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JEL Classification: P16, R1, R12, R42, R58, H54

Keywords: Public investment, pork-barrel politics, elections, regional policy, Greece

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1. Introduction

The analysis of the territorial allocation of public expenditure is an area of research with a long tradition. At the crossroads between public economics, political science, and political geography, the literature on the implications of pork-barrel politics has increasingly become more theoretically and empirically sophisticated (Golden and Min 2013). Different empirical studies offer a variety of outcomes and interpretations, depending on the discipline of origin, the approach adopted, or the individual countries or groups of countries covered.

One of the drivers of this type of research is the realisation that government decisions about the geographical allocation of public spending are not always driven only by 'objective' socio-economic criteria, such as efficiency and/or equity, as the normative theory of public finance would claim (Buchanan 1950), but also by political considerations (Oates 1972; Bennett 1980). And in few countries has the link between pork-barrel politics and economic outcomes been more under the spotlight than in Greece, making it a particularly interesting – and, until now, neglected – case study to analyse for a number of reasons.

First, pork-barrelling in public investment is always prominent in countries with strong clientelistic and/or nepotistic networks. In Greece the provision of collective goods, such as bridges and highways or schools and hospitals, has often been regarded as a perk to pay back voters for their electoral support. Second, Greece being a highly centralised country, the decisions about how to allocate public projects – regardless of whether the actual expenditure takes place at the national or at the local level – can often be traced back to national elections. Third, the high level of Greek fiscal centralisation and the lack of a specific formula for the regional allocation of public investment leaves plenty of room for political bargaining – and, hence, for pork-barrelling – about the territorial allocation of public expenditure. Fourth, regional development was one of the avowed policy priorities of successive Greek national governments throughout the period of analysis. Infrastructure investment was used as the main mechanism for upgrading the competitiveness and cohesion of regional economies and was the target of a high proportion of the projects co-funded through EU structural assistance. Fifth, Greece organized the 2004 Olympic Games. The preparation of the Games meant that considerable financial resources were channelled towards infrastructure investment of dubious sustainability. In addition, the need to meet strict deadlines in the preparation for the Games and the implementation of parallel programmes to the Olympic Games, such as the so-called Greece 2004 – financing athletic and other types of infrastructures in every single municipality across the country –is considered to have allowed plenty of opportunities for pork-barrel politics.

The specific institutional conditions of Greece and the combination of factors outlined above hint that pork-barrel politics may have contributed to distorting regional development policy priorities and undermining the programmatic targeting towards the less well-off regions of the country. In addition, it might have contributed to a macroeconomic situation characterised by high public spending, growing deficits, and galloping debt.

This paper examines the extent to which political factors (votes, seats in parliament, and the party in office) have shaped expenditure on local public goods across the 51 Greek NUTS III regions (*nomoi*) between the return to democracy in 1974 and the outbreak of the crisis in 2009. The analysis considers the total volume of public investment expenditures by political period. Public investment expenditures constitute part of national budget and include national funds along with the structural assistance from the EU to finance public infrastructures in the country. Data have been disaggregated at NUTS III regional level, where administrative

divisions coincide with – with the exceptions of Athens and Thessaloniki – political constituencies.

The paper is structured as follows. Following this introduction, section 2 discusses scholarly approaches to pork-barrelling and highlights the key features of the Greek political setting. Section 3 presents the data, the variables, and the econometric model. Section 4 discusses the regression results, while section 5 concludes.

2. Pork-barrel politics and public investment

2.1 Politics and public investment

Theories of distributive politics frequently pay particular attention to the processes behind pork-barrel politics. Electoral considerations often play a key role in the allocation of public expenditure by incumbent governments. Rather than expenditure following 'objective' socio-economic criteria, in contexts where pork-barrelling is pervasive, electoral considerations and the expectations for and results of electoral contests may become fundamental drivers behind the territorial allocation of public expenditure. Incumbent governments, considered as profit maximisers, may allocate public resources with the aim of extracting the highest electoral benefit, rather than pursuing equity and/or efficiency.

Scholarly research provides ample evidence of the presence of pork-barrel politics. There are numerous examples in Europe. Limosani and Navarra (2001) find that in pre-election yeas local policy-makers in Italy have had a tendency to increase investment outlays beyond their standard growth rate. Dahlberg and Johansson (2002) demonstrate that in Sweden incumbent governments have used grant programmes to win votes. Celbis, de Crombrugghe and Muysken (2014) suggest that political bias has been present in the allocation decisions of regional transportation and communication public investments in Turkey.

Pork-barrelling is also widespread as a political practice in the Americas. In the United States Primo and Snyder (2010), for example, show that those areas of the US where a party clearly dominates, attract less attention in terms of distributive spending, because of a decreased incentive for individual legislators to secure a 'personal vote' via local projects. More examples of pork-barrelling have been described by Chen (2010) in the case of New York, who proves that the electoral geography of legislative districts affects pork-barrelling under bicameralism. He indicates that greater electoral fragmentation has a negative effect on pork-barrelling. Stokes (2005) depicts how in Argentina political machines (or clientelistic parties) mobilise electoral support by trading particularistic benefits to voters in exchange for their votes. Similarly, Costa-i-Font, Rodriguez-Oreggia, and Lunapla (2003) find a positive relationship between the regional allocation of public investment and past support for the central ruling party in Mexico.

Not all research, however, indicates that pork-barrelling is pervasive. De La Calle and Orriols (2010) for example, using as a case study the expansion of the underground network in Madrid, show that, although governments are often tempted to follow vote-seeking strategies, they cannot deviate too much from an efficiency-based allocation of public resources. Luca and Rodríguez-Pose (2015) establish that, although politics in Turkey plays a non-negligible role in influencing public investment allocations, the magnitude of pork-barrelling is relatively low in comparison to the role played by socioeconomic factors when determining how to allocate public investment across Turkish regions.

In pork-barrel environments, the specific allocation of public funding frequently depends on the electoral prospects of the ruling party in specific constituencies. Political constituencies can be divided accordingly into three types (Johnston 1977): a) 'hopeless' areas, where the ruling party has a very low level of electoral support and little hope of ever winning more support; b) 'safe' areas, where the ruling party has a high level of popular support and its victory in various electoral contests is virtually guaranteed; and c) 'marginal' areas, where the ruling party either has a slight majority or its opponents have a slight lead over it. In such a categorization, governments will prioritise, depending on their main objectives, either rewarding existing electoral support or gaining new support.

Two contesting models have been put forward in the scientific literature: the 'loyal voter' and the 'swing voter' model. The 'loyal voter' model assumes that governments allocate public funds to reward constituencies where their core supporters live (Cox and McCubbins 1986; Golden and Picci 2008). The 'swing voter' model assumes, by contrast, that governments prefer to splash public investment in those regions where the biggest electoral gains can be achieved (Lindbeck and Weibull 1987; Dixit and Londregan 1996; Weghorst and Lindberg 2013; Golden and Picci 2008). Whereas in the former model incumbent governments reward the past electoral support of their voters, in the latter they aim to buy-off votes by prioritizing expenditures to swing regions. Ansolabehere and Snyder (2006: 549), in an attempt to bridge this dichotomy, argue that it may also be possible that parties chose to target both loyal and swing areas simultaneously.

2.2 Greece, public investment, and pork-barrel politics

There is a widespread popular perception that politics plays an important role in the regional distribution of public spending, in general, and public investment, in particular, in Greece. It is not infrequent to read in the local press news about politicians boasting about their capacity to influence and 'deliver' investments in, say, roads or schools for their constituencies. Political arguments make the public investment budget – an important section of the national budget – one of the most politicised instruments of government policy in the country (Psycharis 1990). While more 'objective' socio-economic criteria determine the bulk of public expenditure, this part of the national budget – which was introduced in 1952, has been the mechanism channelling EU structural funds to Greece since 1982, and is today under the authority of the Ministry of Development – remains however extremely vulnerable to political wrangling and pork-barrelling. Ministers, mayors, members of Parliament, and other politicians vie to carve a share of the public investment budget for their constituencies (Psycharis 2008).

However, the popular view of a polity riddled by pork-barrelling has not really been confirmed by the scholarly literature. The number of studies on distributive politics in Greece remains limited. The few that exist generally validate the presence of pork-barrel politics in the regional allocation of public funds, but the results are extremely sensitive to the different approaches adopted. Lambrinidis, Psycharis and Rovolis (2005), for example, show that the percentage of votes in a prefecture in favour of the governing party has not been a fundamental driving force in the regional allocation of public investment in infrastructure across prefectures. Rodríguez-Pose, Psycharis, and Tselios (2012), by contrast, demonstrate that differences in votes between the governing and the main opposition party in each prefecture determine the territorial allocation of public investment, which, in turn, influences growth rates across Greek prefectures. Psycharis (2008) finds evidence that politicians in key positions in government have funnelled public spending to their constituencies and/or regions

of origin. As a result, the ways through which distributive politics influence the allocation of public investment are still open to investigation.

This paper aims to supersede previous studies by proposing a model using the total volume of public investment – rather than public investment per capita (as in Rodríguez-Pose, Psycharis, and Tselios 2015) – by political period as dependent variable, in order to examine how politics affects the regional allocation of public investments. The analysis controls for a series of variables that, under normal circumstances, would have affected the territorial distribution of public investment. We specifically focus on how public investment is allocated in order to provide different types of public goods and collective services to people in different areas of the country.

3. Data, Variables and Empirical specification: the Greek context

The main aim of the paper is to assess the impact of political factors on the distribution of total public investment expenditures across 51 Greek regions (NUTS III level) over 10 political periods, paying particular attention to the behaviour of different political parties with regards to pork-barrelling when in office. The choice of spatial level and political periods of analysis is not casual.

The *spatial level of analysis* is NUTS III regions. NUTS III regions largely coincide with the Greek political constituencies. In a Greek Parliament of 300 seats, 288 members of Parliament (MPs) are elected directly in open lists on the basis of constituency votes. The remaining 12 MPs (i.e. the so called national deputies or '*Epikrateias*') are elected from closed lists proposed by political parties. The allocation of these MPs to different political parties is proportional to the political power of each party after the elections (Rodríguez-Pose, Psycharis, and Tselios 2015). The 288 directly-elected MPs were elected in 56 constituencies: 49 of these constituencies coincide with NUTS III regions. The only exceptions concern the regions of Attiki and Thessaloniki. Attiki is divided into five electoral constituencies (Athens A, Athens B, Piraeus A, Piraeus B, and Rest of Attiki). Thessaloniki, in turn, is divided into two electoral regions (Thessaloniki A and Thessaloniki B). The coincidence between NUTS III regions and electoral constituencies makes these regions the best unit of analysis for the link between politics and the territorial distribution of public investment.

The *political periods* are determined by the party in office following successive national elections between 17 November 1974 and 4 October 2009. During the period considered, two parties dominated the political arena in Greece: New Democracy (ND), also known as the Liberal Party, and the Panhellenic Socialist Movement Party (PASOK), also known as the Socialist Party. These parties alternated in government during the 10 political periods considered in the analysis.[1] Table 1 displays a) the dates of the national Greek elections, b) which party was in office, and c) the changes in governing party. ND was the governing party in the periods 1975-1977, 1978-1981, 1990-1993, 2004-2007, and 2008-2009, while PASOK was in office during the periods 1982-1985, 1986-1989, 1994-1996, 1997-1999, and 2000-2003. During the period of analysis each party was in office for a total of 5 political periods. Changes in power took place in 1975 (from a junta to ND), in 1982 (from ND to PASOK), in 1990 (PASOK to ND), in 1994 (ND to PASOK), and in 2004 (PASOK to ND). Incumbent

[1] We exclude the three short-lived governments during the period 1989-1990. Between 1989 and 1990 Greece lived a rare – at least until the outbreak of the Great Recession – period of political instability. Three different governments replaced each other in quick succession: a coalition between the conservatives of New Democracy and the Left (03/07/89 - 12/10/1989); a caretaker government (12/10/89 - 23/11/89); and a 'national unity' government in which New Democracy shared power with both PASOK and the Left (23/11/1989 – 11/04/1990).

governments were re-elected five times, 1978 (ND), 1986 (PASOK), 1997 (PASOK), 2000 (PASOK), and 2008 (ND).

Insert Table 1 around here

Data on public investment have been provided by the Ministry of Development which is responsible for the Public Investment Programme of the country. Public investment expenditures include investment expenditures in agriculture, forestry, and fishing; manufacturing; energy, mining, and handicraft; transport infrastructures; tourism and modern culture; education and research; housing and environment; health and public welfare; water supply and sewage facilities; devolved public expenditures to regions and prefectures; special infrastructure works; miscellaneous and administrative expenditures; and Olympic Games infrastructure projects. EU structural assistance to Greece, the national contribution to EU co-financed projects, and projects of purely national interest and funding are all included in these data (Rodríguez-Pose, Psycharis, and Tselios 2015). For each political period, we calculated the total volume of public investment expenditures. Although the avowed aim of Greek public expenditure has always been – regardless of the political orientation of the party in office – that of achieving greater equity and/or efficiency, our hypothesis is that the territorial distribution of funds may have been affected by political factors, as public investment in Greece has always been open to political discretion. These expenditures may therefore capture pork-barrelling. Figure 1 shows the average regional distribution of the total volume of public investment expenditures between 1975 and 2009.

Insert Figure 1 around here

In particular, we formulate and empirically test three hypotheses regarding potential political influences in the allocation of public investment across Greek regions. First, we analyse the extent to which differences between parties in political power in a given region determine public investment expenditures in the region. Second, we assess whether the re-election of a party leads to greater pork-barrelling than a first-time election. Third, we examine whether public investment expenditures differ depending on the orientation of the party in office (i.e. between the Liberal and the Socialist Party). We use the following simple model:

$$Inv_{it} = f(GovParty_t, ChGovParty_t, PolitPower_{it}, Control_{it}) \quad (1)$$

where Inv_{it} is the natural logarithm of the total volume of public investment expenditures in region i ($i = 1, 2, \ldots, 51$) at political period t ($t = 1, 2, \ldots, 10$)[2], $GovParty_t$ is a dummy variable coding whether the governing party at period t was ND ($t = 1, 2, 5, 9,$ *and* 10) or PASOK ($t = 3, 4, 6, 7,$ *and* 8) (base category), $ChGovParty_t$ is a dummy variable indicating whether the governing party at period t had been re-elected ($t = 2, 4, 7, 8,$ *and* 10) or changed ($t = 1, 3, 5, 6,$ *and* 9) (base category), $PolitPower_{it}$ is a vector of regional political power variables (i.e. pork-barrel politics variables) in region i and at period t, and $Control_{it}$ is a vector of control variables in region i and at period t.

[2] The dependent variable adopts a logarithmic form, because the distribution of the total volume of public investment expenditures is skewed.

We expect differences in regional political power – following the 'loyal' vs. 'swing' voter model – to affect the allocation of public investment (*Hypothesis 1*). We do not anticipate differences in pork-barrelling behaviour between the Liberals and the Socialists (*Hypothesis 2*), as corruption is widespread in Greek society (European Commission 2014). Finally, we consider that re-elected governments, that are already familiar with the levers of power, will resort to pork-barrelling in greater measure than first-time elected governments (*Hypothesis 3*).

$$\begin{cases} Inv_{it} = f(ChGovParty_t, PolitPower_{it}, Control_{it}) \; if \; GovParty_t = 'ND' \\ Inv_{it} = f(ChGovParty_t, PolitPower_{it}, Control_{it}) \; if \; GovParty_t = 'PASOK' \end{cases} \quad (2)$$

and

$$\begin{cases} Inv_{it} = f(GovParty_t, PolitPower_{it}, Control_{it}) \; if \; ChGovParty_t = 'Change' \\ Inv_{it} = f(GovParty_t, PolitPower_{it}, Control_{it}) \; if \; ChGovParty_t = 'No \; Change' \end{cases} \quad (3)$$

Equation (1) tests *Hypothesis 1*, Equation (2) tests *Hypothesis 2*, and Equation (3) *Hypothesis 3*.

The regional political power variables are depicted by the percentage votes and seats (MPs) for each party in each region. More specifically, the regional political power variables include the regional political power of the Liberal Party, the Socialist Party, and of minority parties, measured as:

- the percentage votes (seats) in the region in favour of ND (*%ND – Votes (Seats)*);
- the percentage votes (seats) in the region in favour of PASOK (*%PASOK – Votes (Seats)*), and;
- the percentage votes (seats) in the region in favour of minority parties (e.g. the Greek Communist(s) Parties) (*%Rest – Votes (Seats)*).

The regional political power variables also include the ('absolute') regional political power of the governing party and the regional political power of the governing party relative to the main opposition party. This latter variable is known as the 'relative' political power of the governing party (Rodríguez-Pose, Psycharis, and Tselios 2012). The variables, respectively, are measured as:

- the percentage votes (seats) in the region in favour of the governing party (*%GovParty – Votes (Seats)*);[3] and
- the difference in the percentage votes (seats) in the region in favour of the governing party (*Dif%GovParty – Votes (Seats)*).[4]

The value of the relative political power variable for a particular region can be negative in those cases where the percentage share of votes or seats in favour of the governing party (ND or PASOK) is lower than the percentage share of votes or seats in favour of the main opposition party (PASOK or ND, respectively) (Rodríguez-Pose, Psycharis, and Tselios 2012).

Finally, the regional political power variables include the political power of single-seat constituencies. This variable is measured by a dummy variable (*Single-seat constituency*) coding whether a region returns only one MP to Athens (i.e. single-member) or more (i.e.

[3] Calculated as '%GovParty – Votes (Seats)' = '%ND – Votes (Seats)' x 'GovParty' + '%PASOK – Votes (Seats)' x (1 – 'GovParty').
[4] Calculated as 'Dif%GovParty – Votes (Seats)' = ('%ND – Votes (Seats)' – '%PASOK – Votes (Seats)') x 'GovParty' + ('%PASOK – Votes (Seats)' - '%ND – Votes (Seats)') x (1 – 'GovParty').

multi-member) (base category). In single-member settings, the incentives facing individual legislators are similar to those facing their political parties.

Table 2 presents the descriptive statistics for the natural logarithm of the total volume of public investment expenditures (*Inv*) and the political power variables (*PolitPower*) by governing party (*GovParty*) and by change in governing party (*ChGovParty*). This table shows that the political power of the Liberal Party (*%ND – Votes (Seats)*) was higher when the governing party changed than when the governing party was re-elected. This difference is smaller for the Socialist Party (*%PASOK – Votes (Seats)*). The political power of the minority parties (*%Rest – Votes (Seats)*) was higher when the governing party was the Liberal Party or the governing party had been re-elected. This is possibly because the minority parties comprise chiefly the two Communist Parties (the more traditional KKE and the Eurocommunist KKE-Interior and their successive transformations), which are closer to the Socialists than to the Liberals. Both the absolute and the relative political power of the governing party (*%GovParty – Votes (Seats)* and *Dif%GovParty – Votes (Seats)*) were higher when the governing party was the Liberal Party or the governing party had been re-elected. Moreover, the absolute and the relative regional political power of the governing party was higher based on the percentage of seats than on the percentage of votes. Finally, the political power of single-seat constituencies was higher when the governing party had been re-elected.

Insert Table 2 around here

The control variables (*Control*) include region-specific characteristics that either change over time or are time-invariant. The reason for the choice of control variables was related to their presence in the literature and previous empirical studies about pork-barrelling and corruption, as well as to data availability issues. The time-variant region-specific characteristics are *GDP per capita* (divided by 10,000), as a measure of regional economic development; *Density* which uses regional population density (population/km^2) in order to capture regional agglomeration; and *Earthquakes***,** which is a dummy variable coding earthquakes with victims or casualties.[5] *Size* (in km^2 divided by 10,000) is an indicator of the size (area) of the region and is a time-invariant, region-specific characteristic.[6] The empirical specification also includes political period dummies to control for all political-period-specific region-invariant variables (Rodríguez-Pose, Psycharis, and Tselios 2012). All these controls capture some regional features and are likely to deal with some sources of heterogeneity reducing the omitted variable bias.

The correlations between the *GovParty*, *ChGovParty*, and *Control* variables are low, but the correlations between the regional political power variables (*PolitPower*) are high.[7] This prevents the examination of the impact of all political power variables on public investment expenditures simultaneously.

[5] The reason for controlling for earthquakes is that Greece is a seismic country. Past earthquakes have resulted in understandably significant changes in the allocation of public investment expenditures. Examples of such changes were the concentration of public funds in affected areas in such as Thessaloniki (1978), Korinthia (1981), Messini (1986), Achaia (1995), and Attiki (1999), after earthquakes.

[6] GDP and population are not included as control variables, since they are highly correlated with each other (0.9725) as well as with population density (0.9562 and 0.9818, respectively).

[7] The correlation coefficients can be provided by the authors upon request.

This paper also considers possible *differences in the magnitude of the regional political influence across different values*. In other words, it examines the non-linear effects of politics on public investment.

1. Based on data on the percentage of *votes*, possible differences between low, medium, and high regional political power of the Liberal Party, the Socialist Party, the minority parties, and the governing party respectively are examined.[8] The *high* political power regions capture 'safe' regions; the *medium* political power regions capture 'marginal' (or 'swing') regions; while the so-called *low* political power regions capture 'hopeless' regions for the political parties. More specifically:

- if *%ND – Votes < 30*, *%PASOK – Votes < 30*, *%Rest – Votes < 10* and *%GovParty – Votes < 30*, the regional political power of the Liberal Party, the Socialist Party, or minority parties, and of the governing party, respectively, is *low*;
- if *30 ≤ %ND – Votes ≤ 50*, *30 ≤ %PASOK – Votes ≤ 50*, *10 ≤ %Rest – Votes ≤ 30* and *30 ≤ %GovParty – Votes* ≤ 50, the regional political power of the Liberal Party, the Socialist Party, minority parties, and the governing party, respectively, is *medium* (base category), and;
- if *%ND – Votes > 50*, *%PASOK – Votes > 50*, *%Rest – Votes > 30* and *%GovParty – Votes > 50*, the regional political power of the Liberal Party, the Socialist Party, minority parties, and the governing party, respectively, is *high*.

Possible differences between a *low*, *medium*, and *high* relative regional political power of the governing party are also taken into account. Thus,

- if *Dif%GovParty – Votes < -5*, the relative regional political power of the governing party is *low* and represents the opposition groups (i.e. 'hopeless' regions for the governing party);
- if *-5 ≤ Dif%GovParty – Votes ≤ 5*, the relative regional political power of the governing party is *medium* (base category) and represents the marginal constituencies [i.e. 'marginal' (or 'swing') regions]; and,
- if *Dif%GovParty – Votes > 5*, the relative regional political power of the governing party is *high* and represents the ruling party's core constituencies (i.e. 'safe' regions for the governing party).

2. Based on data on the percentage of *seats*, possible differences between *monopolistic*, *high*, *medium*, *low*, and *no political power* of the Liberal Party, the Socialist Party and the governing party are considered. Hence,

- if *%ND – Seats = 100*, *%PASOK – Seats = 100*, *%GovParty – Seats = 100* and *Dif%GovParty - Seats = 100*, the regional political power of the Liberal Party, the Socialist Party, and the governing party (absolute or relative) respectively is monopolistic;
- if *50 < %ND – Seats < 100*, *50 < %PASOK – Seats < 100*, *50 < %GovParty – Seats < 100* and *0 < Dif%GovParty – Seats < 100*, the regional political power of the

[8] The scheme used for the allocation of the regions to the different classifications (low, medium and high) is a combination of an 'exogenous' scheme, defined by criteria external to the distribution of data (e.g. regions with high political power are dominated by the two main political parties in Greece); an 'arbitrary' scheme, in which class boundaries are set by arbitrary criteria such as equal intervals; and an 'ideographic' scheme, where class boundaries are defined by the shape of the distribution (Rodríguez-Pose and Tselios 2011). Nevertheless, the regression results are robust to alternative classifications (e.g. *20 ≤ %ND (%PASOK) – Votes ≤ 40*). The robustness of the regression results using alternative class boundaries and the distribution of the political variables can be provided by the authors upon request.

Liberal Party is higher than that of the Socialist Party, the regional political power of the Socialist Party is higher than that of the Liberal Party, and the regional political power of the governing party (absolute or relative) is higher than that of the opposition party, respectively;

- if *%ND – Seats = 50*, *%PASOK – Seats = 50*, *%GovParty – Seats = 50* and *Dif%GovParty – Seats = 0*, the regional political power of the Liberal Party matches that of the Socialist Party (i.e. 50 per cent) (base category);
- if *0 < %ND – Seats < 50*, *0 < %PASOK – Seats < 50*, *0 < %GovParty – Seats < 50* and *-100 < Dif%GovParty – Seats < 0*, the regional political power of the Liberal Party is lower than that of the Socialist Party, the regional political power of the Socialist Party is lower than that of the Liberal Party, and the regional political power of the governing party (absolute or relative) is lower than that of the opposition party, respectively; and
- if *%ND – Seats = 0*, *%PASOK – Seats = 0*, *%GovParty – Seats = 0* and *Dif%GovParty - Seats = -100*, there is no political power for the Liberal Party, the Socialist Party, and the governing party (absolute or relative), respectively.

As for the minority parties, the paper analyses possible differences in political influence between a low percentage seats in the region in favour of the minority parties (*%Rest - Seats < 5*) (base category) and a high percentage of seats (*5 ≤ %Rest - Seats ≤ 100*).

4. Regression results

This section presents the regression results of the political determinants of the regional distribution of public investment expenditures for 51 NUTS III Greek regions over 10 political periods. As the regression results do not indicate great differences in the findings between the percentage of votes and the percentage of seats data, we present only the votes data. The seats data are made available in an **on-line appendix**. In Tables 3-4, Regressions 1-2 and 11-12 test *Hypothesis 1* (equation 1), Regressions 3-6 and 13-16 test *Hypothesis 2* (equation 2), and Regressions 7-10 and 17-20 test *Hypothesis 3* (equation 3). These tables show the differences in public investment expenditures between the Liberal and the Socialist Party (see coefficients on the *GovParty* variable) as well as between the change and no-change in the governing party (see coefficients on the *ChGovParty* variable). As for the interpretation of the *PolitPower* variable which captures pork-barrel politics, we present both the *linear* and *non-linear* effects. More specifically, Table 3 presents the regional political power of the Liberal Party (*%ND – Votes*) and the Socialist Party (*%PASOK – Votes*), and Table 4 the absolute regional political power of the governing party (*%GovParty – Votes*) and the relative regional political power of the governing party (*Dif%GovParty – Votes*).

All estimations have a good fit, as they explain more than two thirds of the variation in regional public investment expenditures.[9] Because of space constraints, we do not report the coefficients on the *Control* variables (i.e. *GDP per capita*, *Size*, *Density*, and *Earthquakes*).[10] The results on the controls show that public investment was higher in large, high-density regions and, as expected, in regions which had been affected by earthquakes causing victims or casualties. There is, however, no evidence of an association between regional economic development and regional public investment expenditures.

[9] In our empirical specifications, any spillover effects may occur only within NUTS III regions, because the Moran's I test (Cliff and Ord 1981) adapted to the estimated residuals rejects the null hypothesis of spatial dependence.

[10] These results can be provided upon request.

The results also indicate that the total volume of public investment expenditures was higher when the Socialists were in office – during the periods 1982-1985, 1986-1989, 1994-1996, 1997-1999, and 2000-2003 – than when Greece was governed by the Liberals (see the coefficients on the *GovParty* variable). They also demonstrate that, after being re-elected (during the periods 1986-1989, 1997-1999, and 2000-2003), the tendency of the Socialist Party to make use of public investment for political purposes was significantly greater than when elected for the first time (see the coefficients on the *ChGovParty* variable).

4.1 The regional political power of the Liberal and the Socialist Party

Table 3 shows a negative association between the regional political power of the Liberal Party (*%ND – Votes*) and public investment in regions where the Liberals were hegemonic (*%ND > 50*) (Regressions 2, 4, 6, and 8). By contrast, there is a positive association between both factors in those regions where the Liberals had poor electoral results (*%ND < 30*) (Regressions 2, 6, and 10), and especially in periods when the Socialist Party was in office (Regression 4 vs 6). This indicates that the Liberal Party had a preference to use pork-barrel politics in order to possibly either attract opposition voters – mainly Socialist – in swing districts or with the intention of mobilising their own supporters there. The Socialists, in contrast, seem to have adopted a different approach. The results show a positive linear association between the regional political power of the Socialist Party (*%PASOK – Votes*) and public investment (Regressions 11, 13, 15, 17, and 19). Investment was particularly targeted at regions with a high percentage of Socialist vote (*%PASOK > 50*) (Regressions 12, 16, 18, and 20). As can be expected, the association was stronger when the Socialist Party was in office (Regression 14 vs 16) and, especially, after being re-elected (Regression 18 vs 20). Hence, the Socialist Party adopted a different stance with respect to pork-barrelling than the Liberals. Rather than courting opposition voters in swing constituencies, they groomed their electoral bases in safe districts.

Insert Table 3 around here

As they were never in office during the period of analysis, it comes as no surprise that there is no evidence that the regional political power of minority parties (*%Rest – Votes*) was translated into any changes in public investment (see Appendix 1). The regional political power of the Socialist Party was reflected in a more favourable treatment of its safe-seat constituencies in terms of public investment. There is less evidence of such behaviour in the case of the Liberal Party (see Appendix 2).

4.2 The absolute and relative regional political power of the governing party

Table 4 shows that there is no evidence of a linear statistically significant association between the absolute regional political power of the governing party and regional expenditures (Regression 1). This is possibly the result of a negative linear relationship when the Liberal Party is considered (Regressions 1, 3, 5, 7, and 9 of Table 3) and a positive one in the case of the Socialist Party (Regressions 11, 13, 15, 17, and 19 of Table 3). However, both parties seem to have behaved in a similar way after re-elections (ND in 1978-1981, PASOK in 1986-1989, PASOK in 1997-1999 and 2000-2003, and ND in 2008-2009). Re-elections of an incumbent party are connected to a greater tendency to resort to pork-barrelling, mostly

favouring regions that have strongly supported the party in government (*%GovParty > 50*) (Regressions 9 and 10). Therefore, we find that the re-elected governing parties repeatedly resorted to skewing the distribution of investments in favour of their core constituencies (i.e. 'safe' regions). Regions that traditionally gave a higher percentage of the vote to the re-elected governing party generally received larger shares of public investment than their neighbours that voted for the opposition party.

Insert Table 4 around here

Table 4 also depicts a positive linear relationship between the political power of the governing party relative to that of the main opposition party (*Dif%GovParty – Votes*) and overall public investment between 1975 and 2009 (Regression 11). Running the same regression by governing party (ND vs PASOK), there is a negative association between the relative regional political power of the Liberal Party when in office and public investment (Regression 13). Public investment tends to be higher in Liberal Party 'safe' regions (*Dif%GovParty > 5*) (Regression 14). However, an increase in the difference in votes between the Liberal Party (as governing party) and the Socialist Party is connected to declines in public investment, particularly in the safest constituencies. This implies, once again, that the Liberal Party had less of a tendency to reward those areas of the country that provided them with their strongest electoral support. PASOK behaved in a different way, strongly channelling public funds to its core constituencies (*Dif%GovParty > 5*) (Regression 15). The safer the region, the greater the investment (Regression 16). Thus, an increase in the difference in the political power of the Socialist Party (as governing party) relative to the Liberal Party was translated into greater public investment expenditure. The overall outcome is positive (Regression 11), reflecting that the coefficient on the relative political power is higher for PASOK than for ND (i.e. 0.0157 > 0.0067), meaning that the Socialists made greater use of pork-barrelling. Finally, the results show that, as expected, after re-elections public investments were skewed towards areas voting for the governing party (Regression 19).

Overall, the regression results depict a widespread political culture of pork-barrelling in Greece during the period of analysis. The results fail to reject *Hypothesis 1* and *3*. *PolitPower* variables show that pork-barrelling matters for the distribution of public investment expenditures (*Hypothesis 1*), while the coefficients on the *ChGovParty* variables indicate that there are differences in public investment expenditures between first-time and re-elected governments (*Hypothesis 3*). The only hypothesis that is rejected is *Hypothesis 2*, as the Socialist Party made a more extensive use of pork-barrelling than the Liberals when in office.

5. Conclusions

This paper has delved into the largely overlooked question of the presence and relevance of pork-barrel politics in the four decades after the restoration of democracy in Greece. The results of the analysis have confirmed the presence of widespread pork-barrel practices in the geographical distribution of public investment. Pork-barrel politics during the 35-year time-period between 1974 and 2009 have distorted regional development policy priorities, as the

distribution of public investment responded, to a large extent, to the governments' self-interests.

However, while pork-barrelling was practiced by the two parties that alternated in power in the period between the restoration of democracy and the outbreak of the Great Recession, the analysis has revealed that each party followed a different strategy. The Liberal Party mainly allocated public investment with the aim of gaining additional support and new seats in Parliament by courting the electorate in 'swing' constituencies. The Socialist, by contrast, preferred rewarding electoral trust, overspending in 'safe' electoral districts. Re-election exacerbated these practices. Re-elected governments splashed more on pork-barrelling once the confidence of the electorate was renewed and decision-makers felt more at ease with governing Greece. The Socialist party, according to the results of the analysis, made greater public investment spending than the Liberals, as the public investment link to votes and MPs was highest during the periods between 1986-1989, 1997-1999, and 2000-2003, coinciding with the re-election of PASOK. These results are robust to measuring political power by votes as well as by MPs.

Political influences in the allocation of public investment can be considered as an important source of distortion for regional development policy priorities and a serious institutional flaw in the functioning of the Greek democracy. They may have also been a reason behind the excessive spending which led to the generation of substantial annual deficits and debts. In this respect, this article sets a marker about the role played by political parties in undermining the efficiency of the regional development effort for real or perceived party-political gains. However, this article has mostly only scratched the surface, establishing connections, but not exploring the mechanisms through which this pork-barrel was generated, allowed, managed, and tolerated. More research is needed, first, in order to assess whether Greece represents a particular case in terms of pork-barrel politics or whether this type of behaviour is – as implied by some of the literature highlighted in the literature review – more widespread, especially across other southern European countries. In addition, more qualitative and in-depth research will have to be conducted in order to assess the exact ways in which decision-makers influenced and shaped the allocation of public investment for the benefit of their parties, often at the expense of sound and efficient policies and of the Greek people as a whole.

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Table 1: Political periods

a/a	Date of national elections	Political period	Governing party	Change or no change in governing party
1	17-Nov-1974	1975-1977	ND	Change
2	20-Nov-1977	1978-1981	ND	No Change
3	18-Oct-1981	1982-1985	PASOK	Change
4	02-Jun-1985	1986-1989	PASOK	No Change
5	08-Apr-1990	1990-1993	ND	Change
6	10-Oct-1993	1994-1996	PASOK	Change
7	22-Sept-1996	1997-1999	PASOK	No Change
8	09-Apr-2000	2000-2003	PASOK	No Change
9	07-Mar-2004	2004-2007	ND	Change
10	16-Sept-2007	2008-2009	ND	No Change
	04-Oct-2009			

Table 2: Descriptive statistics

Variable	*GovParty or ChGovParty*	Obs	Mean	Std. Dev.	Min	Max
Inv	ND	255	18.2680	0.8864	16.3872	21.9577
	PASOK	255	18.4727	0.7714	16.9068	22.2913
	CHANGE	255	18.3937	0.8419	16.3872	21.9577
	NO CHANGE	255	18.3470	0.8319	16.7967	22.2913
%ND – Votes	ND	255	47.4158	8.5953	15.2608	76.0418
	PASOK	255	41.0887	5.9307	25.1183	56.9166
	CHANGE	255	46.0856	9.1732	15.2608	76.0418
	NO CHANGE	255	42.4188	6.1848	16.0087	56.9166
%PASOK – Votes	ND	255	33.6072	10.6966	10.8753	56.5183
	PASOK	255	45.4700	5.9932	30.4159	64.3227
	CHANGE	255	39.6439	11.5178	11.8679	64.3227
	NO CHANGE	255	39.4333	9.3965	10.8753	64.3227
%Rest – Votes	ND	255	18.9770	10.7596	0.6593	60.5497
	PASOK	255	13.4413	5.2459	4.8921	40.4836
	CHANGE	255	14.2706	7.5967	0.6593	46.8271
	NO CHANGE	255	18.1478	9.6652	5.5727	60.5497
%GovParty – Votes	ND	255	47.4158	8.5953	15.2608	76.0418
	PASOK	255	45.4700	5.9932	30.4159	64.3227
	CHANGE	255	49.0039	7.8962	15.2608	76.0418
	NO CHANGE	255	43.8818	6.0148	16.0087	64.3227
Dif%GovParty – Votes	ND	255	13.8085	16.1500	-22.6513	63.1174
	PASOK	255	4.3814	10.7081	-22.0465	38.3043
	CHANGE	255	12.2784	16.3159	-22.6513	63.1174
	NO CHANGE	255	5.9115	11.5559	-22.0465	38.7679
%ND – Seats	ND	255	64.1391	23.4825	0	100
	PASOK	255	38.4885	20.1750	0	100
	CHANGE	255	53.9657	25.2271	0	100
	NO CHANGE	255	48.6619	25.2627	0	100
%PASOK – Seats	ND	255	30.1332	20.3458	0	100
	PASOK	255	59.0030	19.2656	0	100
	CHANGE	255	42.1030	24.6845	0	100
	NO CHANGE	255	47.0333	24.1239	0	100
%Rest – Seats	ND	255	5.7278	14.9495	0	100
	PASOK	255	2.5085	6.4278	0	33.33334
	CHANGE	255	3.9314	13.6507	0	100
	NO CHANGE	255	4.3048	9.1430	0	50
%GovParty – Seats	ND	255	64.1391	23.4825	0	100
	PASOK	255	59.0030	19.2656	0	100
	CHANGE	255	62.8678	21.5378	0	100
	NO CHANGE	255	60.2743	21.6467	0	100
Dif%GovParty – Seats	ND	255	34.0059	41.3191	-100	100
	PASOK	255	20.5145	38.9239	-100	100
	CHANGE	255	29.6670	39.5323	-100	100
	NO CHANGE	255	24.8534	41.7046	-100	100
Single-seat constituency	ND	255	0.1137	0.3181	0	1
	PASOK	255	0.1059	0.3083	0	1
	CHANGE	255	0.0980	0.2980	0	1
	NO CHANGE	255	0.1216	0.3274	0	1

Table 3: The regional political power of the Liberal Party (*%ND – Votes*) and the Socialist Party (*%PASOK – Votes*)

	Hypothesis 1		***Hypothesis 2***				***Hypothesis 3***			
	ALL	ALL	ND	ND	PASOK	PASOK	CHANGE	CHANGE	NO CHANGE	NO CHANGE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
a. GovParty										
PASOK	base	base					base	base	base	base
ND	-0.6052***	-0.6231***					-0.1681	-0.2291**	-0.6573***	-0.6391***
b. ChGovParty										
Change	base	base	base	base	base	base				
No change	0.0484	0.0891	0.1193	0.1307	0.2488***	0.1710**				
c. PolitPower										
Political power of the <u>Liberal Party</u>										
%ND – Votes	-0.0161***		-0.0097**		-0.0275***		-0.0154***		-0.0170***	
• %ND < 30		0.3010**		0.2261		0.3767**		0.2456		0.3745*
• 30 ≤ %ND ≤ 50		base		base		base		base		base
• %ND > 50		-0.1942***		-0.1412*		-0.4034***		-0.2180***		-0.1565
Observations	510	510	255	255	255	255	255	255	255	255
R-squared	0.7302	0.7255	0.7122	0.7124	0.7577	0.7417	0.7470	0.7440	0.7141	0.7084

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
a. GovParty										
PASOK	base	base					base	base	base	base
ND	-0.5234***	-0.5812***					-0.1059	-0.5059***	-0.1401	-0.2571
b. ChGovParty										
Change	base	base	base	base	base	base				
No change	-0.0724	0.1119	0.0378	0.0994	0.2027**	0.1694**				
c. PolitPower										
Political power of the <u>Socialist Party</u>										
%PASOK – Votes	0.0172***		0.0105*		0.0250***		0.0114**		0.0249***	
• %PASOK < 30		-0.1278		-0.1401				0.1611		-0.3885**
• 30 ≤ %PASOK ≤ 50		base		base		base		base		base
• %PASOK > 50		0.2906***		0.1219		0.3349***		0.2153**		0.3855***
Observations	510	510	255	255	255	255	255	255	255	255
R-squared	0.7295	0.7274	0.7111	0.7086	0.7537	0.7475	0.7387	0.7393	0.7252	0.7234

*** p<0.01, ** p<0.05, * p<0.1; all regressions include controls, constant and time-dummies.

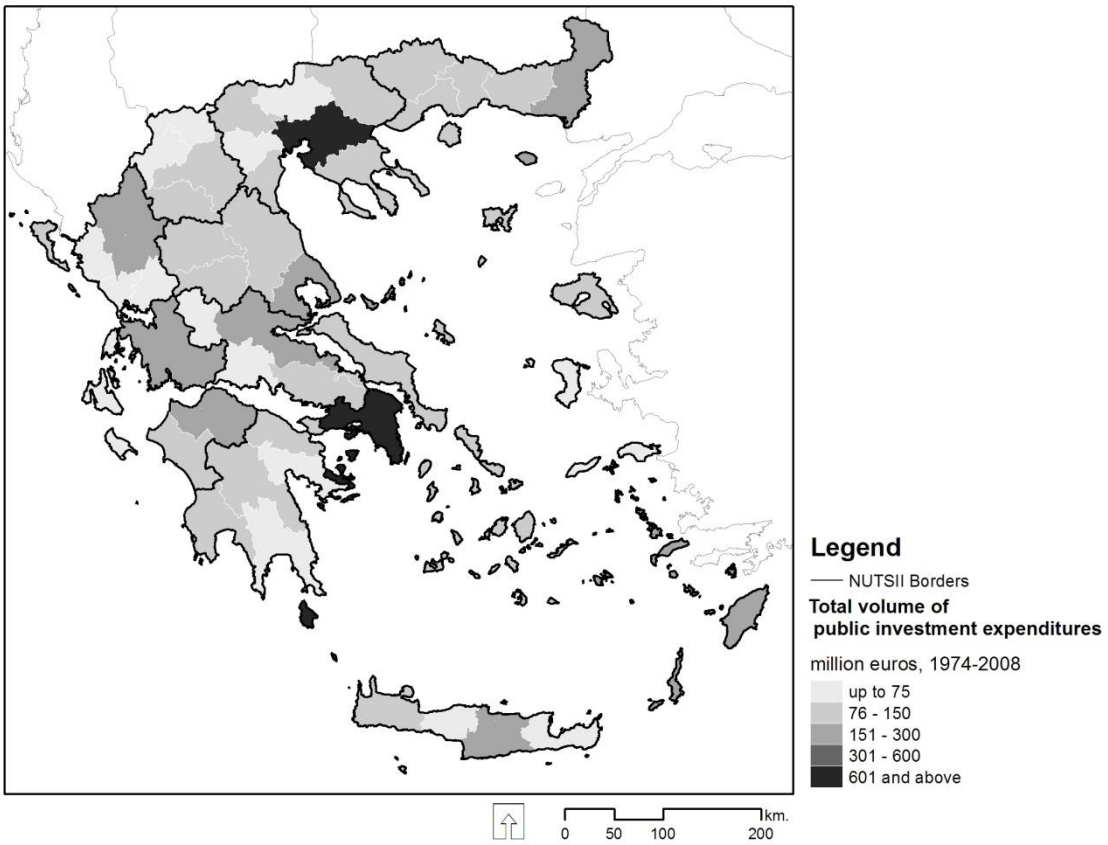
Table 4: The absolute and relative regional political power of the governing party *(%GovParty – Votes* and *Dif%GovParty – Votes*, respectively)

	Hypothesis 1		***Hypothesis 2***				***Hypothesis 3***			
	ALL	ALL	ND	ND	PASOK	PASOK	CHANGE	CHANGE	NO CHANGE	NO CHANGE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
a. GovParty										
GovParty: PASOK	Base	base					base	base	base	base
GovParty: ND	-0.6159***	-0.6115***					-0.3859***	-0.3949***	-0.5836***	-0.6390***
b. ChGovParty										
ChGovParty: Change	Base	base								
ChGovParty: No change	0.2665**	0.2989***								
c. PolitPower										
<u>Absolute</u> political power of the governing party										
%GovParty – Votes	0.0046						-0.0012		0.0127**	
• %GovParty < 30		0.3092						0.2259		0.3267
• 30 ≤ %GovParty ≤ 50		base						base		base
• %GovParty > 50		0.0995*						-0.0162		0.2873***
Observations	510	510					255	255	255	255
R-squared	0.7172	0.7193					0.7320	0.7326	0.7088	0.7155

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
a. GovParty										
GovParty: PASOK	Base	base					base	base	base	base
GovParty: ND	-0.6334***	-0.6363***					-0.4309***	-0.4057***	-0.7401***	-0.6855***
b. ChGovParty										
ChGovParty: Change	Base	base	base	base	base	base				
ChGovParty: No change	0.3290***	0.2336**	0.0328	0.1953	0.2516***	0.2074**				
c. PolitPower										
<u>Relative</u> political power of the governing party										
Dif%GovParty – Votes	0.0038**		-0.0067**		0.0157***		0.0012		0.0074**	
• Dif%GovParty < -5		-0.0285		-0.2967**		0.1729**		-0.0799		0.0083
• -5 ≤ Dif%GovParty ≤ 5		base		base		base		base		base
• Dif%GovParty > 5		0.0440		-0.3453***		0.3413***		-0.0561		0.1307
Observations	510	510	255	255	255	255	255	255	255	255
R-squared	0.7184	0.7173	0.7134	0.7183	0.7624	0.7423	0.7322	0.7325	0.7085	0.7056

*** p<0.01, ** p<0.05, * p<0.1; all regressions include controls, constant and time-dummies; we do not present Reg. 3 and 4 because they are presented in Reg. 3 and 4 of Table 3 and, similarly, we do not present Reg. 5 and 6 because they are presented in Reg. 15 and 16 of Table 3.

Figure 1: The regional distribution of public investment expenditures



Appendix 1: The regional political power of the minority parties (*%Rest – Votes*)

	Hypothesis 1		***Hypothesis 2***				***Hypothesis 3***			
	ALL	ALL	ND	ND	PASOK	PASOK	CHANGE	CHANGE	NO CHANGE	NO CHANGE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
a. GovParty										
GovParty: PASOK	base	base					base	base	base	base
GovParty: ND	-0.6270***	-0.6444***					-0.4797***	-0.4422***	-0.4856***	-0.5527***
b. ChGovParty										
ChGovParty: Change	base	base	base	base	base	base				
ChGovParty: No change	0.2242**	0.2148**	0.2402*	0.2355*	0.0895	0.0885				
c. PolitPower										
Political power of the <u>minority parties</u>										
%Rest – Votes	0.0022		0.0029		0.0008		0.0079*		-0.0055	
• %Rest < 10		-0.0893*		-0.1822*		-0.0331		-0.0613		-0.1172
• 10 ≤ %Rest ≤ 30		base		base		base		base		base
• %Rest > 30		-0.0084		-0.0087		0.2972		0.1693		-0.1629
Observations	510	510	255	255	255	255	255	255	255	255
R-squared	0.7162	0.7177	0.7070	0.7111	0.7210	0.7220	0.7350	0.7346	0.7022	0.7050

*** p<0.01, ** p<0.05, * p<0.1; all regressions include controls, constant and time-dummies.

Appendix 2: Comparing the regional political power of the Liberal Party (*%ND – Votes*), the Socialist Party (*%PASOK – Votes*) and the minority parties (*%Rest – Votes*)

	Hypothesis 1	***Hypothesis 2***		***Hypothesis 3***	
	ALL	ND	PASOK	CHANGE	NO CHANGE
	(1)	(2)	(3)	(4)	(5)
a. GovParty					
GovParty: PASOK	base			base	base
GovParty: ND	-0.5517***			-0.1255	-0.2249
b. ChGovParty					
ChGovParty: Change	base	base	base		
ChGovParty: No change	-0.0704	0.0372	0.2555***		
c. PolitPower					
<u>Comparing</u> the political power					
%ND – Votes	base	base	base	base	base
%PASOK – Votes	0.0212***	0.0134**	0.0315***	0.0165***	0.0273***
%Rest – Votes	0.0106***	0.0071	0.0184***	0.0141***	0.0060
Observations	510	255	255	255	255
R-squared	0.7337	0.7134	0.7627	0.7472	0.7264

*** p<0.01, ** p<0.05, * p<0.1; all regressions include controls, constant and time-dummies.

On-line Appendix 1: The regional political power of the Liberal Party (*%ND – Seats*) and the Socialist Party (*%PASOK – Seats*)

	Hypothesis 1		***Hypothesis 2***				***Hypothesis 3***			
	ALL	ALL	ND	ND	PASOK	PASOK	CHANGE	CHANGE	NO CHANGE	NO CHANGE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
a. GovParty										
GovParty: PASOK	base	base					base	base	base	base
GovParty: ND	-0.5514***	-0.5694***					-0.2247**	-0.2221*	-0.5216***	-0.4685***
b. ChGovParty										
ChGovParty: Change	base	base	base	base	base	base				
ChGovParty: No change	0.1289	0.0632	0.1436	0.0910	0.0974	0.1493*				
c. PolitPower										
Political power of the <u>Liberal Party</u>										
%ND – Seats	-0.0035***		-0.0031**		-0.0036***		-0.0038**		-0.0032**	
• %ND = 0		-0.1036		-0.1909		-0.1200		-0.0988		-0.1089
• 0 < %ND < 50		0.2071***		0.2407**		0.2002***		0.1761**		0.2253***
• %ND = 50		base		base		base		base		base
• 50 < %ND < 100		-0.0317		0.0395		-0.1487*		0.0191		-0.0646
• %ND = 100		-0.2999***		-0.2022*		-0.5036**		-0.2640**		-0.3250***
Observations	510	510	255	255	255	255	255	255	255	255
R-squared	0.7231	0.7361	0.7116	0.7221	0.7294	0.7539	0.7387	0.7468	0.7083	0.7272

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
a. GovParty										
GovParty: PASOK	base	base					base	base	base	base
GovParty: ND	-0.5503***	-0.5223***					-0.2549**	-0.2382**	-0.5264***	-0.4289***
b. ChGovParty										
ChGovParty: Change	base	base	base	base	base	base				
ChGovParty: No change	0.1601	0.1295	0.1784	0.1446	0.1005	0.1560*				
c. PolitPower										
Political power of the <u>Socialist Party</u>										
%PASOK – Seats	0.0029***		0.0022		0.0031**		0.0032**		0.0026*	
• %PASOK = 0		-0.2981***		-0.2064*		-0.5073**		-0.2194**		-0.3966***
• 0 < %PASOK < 50		-0.0506		0.0243		-0.1846**		0.0356		-0.1335
• %PASOK = 50		base		base		base		base		base
• 50 < %PASOK < 100		0.2030***		0.1786		0.1931***		0.1953**		0.1994**
• %PASOK = 100		-0.1840**		-0.4642		-0.2079**		-0.0951		-0.2474**
Observations	510	510	255	255	255	255	255	255	255	255
R-squared	0.7201	0.7371	0.7087	0.7190	0.7264	0.7628	0.7366	0.7465	0.7047	0.7312

*** p<0.01, ** p<0.05, * p<0.1; all regressions include controls, constant and time-dummies.

On-line Appendix 2: The absolute and relative regional political power of the governing party *(%GovParty – Seats* and *Dif%GovParty – Seats*, respectively)

	Hypothesis 1		***Hypothesis 2***				***Hypothesis 3***			
	ALL	ALL	ND	ND	PASOK	PASOK	CHANGE	CHANGE	NO CHANGE	NO CHANGE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
a. GovParty										
GovParty: PASOK	Base	base					base	base	base	base
GovParty: ND	-0.6162***	-0.6290***					-0.3624***	-0.3231***	-0.6132***	-0.6158***
b. ChGovParty										
ChGovParty: Change	Base	base								
ChGovParty: No change	0.2051*	0.1482								
c. PolitPower										
<u>Absolute</u> political power of the governing party										
%GovParty – Seats	-0.0002						-0.0015		0.0008	
• %GovParty = 0		-0.3319**						-0.2561		-0.3722*
• 0 < %GovParty < 50		0.0035						0.1290		-0.0738
• %GovParty = 50		base						base		base
• 50 < %GovParty < 100		0.1218**						0.0950		0.1493**
• %GovParty = 100		-0.1974***						-0.1864*		-0.2147**
Observations	510	510					255	255	255	255
R-squared	0.7160	0.7321					0.7330	0.7445	0.7014	0.7250

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
a. GovParty										
GovParty: PASOK	Base	base					base	base	base	base
GovParty: ND	-0.6182***	-0.6304***					-0.3670***	-0.3260***	-0.6251***	-0.6318***
b. ChGovParty										
ChGovParty: Change	Base	base	base	base	base	base				
ChGovParty: No change	0.2186**	0.1357	0.1521	0.1260	0.0995	0.1464*				
c. PolitPower										
<u>Relative</u> political power of the governing party										
Dif%GovParty – Seats	0.0002		-0.0016*		0.0017**		-0.0007		0.0008	
• Dif%GovParty = -100		-0.4990***		-0.4683		-0.5057**		-0.3286		-0.5580***
• -100 < Dif%GovParty < 0		-0.0123		0.2842**		-0.1476*		0.1370		-0.0970
• Dif%GovParty = 0		base		base		base		base		base
• 0 < Dif%GovParty < 100		0.1047**		-0.0316		0.2104***		0.0812		0.1306*
• Dif%GovParty = 100		-0.2091***		-0.2396**		-0.2047**		-0.1888*		-0.2337**
Observations	510	510	255	255	255	255	255	255	255	255
R-squared	0.7161	0.7321	0.7106	0.7243	0.7280	0.7610	0.7326	0.7429	0.7025	0.7268

*** p<0.01, ** p<0.05, * p<0.1; all regressions include controls, constant and time-dummies; we do not present Reg. 3 and 4 because they are presented in Reg. 3 and 4 of on-line Appendix 1 and, similarly, we do not present Reg. 5 and 6 because they are presented in Reg. 15 and 16 of on-line Appendix 1.

On-line Appendix 3: The political power of the single-seat constituency

	Hypothesis 1	*Hypothesis 2*		*Hypothesis 3*	
	ALL	ND	PASOK	CHANGE	NO CHANGE
	(1)	(2)	(3)	(4)	(5)
a. GovParty					
GovParty: PASOK	base			base	base
GovParty: ND	-0.6074***			-0.4050***	-0.6083***
b. ChGovParty					
ChGovParty: Change	base	base	base		
ChGovParty: No change	0.2335**	0.2310*	0.1072		
c. PolitPower					
Single-seat constituency	-0.2586***	-0.1889*	-0.3337***	-0.1979*	-0.3082***
Observations	510	255	255	255	255
R-squared	0.7236	0.7102	0.7354	0.7359	0.7129

*** p<0.01, ** p<0.05, * p<0.1; all regressions include controls, constant and time-dummies.

On-line Appendix 4: The regional political power of the minority parties (*%Rest – Seats*)

	Hypothesis 1		***Hypothesis 2***				***Hypothesis 3***			
	ALL	ALL	ND	ND	PASOK	PASOK	CHANGE	CHANGE	NO CHANGE	NO CHANGE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
a. GovParty										
GovParty: PASOK	base	base					base	base	base	base
GovParty: ND	-0.6320***	-0.6583***					-0.3949***	-0.3869***	-0.6439***	-0.6404***
b. ChGovParty										
ChGovParty: Change	base	base	base	base	base	Base				
ChGovParty: No change	0.1895*	0.1567	0.2040*	0.1685	0.0736	0.0686				
c. PolitPower										
Political power of the <u>minority parties</u>										
%Rest – Seats	0.0035*		0.0027		0.0106**		0.0015		0.0086**	
• %Rest < 5		base		base		base		base		base
• 5 ≤ %Rest ≤ 100		0.2619***		0.2598***		0.2718***		0.2730***		0.2505***
Observations	510	510	255	255	255	255	255	255	255	255
R-squared	0.7181	0.7271	0.7083	0.7182	0.7273	0.7322	0.7325	0.7426	0.7082	0.7120

*** p<0.01, ** p<0.05, * p<0.1; all regressions include controls, constant and time-dummies.

On-line Appendix 5: Comparing the regional political power of the Liberal Party (*%ND – Seats*), the Socialist Party (*%PASOK – Seats*) and the minority parties (*%Rest – Seats*)

	Hypothesis 1	***Hypothesis 1***		***Hypothesis 1***	
	ALL	ND	PASOK	CHANGE	NO CHANGE
	(1)	(2)	(3)	(4)	(5)
a. GovParty					
GovParty: PASOK	base			base	Base
GovParty: ND	-0.5606***			-0.2177*	-0.5741***
b. ChGovParty					
ChGovParty: Change	base	base	base		
ChGovParty: No change	0.1279	0.1451	0.0857		
c. PolitPower					
Comparing the political power					
%ND – Seats	base	base	base	base	Base
%PASOK – Seats	0.0032***	0.0029*	0.0029**	0.0039**	0.0022
%Rest – Seats	0.0043**	0.0035	0.0099**	0.0033	0.0080**
Observations	510	255	255	255	255
R-squared	0.7233	0.7117	0.7318	0.7388	0.7108

*** p<0.01, ** p<0.05, * p<0.1; all regressions include controls, constant and time-dummies.