).

**Table A.2.** Descriptive Statistics

	<b>Obs</b>	<b>Mean</b>	<b>Std.Dev.</b>	<b>Min.</b>	<b>Max.</b>
<i>TotExpdpc</i>	365	13.915	5.299	4.381	32.934
<i>PubServpc</i>	365	2.009	0.662	0.777	3.727
<i>Defencepc</i>	365	0.415	0.236	0.003	1.109
<i>PubOrderpc</i>	365	0.433	0.152	0.002	1.088
<i>EconAffpc</i>	365	1.380	0.731	0.127	7.985
<i>Environmpc</i>	365	0.225	0.165	0.022	0.855
<i>Housingpc</i>	365	0.240	0.166	0.020	1.517
<i>Healthpc</i>	365	1.868	0.835	0.130	5.552
<i>Recreatpc</i>	365	0.372	0.254	0.010	1.465
<i>Educpc</i>	365	1.665	0.758	0.356	4.155
<i>SocProtectpc</i>	365	5.307	2.430	1.028	13.217
<i>ElectYr</i>	414	0.261	0.440	0	1
<i>LeftGov</i>	414	0.264	0.441	0	1
<i>MajGov</i>	414	0.742	0.438	0	1
<i>GDPpc</i>	414	37.849	12.042	20.257	90.975
<i>RelPr</i>	408	0.941	0.073	0.739	1.073
<i>Pop</i>	414	21765.280	24942.880	254.800	82502.000

*Notes:* All the government expenditures and GDP are in thousands of Euros per capita (in real values, base year: 2005); *RelPr* is a ratio; and the total population is in thousands. Time period: 1990-2012 (annual data); Countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

**Table A.3.** Sensitivity analysis I: Electoral timing

<i>Log of (p.c.)</i>	<b>TotExpd</b>	<b>PubServ</b>	<b>Defence</b>	<b>PubOrder</b>	<b>EconAff</b>	<b>Environm</b>	<b>Housing</b>	<b>Health</b>	<b>Recreat</b>	<b>Educ</b>	<b>SocProtect</b>
<b>Before</b>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<i>YrBefElect</i>	0.005 (0.007)	0.009 (0.008)	-0.006 (0.017)	0.014 (0.019)	0.035 (0.026)	0.011 (0.017)	0.047 (0.036)	-0.004 (0.012)	0.020 (0.013)	0.002 (0.008)	-0.003 (0.006)
<i>ElectYr</i>	0.012** (0.006)	0.033*** (0.007)	0.003 (0.017)	0.010 (0.018)	-0.001 (0.025)	0.003 (0.017)	0.017 (0.034)	0.011 (0.011)	0.018 (0.012)	0.013** (0.006)	0.015** (0.006)
<i>LeftGov</i>	0.001 (0.008)	0.000 (0.008)	-0.008 (0.019)	-0.034 (0.020)	-0.009 (0.037)	0.032* (0.018)	0.056 (0.036)	0.007 (0.012)	0.011 (0.014)	0.017* (0.009)	0.003 (0.007)
<i>MajGov</i>	0.008 (0.012)	0.019 (0.013)	-0.002 (0.030)	-0.015 (0.030)	0.015 (0.032)	0.013 (0.028)	0.006 (0.058)	0.007 (0.019)	0.004 (0.021)	-0.004 (0.013)	0.014 (0.011)
<i>LnGDPpc</i>	0.141*** (0.046)	0.002 (0.051)	0.204* (0.123)	0.667*** (0.137)	0.120 (0.182)	0.436*** (0.122)	0.418* (0.247)	0.456*** (0.091)	0.440*** (0.093)	0.193*** (0.051)	0.023 (0.044)
<i>LnRelPr</i>	0.001 (0.085)	0.021 (0.093)	0.066 (0.230)	-0.013 (0.218)	0.242 (0.334)	-0.145 (0.206)	-0.186 (0.435)	-0.060 (0.138)	-0.199 (0.152)	0.010 (0.092)	0.031 (0.075)
<i>LnPop</i>	-0.253** (0.126)	0.147 (0.121)	-0.572* (0.294)	0.254 (0.306)	0.600 (0.550)	-0.662** (0.279)	-0.278 (0.592)	-0.262 (0.195)	-0.531** (0.216)	-0.549*** (0.135)	-0.041 (0.110)
<i>DepVar(-1)</i>	0.933*** (0.029)	0.943*** (0.029)	0.829*** (0.041)	0.362*** (0.034)	0.529*** (0.050)	0.797*** (0.036)	0.491*** (0.049)	0.720*** (0.032)	0.794*** (0.030)	0.951*** (0.025)	0.948*** (0.025)
<b>Before 12m</b>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<i>Bef12Elect</i>	0.018* (0.010)	0.023** (0.011)	0.032 (0.024)	0.001 (0.027)	0.042 (0.037)	-0.007 (0.024)	0.030 (0.050)	0.001 (0.016)	0.014 (0.018)	0.011* (0.006)	0.017** (0.008)
<i>LeftGov</i>	0.001 (0.008)	-0.003 (0.008)	-0.009 (0.019)	-0.034 (0.020)	-0.006 (0.038)	0.033* (0.018)	0.058 (0.036)	0.006 (0.012)	0.011 (0.014)	0.016* (0.009)	0.002 (0.007)
<i>MajGov</i>	0.009 (0.012)	0.021 (0.013)	0.001 (0.030)	-0.016 (0.030)	0.015 (0.033)	0.011 (0.028)	0.005 (0.058)	0.007 (0.019)	0.003 (0.021)	-0.004 (0.013)	0.014 (0.011)
<i>LnGDPpc</i>	0.140*** (0.046)	0.002 (0.053)	0.199 (0.123)	0.669*** (0.137)	0.113 (0.182)	0.438*** (0.122)	0.415* (0.248)	0.457*** (0.091)	0.441*** (0.093)	0.192*** (0.051)	0.024 (0.045)
<i>LnRelPr</i>	0.003 (0.085)	0.019 (0.097)	0.081 (0.229)	-0.020 (0.217)	0.250 (0.336)	-0.151 (0.206)	-0.194 (0.435)	-0.062 (0.138)	-0.206 (0.152)	0.010 (0.092)	0.030 (0.076)
<i>LnPop</i>	-0.250** (0.126)	0.150 (0.125)	-0.573* (0.293)	0.261 (0.306)	0.633 (0.550)	-0.656** (0.278)	-0.248 (0.592)	-0.263 (0.195)	-0.520** (0.216)	-0.548*** (0.134)	-0.040 (0.110)
<i>DepVar(-1)</i>	0.933*** (0.029)	0.939*** (0.030)	0.826*** (0.041)	0.362*** (0.034)	0.524*** (0.050)	0.796*** (0.036)	0.491*** (0.049)	0.720*** (0.032)	0.794*** (0.030)	0.952*** (0.025)	0.947*** (0.026)
<b>After</b>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<i>YrAftElect</i>	-0.004 (0.007)	-0.003 (0.008)	0.014 (0.017)	-0.003 (0.019)	0.003 (0.027)	-0.006 (0.017)	-0.024 (0.036)	-0.008 (0.012)	-0.015 (0.013)	-0.013* (0.008)	-0.010 (0.006)
<i>LeftGov</i>	0.001 (0.008)	-0.003 (0.008)	-0.008 (0.019)	-0.033 (0.020)	-0.007 (0.038)	0.033* (0.018)	0.058 (0.036)	0.006 (0.012)	0.011 (0.014)	0.016* (0.008)	0.002 (0.007)
<i>MajGov</i>	0.007 (0.012)	0.020 (0.013)	-0.001 (0.030)	-0.016 (0.030)	0.012 (0.032)	0.011 (0.029)	0.002 (0.059)	0.007 (0.019)	0.001 (0.021)	-0.005 (0.013)	0.013 (0.011)
<i>LnGDPpc</i>	0.142*** (0.046)	0.004 (0.053)	0.204* (0.123)	0.669*** (0.137)	0.121 (0.182)	0.437*** (0.122)	0.421* (0.248)	0.455*** (0.091)	0.442*** (0.093)	0.191*** (0.051)	0.023 (0.044)
<i>LnRelPr</i>	-0.004 (0.085)	0.014 (0.097)	0.067 (0.230)	-0.020 (0.217)	0.233 (0.334)	-0.148 (0.206)	-0.206 (0.435)	-0.063 (0.138)	-0.212 (0.152)	0.006 (0.091)	0.029 (0.075)
<i>LnPop</i>	-0.252** (0.126)	0.149 (0.125)	-0.582** (0.294)	0.262 (0.306)	0.621 (0.553)	-0.651** (0.279)	-0.235 (0.595)	-0.259 (0.195)	-0.517** (0.216)	-0.544*** (0.134)	-0.039 (0.109)
<i>DepVar(-1)</i>	0.935*** (0.029)	0.939*** (0.030)	0.829*** (0.041)	0.362*** (0.034)	0.526*** (0.050)	0.796*** (0.036)	0.490*** (0.049)	0.721*** (0.031)	0.796*** (0.030)	0.955*** (0.025)	0.949*** (0.026)
<b>Timing</b>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<i>ElectTiming</i>	0.019* (0.011)	0.034*** (0.012)	-0.006 (0.027)	0.009 (0.029)	0.004 (0.037)	0.005 (0.026)	0.047 (0.054)	0.013 (0.018)	0.025 (0.020)	0.020** (0.010)	0.018** (0.008)
<i>LeftGov</i>	0.001 (0.008)	-0.002 (0.008)	-0.009 (0.019)	-0.033 (0.020)	-0.007 (0.037)	0.033* (0.018)	0.059 (0.036)	0.006 (0.012)	0.011 (0.014)	0.016* (0.009)	0.002 (0.007)
<i>MajGov</i>	0.008 (0.012)	0.020 (0.013)	-0.002 (0.030)	-0.016 (0.030)	0.012 (0.033)	0.012 (0.028)	0.003 (0.058)	0.007 (0.019)	0.002 (0.021)	-0.004 (0.013)	0.014 (0.011)
<i>LnGDPpc</i>	0.141*** (0.046)	0.001 (0.052)	0.205* (0.123)	0.669*** (0.137)	0.120 (0.182)	0.436*** (0.122)	0.416* (0.248)	0.455*** (0.091)	0.441*** (0.093)	0.192*** (0.051)	0.022 (0.044)
<i>LnRelPr</i>	-0.001 (0.085)	0.024 (0.095)	0.066 (0.229)	-0.018 (0.217)	0.234 (0.333)	-0.147 (0.205)	-0.195 (0.434)	-0.059 (0.138)	-0.206 (0.151)	0.010 (0.091)	0.033 (0.075)
<i>LnPop</i>	-0.251** (0.126)	0.148 (0.123)	-0.575* (0.294)	0.262 (0.306)	0.625 (0.552)	-0.653** (0.279)	-0.242 (0.594)	-0.261 (0.195)	-0.518** (0.216)	-0.546*** (0.134)	-0.040 (0.109)
<i>DepVar(-1)</i>	0.934*** (0.029)	0.944*** (0.030)	0.829*** (0.041)	0.362*** (0.034)	0.526*** (0.050)	0.796*** (0.036)	0.490*** (0.049)	0.721*** (0.032)	0.794*** (0.030)	0.952*** (0.025)	0.949*** (0.025)
No. Observ.	341	341	341	341	339	341	341	341	341	341	341
No. Countr.	18	18	18	18	18	18	18	18	18	18	18

*Notes:* See Table 1. Bootstrapped standard errors are in parentheses; significance level at which the null hypothesis is rejected: \*\*\*, 1%; \*\*, 5%; and \*, 10%. *Bef12Elect* a pre-election variable measuring the part of a year that is within 12 months before an election. Electoral timing is a variable that measures the proportion of time a government is in office in a particular year, since it has been elected (until the next election); it is equal to 1 in the election year. Variables for the interactions between *ElectYr* and *LeftGov*, *MajGov* and *Unemp* were also considered in other regressions, but the respective coefficients were always statistically insignificant. Those results are not reported here to save space, but they are available upon request. Country and time effects are controlled for in all estimations.



**Table A.4.** Sensitivity analysis II: Political orientation, political support, unemployment and population

<i>Log of (p.c.)</i>	TotExpd	PubServ	Defence	PubOrder	EconAff	Environm	Housing	Health	Recreat	Educ	SocProtect
<b>Orientation &amp; Support</b>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<i>ElectYr</i>	0.0012* (0.007)	0.027*** (0.008)	0.002 (0.018)	0.003 (0.019)	-0.017 (0.026)	-0.001 (0.017)	0.004 (0.035)	0.010 (0.012)	0.005 (0.013)	0.013* (0.008)	0.016** (0.006)
<i>Partisan1</i>	-0.006 (0.010)	0.011 (0.010)	0.015 (0.024)	0.049* (0.025)	-0.028 (0.042)	-0.044* (0.023)	-0.105** (0.045)	-0.014 (0.016)	-0.023 (0.017)	-0.019* (0.011)	0.002 (0.008)
<i>Partisan2</i>	0.011 (0.015)	0.036** (0.017)	0.018 (0.038)	0.059 (0.042)	0.054 (0.065)	-0.024 (0.038)	-0.042 (0.077)	0.015 (0.026)	0.018 (0.029)	-0.020 (0.017)	0.002 (0.014)
<i>Partisan3</i>	-0.010 (0.014)	0.028* (0.015)	0.015 (0.035)	0.027 (0.036)	-0.034 (0.049)	-0.044 (0.034)	-0.121* (0.067)	-0.028 (0.023)	-0.010 (0.025)	-0.025 (0.015)	-0.018 (0.013)
<i>Partisan4</i>	-0.018 (0.017)	0.042** (0.019)	0.016 (0.044)	0.016 (0.045)	-0.110* (0.059)	-0.043 (0.042)	-0.160* (0.085)	-0.025 (0.028)	-0.018 (0.031)	-0.011 (0.019)	-0.001 (0.016)
<i>GovSup&gt;50%</i>	0.006 (0.013)	0.010 (0.014)	-0.010 (0.032)	-0.004 (0.034)	0.047 (0.039)	0.005 (0.031)	-0.009 (0.064)	0.015 (0.021)	0.012 (0.023)	-0.005 (0.014)	0.007 (0.011)
<i>LnGDPpc</i>	0.154*** (0.044)	0.005 (0.051)	0.200* (0.120)	0.660*** (0.134)	0.185 (0.175)	0.452*** (0.119)	0.463* (0.242)	0.466*** (0.088)	0.460*** (0.092)	0.192*** (0.049)	0.019 (0.042)
<i>LnRelPr</i>	-0.047 (0.087)	0.012 (0.095)	0.078 (0.233)	-0.031 (0.226)	-0.011 (0.341)	-0.228 (0.213)	-0.437 (0.446)	-0.127 (0.143)	-0.277* (0.157)	-0.002 (0.094)	0.015 (0.076)
<i>LnPop</i>	-0.256** (0.129)	0.126 (0.128)	-0.582* (0.300)	0.227 (0.310)	0.549 (0.530)	-0.631** (0.283)	-0.147 (0.600)	-0.287 (0.197)	-0.562** (0.219)	-0.541*** (0.138)	-0.049 (0.114)
<i>DepVar(-1)</i>	0.931*** (0.027)	0.931*** (0.030)	0.829*** (0.040)	0.361*** (0.034)	0.522*** (0.051)	0.800*** (0.035)	0.480*** (0.045)	0.719*** (0.031)	0.794*** (0.029)	0.953*** (0.025)	0.954*** (0.024)
No. Observ.	341	341	341	341	339	341	341	341	341	341	341
No.Countr.	18	18	18	18	18	18	18	18	18	18	18
<b>Unemp &amp; Population</b>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<i>ElectYr</i>	0.011* (0.006)	0.036*** (0.007)	0.005 (0.016)	0.007 (0.017)	-0.009 (0.025)	0.002 (0.015)	0.008 (0.032)	0.015 (0.010)	0.013 (0.011)	0.012* (0.007)	0.016*** (0.006)
<i>LeftGov</i>	-0.003 (0.007)	0.006 (0.008)	-0.018 (0.018)	-0.010 (0.019)	-0.010 (0.036)	0.013 (0.017)	0.031 (0.034)	0.010 (0.011)	0.005 (0.012)	0.011 (0.007)	0.001 (0.006)
<i>MajGov</i>	0.006 (0.011)	0.027** (0.013)	-0.008 (0.029)	0.027 (0.029)	0.012 (0.032)	-0.006 (0.027)	-0.026 (0.055)	0.016 (0.018)	0.001 (0.019)	-0.005 (0.012)	0.014 (0.010)
<i>Unemp</i>	-0.006*** (0.001)	0.003*** (0.001)	-0.010*** (0.003)	-0.014*** (0.003)	-0.010** (0.005)	-0.014*** (0.003)	-0.022*** (0.005)	-0.013*** (0.002)	-0.012*** (0.002)	-0.008*** (0.001)	-0.003*** (0.001)
<i>LnRelPr</i>	0.030 (0.073)	0.118 (0.085)	0.040 (0.203)	0.951*** (0.210)	0.760** (0.321)	0.057 (0.197)	0.030 (0.372)	0.228* (0.132)	0.032 (0.143)	0.060 (0.079)	0.024 (0.066)
<i>Young</i>	0.006 (0.005)	0.003 (0.006)	0.008 (0.014)	0.017 (0.014)	-0.034* (0.020)	-0.034*** (0.013)	-0.083*** (0.027)	0.010 (0.009)	-0.003 (0.010)	0.016*** (0.006)	0.007 (0.005)
<i>Elderly</i>	0.003 (0.005)	0.004 (0.005)	0.007 (0.012)	0.011 (0.012)	-0.054*** (0.018)	-0.026** (0.011)	-0.081*** (0.022)	0.007 (0.007)	-0.004 (0.008)	0.007 (0.005)	0.003 (0.004)
<i>DepVar(-1)</i>	0.957*** (0.023)	0.945*** (0.028)	0.815*** (0.037)	0.431*** (0.031)	0.504*** (0.047)	0.766*** (0.032)	0.385*** (0.047)	0.801*** (0.024)	0.830*** (0.024)	0.948*** (0.020)	0.967*** (0.020)
No. Observ.	341	341	341	341	339	341	341	341	341	341	341
No.Countr.	18	18	18	18	18	18	18	18	18	18	18

*Notes:* See Table 1. Bootstrapped standard errors are in parentheses; significance level at which the null hypothesis is rejected: \*\*\*, 1%; \*\*, 5%; and \*, 10%. Variables for the interactions between *LeftGov*, *MajGov* (or *GovSup>50%*) and *Unemp* (unemployment rate) were also considered in other regressions, but the respective coefficients were always statistically insignificant. Those results are not reported here, but they are available upon request. Country and time effects are controlled for in all estimations.

**Table A.5.** Additional robustness checks I: EMU and non-EMU-countries, before and after the Euro

<i>Log of (p.c.)</i>	TotExpd	PubServ	Defence	PubOrder	EconAff	Environm	Housing	Health	Recreat	Educ	SocProtect
<b>EMU</b>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<i>ElectYr</i>	0.014** (0.006)	0.028*** (0.006)	0.009 (0.016)	0.001 (0.019)	0.004 (0.027)	0.004 (0.018)	0.044 (0.035)	0.016 (0.012)	0.013 (0.013)	0.013** (0.006)	0.014*** (0.005)
<i>LeftGov</i>	0.001 (0.012)	-0.009 (0.012)	0.001 (0.030)	-0.079 (0.049)	-0.007 (0.047)	0.010 (0.032)	0.040 (0.061)	0.030 (0.022)	0.002 (0.025)	0.007 (0.012)	0.007 (0.009)
<i>MajGov</i>	0.006 (0.012)	0.017 (0.012)	-0.006 (0.030)	-0.052 (0.034)	0.006 (0.048)	-0.014 (0.033)	-0.044 (0.062)	-0.003 (0.022)	-0.032 (0.024)	-0.012 (0.012)	0.013 (0.009)
<i>LnGDPpc</i>	0.164*** (0.056)	-0.023 (0.050)	0.043 (0.140)	0.509*** (0.154)	-0.020 (0.222)	0.562*** (0.154)	0.641** (0.287)	0.550*** (0.108)	0.522*** (0.117)	0.247*** (0.060)	0.044 (0.040)
<i>LnRelPr</i>	0.203** (0.104)	0.167* (0.098)	0.457* (0.267)	0.404 (0.295)	0.204 (0.425)	-0.337 (0.272)	-0.360 (0.528)	0.461** (0.199)	0.084 (0.210)	0.176* (0.104)	0.184** (0.076)
<i>LnPop</i>	0.308** (0.122)	0.103 (0.109)	-0.446* (0.257)	0.798*** (0.293)	1.538*** (0.462)	-0.136 (0.270)	-0.462 (0.534)	0.132 (0.197)	-0.236 (0.210)	-0.301*** (0.108)	0.189** (0.085)
<i>DepVar(-1)</i>	0.668*** (0.044)	0.958*** (0.033)	0.729*** (0.052)	0.269*** (0.031)	0.393*** (0.057)	0.665*** (0.042)	0.512*** (0.047)	0.479*** (0.041)	0.667*** (0.035)	0.804*** (0.033)	0.841*** (0.031)
No. Observ.	237	237	237	237	237	237	237	237	237	237	237
No. Countr.	12	12	12	12	12	12	12	12	12	12	12
<b>Non-EMU</b>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<i>ElectYr</i>	0.003 (0.015)	0.046** (0.019)	-0.019 (0.034)	0.017 (0.018)	-0.061 (0.039)	-0.028 (0.030)	-0.087 (0.067)	0.011 (0.018)	0.013 (0.022)	0.007 (0.018)	0.019 (0.017)
<i>LeftGov</i>	-0.005 (0.013)	0.018 (0.024)	-0.036 (0.037)	0.007 (0.016)	-0.011 (0.055)	0.059** (0.029)	0.088 (0.061)	0.007 (0.014)	0.012 (0.021)	0.020 (0.015)	-0.001 (0.017)
<i>MajGov</i>	0.019 (0.025)	0.028 (0.035)	0.035 (0.064)	0.023 (0.030)	0.056 (0.084)	0.109* (0.056)	0.153 (0.116)	0.005 (0.028)	0.074* (0.039)	0.010 (0.029)	0.024 (0.029)
<i>LnGDPpc</i>	0.142 (0.122)	0.089 (0.148)	0.665** (0.263)	0.210 (0.161)	0.615 (0.406)	0.308 (0.226)	-0.260 (0.508)	0.038 (0.130)	0.187 (0.185)	0.132 (0.152)	-0.048 (0.150)
<i>LnRelPr</i>	-0.161 (0.212)	-0.273 (0.274)	-0.617 (0.505)	-0.156 (0.258)	0.117 (0.772)	0.207 (0.476)	0.019 (0.858)	-0.136 (0.228)	-0.052 (0.339)	-0.166 (0.242)	-0.085 (0.242)
<i>LnPop</i>	-0.598** (0.301)	0.095 (0.409)	-1.978*** (0.738)	-0.872** (0.355)	-1.450 (1.411)	-1.692*** (0.603)	0.242 (1.395)	-0.690** (0.348)	-1.131** (0.474)	-0.864** (0.343)	-0.275 (0.343)
<i>DepVar(-1)</i>	1.024*** (0.069)	0.866*** (0.096)	0.975*** (0.087)	1.005*** (0.075)	0.789*** (0.103)	0.899*** (0.077)	0.366*** (0.104)	1.061*** (0.046)	1.011*** (0.083)	1.031*** (0.065)	1.005*** (0.079)
No. Observ.	104	104	104	104	102	104	104	104	104	104	104
No. Countr.	6	6	6	6	6	6	6	6	6	6	6
<b>1990-1998</b>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<i>ElectYr</i>	0.023* (0.012)	0.029** (0.012)	0.026 (0.032)	-0.006 (0.034)	-0.011 (0.038)	0.023 (0.039)	0.027 (0.061)	0.019 (0.026)	0.003 (0.026)	0.031** (0.014)	0.023** (0.010)
<i>LeftGov</i>	0.036* (0.020)	0.003 (0.019)	0.014 (0.054)	-0.013 (0.059)	0.041 (0.067)	0.085 (0.064)	-0.064 (0.098)	0.067 (0.042)	0.087** (0.043)	0.059** (0.024)	0.041** (0.018)
<i>MajGov</i>	0.044* (0.026)	0.047* (0.027)	0.089 (0.069)	0.101 (0.076)	0.028 (0.089)	0.013 (0.089)	0.115 (0.134)	0.052 (0.056)	0.023 (0.057)	0.046 (0.031)	0.034 (0.022)
<i>LnGDPpc</i>	0.254 (0.186)	0.022 (0.204)	0.086 (0.494)	0.678 (0.564)	0.244 (0.668)	0.856 (0.647)	1.238 (0.978)	0.702 (0.432)	0.746* (0.419)	0.248 (0.212)	0.047 (0.153)
<i>LnRelPr</i>	-0.143 (0.391)	-0.013 (0.429)	0.089 (1.043)	-0.512 (1.194)	0.388 (1.375)	0.031 (1.443)	-1.428 (2.139)	0.277 (0.878)	-0.521 (0.910)	0.470 (0.456)	0.043 (0.325)
<i>LnPop</i>	-0.505 (0.921)	0.889 (1.056)	0.014 (2.500)	1.045 (2.590)	-2.439 (3.111)	-2.051 (3.129)	-2.528 (4.587)	-0.006 (1.907)	-0.346 (1.963)	-0.313 (0.992)	0.268 (0.736)
<i>DepVar(-1)</i>	0.765*** (0.067)	1.042*** (0.084)	0.483*** (0.099)	0.076* (0.042)	0.402*** (0.103)	0.598*** (0.080)	0.268*** (0.096)	0.327*** (0.076)	0.493*** (0.064)	0.769*** (0.055)	0.724*** (0.059)
No. Observ.	98	98	98	98	98	98	98	98	98	98	98
No. Countr.	16	16	16	16	16	16	16	16	16	16	16
<b>1999-2012</b>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<i>ElectYr</i>	0.013* (0.007)	0.034*** (0.010)	-0.012 (0.021)	0.008 (0.011)	-0.007 (0.030)	-0.009 (0.016)	-0.013 (0.046)	0.014 (0.010)	0.012 (0.015)	0.017* (0.010)	0.016* (0.009)
<i>LeftGov</i>	-0.002 (0.014)	0.007 (0.015)	-0.014 (0.031)	0.009 (0.017)	-0.032 (0.040)	0.008 (0.023)	0.097 (0.067)	0.010 (0.016)	0.003 (0.022)	0.015 (0.015)	0.002 (0.013)
<i>MajGov</i>	-0.004 (0.016)	0.005 (0.018)	-0.035 (0.039)	0.008 (0.019)	0.003 (0.068)	-0.027 (0.027)	0.007 (0.082)	-0.008 (0.017)	0.001 (0.025)	-0.013 (0.017)	0.000 (0.015)
<i>LnGDPpc</i>	0.104 (0.088)	0.089 (0.099)	0.337 (0.212)	0.094 (0.111)	0.301 (0.401)	0.261* (0.153)	0.548 (0.493)	0.124 (0.099)	0.381*** (0.142)	0.132 (0.093)	-0.080 (0.083)
<i>LnRelPr</i>	0.038 (0.124)	0.095 (0.141)	-0.280 (0.308)	0.030 (0.157)	0.357 (0.464)	-0.390* (0.220)	0.562 (0.653)	-0.057 (0.140)	-0.026 (0.201)	-0.032 (0.130)	0.128 (0.117)
<i>LnPop</i>	-0.366** (0.173)	0.039 (0.190)	-0.357 (0.384)	-0.541*** (0.193)	0.298 (0.803)	-0.516* (0.263)	-1.120 (0.862)	-0.645*** (0.181)	-0.909*** (0.284)	-0.588*** (0.166)	-0.193 (0.164)
<i>DepVar(-1)</i>	0.999*** (0.038)	0.920*** (0.045)	0.898*** (0.050)	0.940*** (0.022)	0.534*** (0.083)	0.927*** (0.037)	0.495*** (0.068)	1.012*** (0.025)	0.961*** (0.032)	1.015*** (0.033)	1.008*** (0.040)
No. Observ.	226	226	226	226	224	226	226	226	226	226	226
No. Countr.	18	18	18	18	18	18	18	18	18	18	18

*Notes:* See Table 1. Bootstrapped standard errors are in parentheses; significance level at which the null hypothesis is rejected: \*\*\*, 1%; \*\*, 5%; and \*, 10%. In the first set of estimations, we distinguish between those countries that took part in the European and Monetary Union (EMU) and the others that do not; in the second set of regressions, and according to our sample period, we restrict the analysis to the periods before (1990-1998) and after (1999-2012) the introduction of the Euro. Time effects are controlled for in all estimations.

**Table A.6.** Additional robustness checks II: EU-countries, before financial crisis (1990-2007), and BCFE estimator

<i>Log of (p.c.)</i>	<b>TotExpd</b>	<b>PubServ</b>	<b>Defence</b>	<b>PubOrder</b>	<b>EconAff</b>	<b>Environm</b>	<b>Housing</b>	<b>Health</b>	<b>Recreat</b>	<b>Educ</b>	<b>SocProtect</b>
<b>EU</b>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<i>ElectYr</i>	0.016** (0.007)	0.030*** (0.008)	0.013 (0.017)	0.008 (0.022)	0.002 (0.022)	0.005 (0.020)	0.033 (0.035)	0.015 (0.013)	0.014 (0.014)	0.015** (0.008)	0.015** (0.006)
<i>LeftGov</i>	0.019* (0.011)	-0.005 (0.012)	0.022 (0.027)	-0.021 (0.030)	0.039 (0.036)	0.050* (0.029)	0.053 (0.051)	0.031* (0.018)	0.021 (0.021)	0.024** (0.012)	0.011 (0.009)
<i>MajGov</i>	0.007 (0.011)	0.013 (0.013)	-0.008 (0.028)	-0.039 (0.033)	0.018 (0.048)	0.009 (0.032)	-0.021 (0.056)	-0.006 (0.020)	-0.014 (0.023)	-0.009 (0.012)	0.013 (0.009)
<i>LnGDPpc</i>	0.158*** (0.054)	-0.028 (0.060)	0.066 (0.132)	0.572*** (0.155)	0.002 (0.153)	0.520*** (0.155)	0.494* (0.265)	0.544*** (0.099)	0.476*** (0.109)	0.241*** (0.057)	0.039 (0.044)
<i>LnRelPr</i>	0.153 (0.095)	0.090 (0.105)	0.299 (0.242)	0.367 (0.279)	0.486 (0.334)	-0.011 (0.269)	-0.226 (0.476)	0.382** (0.169)	-0.101 (0.184)	0.109 (0.098)	0.109 (0.076)
<i>LnPop</i>	0.115 (0.111)	0.157 (0.124)	-0.430* (0.236)	0.529** (0.268)	1.100** (0.521)	-0.532** (0.258)	-0.600 (0.475)	0.083 (0.161)	-0.323* (0.182)	-0.380*** (0.106)	0.209** (0.093)
<i>DepVar(-1)</i>	0.747*** (0.031)	0.955*** (0.030)	0.751*** (0.038)	0.301*** (0.032)	0.447*** (0.055)	0.711*** (0.035)	0.588*** (0.035)	0.521*** (0.036)	0.728*** (0.028)	0.844*** (0.026)	0.844*** (0.024)
No. Observ.	298	298	298	298	296	298	298	298	298	298	298
No. Countr.	15	15	15	15	15	15	15	15	15	15	15
<b>1990-2007</b>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<i>ElectYr</i>	0.020*** (0.007)	0.034*** (0.009)	0.000 (0.018)	0.002 (0.024)	0.020 (0.024)	-0.000 (0.022)	0.008 (0.041)	0.013 (0.015)	0.012 (0.015)	0.014* (0.008)	0.015** (0.007)
<i>LeftGov</i>	0.012 (0.009)	-0.002 (0.012)	0.017 (0.026)	-0.031 (0.032)	0.036 (0.032)	0.061** (0.030)	0.033 (0.053)	0.027 (0.019)	0.022 (0.020)	0.020* (0.011)	0.007 (0.009)
<i>MajGov</i>	0.016* (0.009)	0.029** (0.013)	0.017 (0.028)	-0.000 (0.035)	0.028 (0.048)	0.019 (0.032)	0.017 (0.058)	0.034* (0.021)	-0.014 (0.022)	0.001 (0.012)	0.023** (0.010)
<i>LnGDPpc</i>	0.154*** (0.053)	0.021 (0.068)	0.017 (0.155)	0.584*** (0.197)	0.012 (0.261)	0.550*** (0.177)	0.263 (0.341)	0.680*** (0.125)	0.417*** (0.127)	0.214*** (0.065)	0.050 (0.058)
<i>LnRelPr</i>	0.035 (0.083)	0.026 (0.112)	0.404 (0.248)	0.451 (0.318)	0.318 (0.345)	0.157 (0.308)	-0.453 (0.517)	0.135 (0.195)	-0.110 (0.206)	0.123 (0.102)	0.075 (0.086)
<i>LnPop</i>	-0.086 (0.171)	0.062 (0.229)	-0.227 (0.510)	0.735 (0.659)	0.957 (0.964)	-0.865 (0.607)	0.745 (1.163)	-0.161 (0.392)	0.184 (0.424)	-0.482** (0.206)	0.229 (0.172)
<i>DepVar(-1)</i>	0.841*** (0.035)	0.960*** (0.038)	0.838*** (0.050)	0.255*** (0.037)	0.437*** (0.054)	0.698*** (0.044)	0.511*** (0.055)	0.502*** (0.041)	0.692*** (0.037)	0.887*** (0.032)	0.838*** (0.034)
No. Observ.	253	253	253	253	251	253	253	253	253	253	253
No. Countr.	18	18	18	18	18	18	18	18	18	18	18
<b>BCFE</b>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<i>ElectYr</i>	0.011** (0.005)	0.037*** (0.007)	0.003 (0.012)	0.005 (0.010)	-0.009 (0.020)	-0.001 (0.010)	0.004 (0.031)	0.013 (0.015)	0.012 (0.009)	0.012** (0.006)	0.016*** (0.005)
<i>LeftGov</i>	-0.000 (0.013)	-0.000 (0.006)	-0.009 (0.030)	-0.043 (0.046)	-0.024 (0.052)	0.025 (0.036)	0.051* (0.027)	0.004 (0.025)	0.010 (0.025)	0.014 (0.015)	0.003 (0.015)
<i>MajGov</i>	0.004 (0.017)	0.019*** (0.004)	0.001 (0.038)	-0.015 (0.021)	0.008 (0.026)	0.004 (0.017)	0.007 (0.068)	0.003 (0.023)	-0.002 (0.020)	-0.010 (0.011)	0.014 (0.010)
<i>LnGDPpc</i>	0.194** (0.092)	0.070 (0.043)	0.183* (0.100)	0.664** (0.283)	0.122 (0.227)	0.443*** (0.137)	0.378 (0.535)	0.476* (0.287)	0.437*** (0.115)	0.243*** (0.059)	0.139** (0.065)
<i>LnRelPr</i>	-0.080 (0.148)	-0.061 (0.085)	-0.040 (0.272)	0.006 (0.331)	0.031 (0.844)	-0.143 (0.387)	-0.238 (0.454)	-0.087 (0.270)	-0.238 (0.317)	-0.061 (0.108)	-0.057 (0.125)
<i>LnPop</i>	-0.276 (0.409)	0.097 (0.106)	-0.546 (0.402)	0.235 (0.795)	0.668 (0.876)	-0.604 (0.491)	-0.160 (0.602)	-0.260 (0.430)	-0.479* (0.261)	-0.498* (0.292)	-0.054 (0.252)
<i>DepVar(-1)</i>	0.966*** (0.143)	1.010*** (0.021)	0.812*** (0.101)	0.355 (0.355)	0.508*** (0.104)	0.777*** (0.126)	0.471*** (0.142)	0.710*** (0.210)	0.796*** (0.156)	0.997*** (0.086)	0.995*** (0.109)
No. Observ.	341	341	341	341	330	341	341	341	341	341	341
No. Countr.	18	18	18	18	18	18	18	18	18	18	18

*Notes:* See Table 1. Bootstrapped standard errors are in parentheses; significance level at which the null hypothesis is rejected: \*\*\*, 1%; \*\*, 5%; and \*, 10%. In the first set of estimations, we consider only the group of European Union (EU) countries in our sample; in the second set, we restrict the analysis to the period before the recent great financial crisis: 1990-2007. In the last set of estimations, we employ the bootstrap-based bias-corrected fixed effects (BCFE) estimator developed by Vos et al. (2015); 250 bootstrap iterations were used for the construction of the bias-corrected FE estimator; standard errors are also bootstrapped and are then used to calculate confidence intervals using the Student t-distribution; the residuals to be used in the bootstrap procedure (resampling scheme) are drawn from the normal distribution with estimated homogeneous variance. Time effects are controlled for in all estimations.