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Investing in the roots of your political ancestors

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Abstract: Using regional data for Greece over the period 1975-1989, we document the disproportionate allocation of public investment funds in favor of prefectures with many core supporters of the incumbent party. Our main evidence comes from an Instrumental Variables (IV) analysis that exploits the discontinuity in the political landscape of Greece after a brief military junta (1967-1974) to link the parties established after 1974 with their ancestors from the same 'political family' during the pre-dictatorial era. In particular, we show that political ancestors' electoral strength affects the allocation of public investment, the political support between political ancestor and descendant parties is strongly associated and that both push the allocation of public investment in prefectures with many core supporters. We also provide evidence that the appointment of deputy ministers from the loyal prefectures of the incumbent party plays an important role in this relationship.

JEL classification: H1; H4; D7

Keywords: public investment, partisan loyalty, open-list proportional representation

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1. Introduction

In recent years, there has been a surge in scholarly contributions investigating how politicians can distort the geographical allocation of public capital even if the latter is essential for the promotion of regional development and economic growth (see Bom and Ligthart, 2014; Doerr et al., 2020; Luca, 2021). The theoretical literature offers competing models of pork-barrel politics producing conflicting predictions that incumbents could follow either a 'core voter' strategy, targeting regions of their core voters, or a 'swing voter' strategy, in which they target voters who are indifferent about the candidates (see Cox and McCubbins, 1986, and Lindbeck and Weibull, 1987). A large number of empirical studies that followed, undertaken mostly within single countries, provide also conflicting findings concerning the behavior of politicians. The vast majority of these studies typically relate regional targeting of public infrastructure spending with the vote share of the most recent election providing support both for the 'swing voter' (see, e.g., Castells and Solé-Ollé, 2005; Solé-Ollé, 2013; Azar, 2022), and the 'core voter' (see, e.g., Cadot et al., 2006; Luca and Rodríguez-Pose, 2015; Kauder et al. 2016) hypotheses.[1]

The paper at hand employs a unique dataset to explore potential political incentives behind the regional distribution of public investment spending in Greece from 1975 to 1989. These are the first years after the restoration of democracy in Greece in 1974 and the establishment of the Third Hellenic Republic, thereafter, referred to as the *Metapolitefsi* (i.e., change of regime).[2] The period of focus offers an appealing case study for different reasons. First, the interruption of democracy due to the military regime for seven years (1967-1974) allows us to link the parties established after 1974 with their political ancestors during the pre-dictatorial era. In turn, we adopt a two-stage-least-square (2SLS) estimator, using the electoral strength of political ancestor parties as an instrument to mitigate

[1] Public infrastructure is best described as a centrally provided local public good (i.e., public good that generates localized benefits) or as a geographically targetable private good. See Knight (2004) for more details on this.

[2] Actually, Greece was part of the European 'democratisation wave' that included also Portugal and Spain, who also suffered dictatorships in the second half of the twentieth century (see Huntington, 1993; Torregrosa-Hetaland, 2015).

endogeneity concerns. Greece is characterized by a remarkable degree of long-run partisan loyalty in most of its electoral constituencies. In particular, the electoral strength of parties that belong to the same 'political family' appears to be constant over a very long period, starting from the decade of 1960's and remaining relatively intact despite the interruption of the seven-year military dictatorship (see, e.g., Featherstone and Katsoudas, 1985; Papadopoulos, 1989; Kalyvas, 2010). A noteworthy characteristic of the Greek case that supports our identification strategy is the fact that the new parties established after 1974 were not direct descendants of the pre-junta parties in terms of political agendas since their electoral manifestos were fundamentally different from those of their ancestors. Section 3.2.1, which follows later, provides more details about this.

Second, the period 1975-1989 is characterized by politically induced public policies that affected the macroeconomic performance of the Greek economy and also led public debt to rise from less than 20 percent of GDP in 1973 to more than 100 percent in less than two decades later (see, e.g., Meghir et al., 2017; Alogoskoufis, 2019; Cahan et al., 2019). Along with this upward trend in public debt we observe a significant variation and expansion of public investment funds (see Figure 1) - especially after 1981 when the first socialist government in the history of Greece is elected- that provides empirical leverage to assess the possibility of political distortions. This variation between 1975-1989 is combined with homogeneous electoral rules and absolute balance in the years the two parties that dominated the political landscape after 1974 stay in office. In particular, all elections until 1989 were held under similar electoral laws of reinforced proportionality.[3] This changed in 1989 by the electoral law of proportional representation passed by the socialist party before the election of that year. Furthermore, during 1975-1989 the two main parties of that period (*New Democracy* and *Panhellenic Socialist Movement*) served two consecutive terms in office each. In contrast, during the 1990's and until 2004 the political landscape is monopolised by the socialist party. Therefore, the chosen period provides a good laboratory to study the influence of pork-barrel politics.

[3] See Appendix A for a detailed description of the electoral system.

[Insert Figure 1, here]

Our empirical analysis provides clear-cut evidence in favor of the core voter hypothesis. In particular, our IV estimates reveal that a one standard deviation (SD) increase in the voting share of the incumbent party (7.7 percent) leads to a 11.5 percentage points increase in the allocation of public investment funds. Alternatively, using a dichotomous classification to capture regions characterized as *political strongholds* (see, e.g., Tribin 2020), we show that the most traditional political bailiwicks of the two parties receive approximately 35 percent more public investment. This evidence is part of a set of results that make non-null IV estimates more plausible. Specifically, we show that political ancestors' electoral strength affects the allocation of public investment (reduced form), the political support between political ancestor and descendant parties is strongly associated (first-stage), and that both push the allocation of public investment in the political strongholds of the two parties.

In turn, we attempt to illuminate the potential mechanism behind the allocation of public investment funds in core constituencies. A major characteristic of the political system is the degree of personalism in the electoral contests (see, e.g., McGillivray, 2004; Golden and Picci, 2008) and, consequently, the relative strength of the party vis-à-vis local legislators (i.e., MPs). Greece is characterized by a substantial degree of electoral personalism (see, e.g., Mavrogordatos, 1983a). This is due to the Open-List Proportional Representation (OLPR) electoral system of the period.[4] According

[4] Proportional Representation (PR) electoral systems are based on the principle that, first, seats are allocated to each party according to its electoral strength and, second, are distributed to the individual candidates following different formulas. More specifically, in Closed-List Proportional Representation (CLPR), it is the party that ranks the candidates (prior to the elections) and after the elections the seats are allocated to individual candidates according to their rank in the party list. In OLPR, parties present a set of candidates running under their label but they do not rank them prior to the election. So, voters cast a ballot for an individual candidate and the parties receive seats in proportion to the sum of votes received by all the candidates running under their label. After the elections, seats are distributed to individual candidates according to the number of personal votes they received. For example, suppose that a party is allocated *n* seats. The top *n* candidates, as

to Golden and Picci (2008), under an OLPR system, powerful MPs with greater seniority or governmental position typically favor their home constituencies. This is mainly due to the fact that OLPR induces intra-party competition since candidates compete over their co-partisans in order to get re-elected. Along these lines, we consider as powerful MPs those who were appointed as ministers or deputy ministers. Our analysis concludes that loyal prefectures with deputy ministers receive more public investment flows from the central government. Our interpretation is that deputy ministers are in higher need (in comparison to ministers) to support their candidacy against competitors from the same party allocating more public investment funds within the prefecture. This allows them to maintain their networks of political patronage in the loyal prefectures of their affiliated party and, at the same time, the party profits from their electoral influence.[5]

Our paper borrows from and contributes to different strands of the literature. First, our analysis contributes to a large literature that explores the influence of pork-barrel politics (see, e.g., Cadot et al., 2006; Solé-Ollé, 2013; Luca and Rodríguez-Pose, 2015; Tribin, 2020). In particular, using the IV strategy described above, we attempt to alleviate potential endogeneity concerns which are driven mostly by the fact that electoral strength is inevitably endogenous to political "pork" (see, e.g., Matakos and Xefteris, 2016). Second, we contribute to a small but growing empirical literature that investigates politically motivated public policies for the case of Greece (see, Chortareas et al., 2016; Rodriguez-Pose et al., 2016; Chortareas et al., 2018; Kitsos and Proestakis, 2021). Next, our results indicate that parties in Greece target loyal constituencies as a mean to maintain their electoral influence.[6] To the best of our knowledge, the only other study that provides similar evidence is Joanis (2011) who shows that loyal constituencies (i.e., constituencies that repeatedly vote for a given party)

determined by the number of votes they personally received, are those who win the legislative seats (for more details on this, see Cheibub and Sin, 2020).

[5] The Greek political arena was traditionally dominated by interpersonal patron-client networks which belonged personally to specific MPs benefiting primarily them and, only indirectly, their political parties (see, e.g., Meynaud, 2002).

[6] It must be noted that 'loyalty' is conceptualized as repeated voting in favor of a party over long periods and it should not be confused to the notion of core supporters that usually refers to voting in favor of a party in the previous election.

receive disproportionately more road expenditure in the province of Québec. Finally, our empirical results relate to an influential body of work that establishes the effect of electoral personalism on the allocation of pork-barrel spending (see, e.g., Ames, 1995; Carey and Shugart, 1995; Golden and Picci, 2008; Psycharis et al., 2021).

The rest of the paper is organized as follows. Section 2 discusses the Greek political landscape and presents descriptive evidence on the electoral strength of the parties and the spatial allocation of public investment flows. Section 3 describes the empirical strategy and reports the econometric results. Finally, Section 4 offers our concluding remarks.

2. Data description and preliminary evidence

2.1. The political landscape

In this section, we describe the political system in Greece and the electoral influence of the main political parties at the NUTS-3 level (i.e., 52 prefectures, also see Figure B1 in the Appendix) in the first four electoral campaigns (1974, 1977, 1981 and 1985) of *Metapolitefsi*. The election of 1964 was the last before a brief military junta, referred to as the 'Regime of the Colonels' (1967-1974), that turned in the government to Konstantinos Karamanlis in 1974 (see Nicolacopoulos, 2001). Karamanlis formed a government of national unity that prepared the country for a democratic election which was finally held in November, 1974. Most of the parties that took part in this electoral campaign were newly founded but -at the same time- they had deep historical roots based on the traditional clientelistic networks of the parties that were dominant during the pre-dictatorial period. In particular, *New Democracy* (*ND - Nea Dimokratia*), the right-wing party founded by Konstantinos Karamanlis a few days before the announcement of the 1974 election, was the obvious political successor of the pre-junta party of *National Radical Union (ERE - Ethniki Rizospastiki Enosis*) purged of its extreme right-wing elements (see, e.g., Clogg, 1987). Similarly, the traditional centre was represented by the alliance of *Centre Union - New Forces* (*EKND - Enosis Kentrou-Nees Dynameis*), headed by Georgios Mavros, and was clearly the political descendant of the pre-dictatorship moderate liberal party, *Centre Union*

(*EK - Enosis Kentrou*). A new element in the political scene of that period was the Panhellenic Socialist Movement (*PASOK - Panellinio Socialistiko Kinima*), founded by Andreas Papandreou some days before the announcement of the election.

In the parliamentary elections of November 1974, ND won a landslide victory with 54.37 percent of the valid votes cast. The EKND achieved 20.42 percent, whereas PASOK obtained 13.58 percent. The OLPR system in the election of 1974 guaranteed absolute dominance for ND with 220 seats in the 300-seat parliament. In Appendix A, we describe the electoral system in detail.[7] In 1977, Prime Minister Konstantinos Karamanlis called for an early election and ND retained its majority with 41.47 percent (171 seats). The big surprise was the success of PASOK that almost doubled its electoral strength (25.3 percent), making Andreas Papandreou a prominent figure in Greek politics (see Nicolacopoulos, 2005).[8] In 1981, the party in power changed after the dominance of PASOK with 48.1 percent (172 seats) -against the 35.9 percent of ND- allowing Andreas Papandreou to form the first socialist government in the history of Greece. In 1985, PASOK won its second four-year period in government with 45.8 percent (161 seats), despite the relative rise of ND (40.8 percent). Table B1, in the Appendix, provides more details about the electoral outcomes of this period.

Using the electoral outcomes of 1974, 1977, 1981 and 1985 we construct two 'political support' variables for the period 1975-1989.[9] First, we construct the share of votes received by the incumbent

[7] It should be noted that similar electoral systems ensured total control of the parliament by all subsequent one-party governments between 1974-1989. In contrast, the electoral law of proportional representation passed by PASOK before the elections of 1989 prevented ND to form a government despite its 5 percent lead in the popular vote against PASOK (see Verney, 1990).

[8] Because of PASOK's success, the vote share obtained by Georgios Mavros' centrist party slumped to 11.95 percent, leading within a few years to its gradual disintegration from the political system (Mavrogordatos, 1984).

[9] Specifically, we forward prefecture level electoral results up to (and including) the year of the next general election (see, e.g., Jablonski, 2014). In addition, we restrict our dataset after 1975 because this is the first year that the incumbent party of ND had discretion over fiscal policy after its victory in the election held in November 1974.

party (*incumbent share*).[10] Second, we construct the difference between *incumbent share* and the voting share of the opposition (*victory margin*).[11] We calculate these shares relative to the entire voting-eligible population. We opt for this measurement since it allows us to better account for endogenous turnout (see, e.g., Spenkuch and Tillmann, 2018). Figure 2 maps the relative electoral strength of ND and PASOK. In particular, the figure illustrates the incumbent share of ND after its first electoral win in the elections of 1974 divided by that of PASOK after its first electoral win in the election in 1981. As it can be seen, areas in Northern Greece, like Serres -the place of origin of Konstantinos Karamanlis- voted strongly in favor of ND. In contrast, prefectures in the south, like Rethymno in the Crete Island, are political strongholds of PASOK.

[Insert Figure 2, here]

2.2. Public investment data

To investigate whether public investment policies by ND and PASOK governments were influenced by pork-barrel politics, we construct the variable *public investment*, expressed in per capita Drachmas at 1980 prices. It is measured as total public investment disbursements -under the Greek Public Investment Programme (PIP)- across all sectors of the economy that are regionally identified at the NUTS-3 level.[12] Figure 3 shows the spatial distribution of *public investment* for the sub-periods 1975-

[10] The reason for this differentiation is that during 1982-1989 we have a dominant opposition party (ND), while between 1974-1981 the centrist party EKND and PASOK alter in the second and third place with the summation of their strength close to 35 percent. More importantly, as explained below, PASOK absorbed the majority of EKND supporters in the transition of its growing influence.

[11] Regarding the opposition, it is measured as the share of votes received by the two leading opposition parties between 1974-1981 (i.e., EKND and PASOK), or the leading opposition party between 1982-1989 (i.e., ND). The reason for this differentiation is that during 1982-1989 we have a dominant opposition party (ND), while between 1974-1981 the centrist party EKND and PASOK alter in the second and third place with the summation of their strength close to 35 percent. More importantly, PASOK absorbed the majority of EKND supporters in the transition of its growing influence.

[12] The PIP includes information that distinguishes the policy purpose of the investment (e.g., education) and the amount of investment committed to a specific geographical location. Total public investment fluctuated around the value of 4 percent of GDP during ND's term in office, whereas this figure increased (on average) by one percent when PASOK came in power. We can identify that each fiscal year around 60 percent of this budget is targeted to a specific NUTS-3 region. The

1981 and 1982-1989 -in per country percentage and sub-period average- that ND and PASOK were in office respectively. It should be noted that the geographical allocation of public investment in Greece during this period is not based on any particular formula. This fact makes funding vulnerable to political manipulation (see Rodriguez-Pose et al., 2016). Consistent to this, strongholds of *ND*, like Serres, receive investment flows 86 percent above Greece's average between 1975-1981, which drops 43 percent below Greece's average during PASOK's term in office. On the contrary, Rethymno, a traditional stronghold of PASOK in the Crete Island, received investment flows 20 percent below average when ND was in power, which was then increased to 70 percent above the country's average from 1982 to 1989 when PASOK was in power.

[Insert Figure 3, here]

3. Empirical Analysis

3.1. Preliminary evidence: Fixed-effects regressions

To estimate the relationship between political support and public investment, we begin by estimating a prefecture-level fixed-effects model as follows:

$$public\ investment_{it} = \alpha_1 political\ support_{it} + \beta Z_i \cdot \varphi_y + \beta X_i \cdot \varphi_y + \theta_i + \theta_t + \varepsilon_{it} \quad (1)$$

where $public\ investment_{it}$ denotes the natural logarithm of real per capita total public investment allocated in prefecture *i* at time *t*; $political\ support_{it}$ is measured by the variables *incumbent share*, and *victory margin* in prefecture *i* in the last election as described in Section 2.1; Z_i includes a set of geographic prefecture characteristics; X_i denotes a set of predetermined prefecture characteristics measured before the beginning of our sample in order to reduce endogeneity concerns (see, e.g., Bahar et al., 2021). Interactions of fixed and predetermined controls and year dummies (φ_y) are included in all our estimates to flexibly account for potential differential non-parametric trends on a number of

remaining 40 percent concerns more general funds 'targeted' at the NUTS-2 level and above (also see Monastiriotis and Psycharis, 2011).

prefecture characteristics. In particular, the variables included in Z_i are: (i) *area pc*; (ii) *altitude*; and (iii) *capital*. Moreover, following studies of the relevant literature (see, e.g., Joanis, 2011; Curto-Grau et al., 2012; Solé-Ollé, 2013), the variables included in X_i are: (i) *income pc*; (ii) *population*; (iii) *unemployed*; (iv) *illiterates* (v) *agricultural share*; (vi) *industrial share*; and (vii) *construction share*. The variable *capital* is based on our own calculations; the variable *income pc* is measured in 1974; whereas the rest are obtained from the census of 1971. Explicit definitions, descriptive statistics and sources of the variables employed throughout the analysis are provided in Table B2 in the Appendix. The model also includes prefecture, θ_i, and year fixed-effects, ϑ_t, to control for time-invariant prefecture characteristics and shocks common to all prefectures. Finally, ε_{it} is the error term clustered at the prefecture *i* level.

To assess if regions with stronger support for the incumbent party receive more investment flows consistent with the core voter hypothesis, the coefficient on *incumbent share* must have a positive sign. Additional evidence to this direction can be provided if the variable *victory margin* returns a positive and statistically significant coefficient. Alternatively, we introduce a squared term of the variable *victory margin* to examine whether Greek governments opted to divert projects towards prefectures with weak support (i.e., swing prefectures) if they believe that their core supporters are going to vote for them unconditionally. If the swing voter argument can explain our results, a positive coefficient on *victory margin* and a negative coefficient on its squared term are to be expected (see Jablonski, 2014; Tribin, 2020).

The estimates of Equation (1) are presented in Table 1. Odd-numbered columns report the results with prefecture, year fixed-effects and geographic controls; whereas even-numbered columns add the predetermined prefectural characteristics. As it can be seen, our empirical results are consistent with the core voter hypothesis (also see, Rodriguez-Pose et al., 2016). In particular, the coefficient of the variable *incumbent share* in columns (1) and (2) is positive and statistically significant at the 1 percent level. Consistent to this, in columns (3) and (4) the coefficient of the variable *victory margin*

is positive and statistically significant at the 5 percent level. Finally, in columns (5) and (6) the coefficient on the polynomial term of *victory margin* is positive (and marginally insignificant), not negative and statistically significant as we would expect according to the swing voter hypothesis. Taking into account the direction of these results, in the analysis that follows we retain the political variable *incumbent share*.

[Insert Table 1, here]

3.2. The IV approach

The literature carefully considers endogeneity concerns suggesting that the relationship between public investment flows and electoral power may seem to exist due to confounding factors that remain unobserved, or because electoral strength is unavoidably endogenous to political "pork" (see, e.g., Matakos and Xefteris, 2016). To address such endogeneity concerns, our main empirical specification consists of an IV approach. More precisely, we estimate 2SLS models employing the political support of ancestor parties before the coup of 1967 as an instrument for the post-dictatorial political support. IV estimates can be thought of as ratios of the corresponding reduced-form and first-stage estimates. In our context, reduced-form estimates indicate the effect of political ancestors' electoral strength on the spatial allocation of public investment, and first-stage estimates indicate the relationship between past electoral strength (i.e., electoral strength of the political ancestors) and contemporary electoral strength (i.e., electoral strength of the political descendants). All else being equal, non-null IV estimates are more plausible if they are part of a seamless set of results: results which show that the political ancestors' electoral strength affects the allocation of public investment (reduced form), past electoral strength and the contemporary electoral strength are strongly associated, and that both push the allocation of public investment in the same direction. Equations (2) to (4) provide the reduced form, first-stage and second-stage specifications:

Reduced form:

$$public\ investment_{it} = \alpha_2 PA\ incumbent\ share_{it} + \beta Z_i \cdot \varphi_y + \beta X_i \cdot \varphi_y + \theta_i + \theta_t + \varepsilon_{it} \quad (2)$$

First-stage:

$$incumbent\ share_{it} = \alpha_3 PA\ incumbent\ share_{it} + \beta Z_i \cdot \varphi_y + \beta X_i \cdot \varphi_y + \theta_i + \theta_t + \varepsilon_{it} \quad (3)$$

Second-stage:

$$public\ investment_{it} = \alpha_4 \widehat{incumbent}\ share_{it} + \beta Z_i \cdot \varphi_y + \beta X_i \cdot \varphi_y + \theta_i + \theta_t + \varepsilon_{it} \quad (4)$$

The variable $PA\ incumbent\ share_{it}$ stands for the incumbent share of Political Ancestors. It is the share of votes received by the incumbent parties in the elections of 1961 and 1964.[13] In particular, the incumbent share of ERE in 1961 corresponds to the incumbent share of its political descendant of ND in 1974 and 1977; whereas the incumbent share of EK in 1964 corresponds to the incumbent share of its political descendant of PASOK in 1981 and 1985. The rest of the variables included in the above specifications are identical to the preceding specification and contain the same controls, prefecture and year fixed-effects.

3.2.1. The political ancestors as an instrument

To provide some evidence regarding long-run partisan loyalty in Greece, Figure 4 plots the incumbent share of ERE (EK) after its last electoral victory in the pre-dictatorial period in 1961 (1964) against the victory margin of ND (PASOK) in its first post-dictatorial victory in 1974 (1981). The correlation of electoral influence between the two right-wing parties in the upper part of Figure 4 is 74 percent, leaving no doubt that ND is the political successor of the pre-junta party of ERE. One could argue though that the observed persistence in regional voting patterns is just an indication that voters in some

[13] It is important to note that the elections of 1961 and 1964 were the last elections that took place before the military junta (1967-1974). In the elections of 1961, ERE was the first party (and formed a government) whereas in the elections of 1964, EK was the first party (and formed a government).

regions prefer the political agenda put forth by one or the other party. Thus, it is important to highlight that this does not seem to be the case for the Greek parties. In the case of ND, the political agenda (i.e., the pre-electoral manifesto) in 1974 was fundamentally different from that put forth by ERE in the pre-dictatorial era across several central political aspects. In particular, in an attempt to attract voters from the pre-junta centrist parties, ND transformed fundamentally changing its stance concerning the institution of monarchy (and the referendum that led to the abolition of monarchy), the issue of language (where the vernacular demotic form was officially adopted), the decision to withdraw from NATO's military wing and an economic policy that were characterized by extensive programs of public ownership (see, e.g., Featherstone and Katsoudas, 1985).[14]

[Insert Figure 4, here]

Regarding the relationship between PASOK and EK, a number of scholars have placed the political origins of PASOK firmly in the traditional centre (see, e.g., Mavrogordatos, 1983b); a view that is also in line with more recent studies suggesting that the political power of PASOK was basically based on the pre-junta interpersonal patronage networks of the EK (see, e.g., Pappas, 2009a; 2009b). However, it is important to note that the socialist party of PASOK cannot be considered as an ideological descendant of the pre-junta centrist party mostly because of its more radical political agenda and the extensive renewal of ideas and practices it brought to the Greek political arena (see Elephantis, 1981; Lyrintzis, 1984). Specifically, PASOK called itself a socialistic movement based on Marxist methodology and theory (although it resolutely rejected Leninist principles and the bureaucratic state socialism of the Eastern bloc). According to PASOK, Greece was economically underdeveloped and politically subordinate because it belonged to the 'capitalist periphery' and it suffered from its foundation, exploitation and domination from the imperialist countries that were its

[14] During that period, the *Hellenic Federation of Enterprises* (SEV) coined the term "social-mania", accusing the prime minister Konstantinos Karamanlis of implementing a radical left-wing economic policy. For more details on this episode, see *To Vima* (6 March 1976).

'protectors' (see, e.g., Elephantis, 1981). Although, this radical political agenda was fundamentally different from that which was put forth by the centrist party of EK, the majority of the centrist voters turned to PASOK in the election of 1981 (see Mavrogordatos, 1984; Nicolacopoulos, 2005). Thus, the observed correlation of 72 percent between the victory margins of the centrist pre-dictatorship party of EK and the post-dictatorship party of PASOK clearly reveals a strong persistence on voting patterns that surely are not due to similarity in the political manifestos between the pre-junta and the post-junta parties.

Our aim is to use the electoral strength of political ancestors as instrument. To do so, it must satisfy both the exclusion restriction and the relevance requirements. We provided initial evidence of instrumental relevance in Figure 4 showing graphically the strong positive correlation in the electoral strength of political ancestors and descendants. Moreover, in the regression tables below, the Kleibergen Paap F-statistic of excluded instrument for each regression it is consistently much greater than 10. Next, the exclusion restriction requires that past electoral strength operates solely through the contemporary electoral strength channel on public investments' flows. This assumption cannot be tested directly and there is always a concern that the electoral strength of the political ancestors may be correlated with factors other than contemporary electoral strength which could be unobserved. Considering that both ND and PASOK were not ideological descendants of the pre-junta parties -since their political agendas were fundamentally different from that of their ancestors- one could argue that the observed persistence in voting preferences is due to loyalty. To further support this view and mitigate concerns about potential factors that may undermine the exclusion restriction, in Table B3 in the Appendix we investigate whether the electoral strength of the two ancestor parties (i.e., ERE and EK) are correlated with our set of confounding factors. Empirical results reported in Panels A and B show that past electoral strength is *not* correlated with any of our controls. This finding strengthens our priors that employed instruments operate solely through a contemporary electoral strength mechanism on the geographical allocation of public investment.

3.2.2. Baseline Results

The IV estimates examining the core voter hypothesis on the allocation of public investment funds are reported in Table 2. The OLS result in column (1) of Table 2 corresponds to the specification with the full set of controls in column (2) of Table 1. Column (2) of Table 2 reports the reduced form estimates, column (3) provides the first-stage estimates and column (4) reports the IV estimates. As can be seen in column (2), the electoral strength of political ancestor parties is positively related to the allocation of public investment funds at the 5 percent level of significance. These estimates highlight the long-term influence of political preferences on public policy (see also Joanis, 2011). Moreover, consistent with the exploratory evidence in Figure 4, the first-stage estimates, reported in column (3), reveal significant persistence in political preferences. The value of the first-stage Kleibergen Paap F-statistic for the exclusion of instrument is reported in column (4) and is equal to 51, confirming that past political preferences do matter for the observed variation in the post-1974 period.

Both the reduced form and first-stage estimates are promising conditions for the IV analysis of the effect of *political support*. As can be seen in column (4), the coefficient of the latter is positive and statistically significant at the 1 percent level. Our results reveal a larger magnitude of the IV relative to the OLS estimates in column (1). This could indicate that omitted variable bias weight heavier than the impact from reverse causality. Yet, an alternative explanation is that the instrument picks up a Local Average Treatment Effect (LATE). While we cannot provide direct evidence against a LATE interpretation, a negative bias is more consistent with the fact that OLS estimates increase in magnitude when a large set of controls is included (see columns (1) and (2) of Table 1).[15] Qualitatively, IV

[15] Building on the seminal paper by Altonji et al. (2005), Oster (2019) assesses how large the bias due to unobservables should be, in comparison to that of observables, in order to explain away the estimated effect. The ratio between the two components of the bias is denoted as δ. This exercise returns a ratio that is (above 1 and) negative, which indicates a negative correlation between observables and unobservables and implies that the coefficient increases when controls are added to the model. It also indicates that for the results to become economically insignificant, the selection on unobservable factors would have to dominate the selection on the included observables and work in the opposite direction.

estimates suggest that a one SD increase in the *incumbent share* (or 7.7 percent) leads to a 11.5 percentage points increase in the allocation of public funds.

[Insert Table 2, here]

3.2.3. *Robustness checks*

Our first robustness check is to experiment with an alternative political support measure to add validity in our argument that our findings are explained by the core voter hypothesis. In particular, we replace the continuous variable *incumbent share* with a dichotomous classification that allows us to identify the most traditional political strongholds of the two parties (see, e.g., Tribin, 2020). The variable *stronghold* takes the value 1 if ND and PASOK have won at the prefecture level for all four elections from 1974 to 1985. Alternatively, the less restrictive variable *stronghold 2* takes the value 1 in prefectures that ND and PASOK won at least three out of four elections from 1974 to 1985. Our reasoning for the latter variable is that at least one of these victories comes in an election that the party lost at the national level.[16] Panels A and B of Figures B2 in the Appendix provide exploratory evidence illustrating that areas in northern Greece (like Serres, the place of origin of Konstantinos Karamanlis) and south Peloponnese voted strongly in favor of ND, whereas prefectures in the Crete island and south Peloponnese (like Achaia, the place of origin of Andreas Papandreou) are political strongholds of PASOK.

The empirical results using the alternative variables are presented in Table 3. As can be seen in columns (1) and (4), the coefficients of OLS estimates for the variables *stronghold* and *stronghold 2* are positive but marginally insignificant at the 10 percent level. However, they turn positive and statistically significant at the 5 percent level in columns (3) and (6) which report the IV estimates. As before, the instrument employed is the voting share of political ancestor parties. According to the results provided in columns (2) and (5), the latter is strongly correlated with the prefectures identified

[16] It should be noted that according to both definitions, the strongholds include prefectures in the top quartile of the distribution of electoral strength.

as strongholds for the two parties with a Kleibergen Paap *F*-statistic always very large.[17] The results suggest that the stronger political bailiwicks identified by the variable *stronghold* receive approximately 35 percent more public investment. This percentage drops to 23.5 percent when we use the more relaxed definition of the variable *stronghold 2*. Overall, the empirical findings from the two alternative variables employed, as well as the increase in the magnitude for the strict definition of strongholds, are consistent with the core voter hypothesis.

[Insert Table 3, here]

Our second robustness check is to employ an alternative measure of public investments flows. More precisely, given that *public investment* is measured at the regional level on a yearly basis it can be very volatile over time. To this end, in Table B4 in the Appendix we aggregate our variables per term-of-office. Once again, results are very similar to those obtained in Table 2. Finally, our third robustness check is to remove from our in-sample the period 1975 to 1977. The reason is that these are the first years after the transition to democracy combined with a call by the prime minister for an early election in 1977. It would be problematic if our findings are mainly driven by this very turbulent period of Greek politics. As can be seen in Table B5 in the Appendix, our results remain intact even by omitting the first period in our estimations.[18]

3.2.4. Placing the spotlight on the mechanism: The key role of powerful MPs

In an effort to explain why governments prioritize swing or core/loyal constituencies, a strand of the literature places the spotlight on political institutions and, especially, on the electoral system (see, e.g.,

[17] The reduced form estimates correspond to those already reported in column (2) of Table 2.

[18] The same applies when we drop from the sample all subsequent terms in office (1978-1981, 1982-1985 and 1986-1989) by the governments that followed. Results are available upon request.

McGillivray, 2004; Kemmerling and Stephan, 2015).[19] A major characteristic of the political system that is expected to affect the allocation of public investment is the degree of personalism in the electoral contests (see, e.g., McGillivray, 2004; Golden and Picci, 2008) and, consequently, the relative strength of the party vis-à-vis local legislators (i.e., MPs).

Practically, party strength can be thought as the degree of central party control over candidate selection. McGillivray (2004) contends that in the context of a majoritarian voting system, weak parties are not able to effectively discipline their MPs. Therefore, MPs with greater seniority or greater influence within the party direct resources to their home constituencies even when the latter appears to be safe and not marginal. Similarly, Golden and Picci (2008) suggest that also under an OLPR system, powerful MPs typically favor their home constituencies. This is due to the fact that OLPR induces intra-party competition -as candidates compete over their co-partisans in order to be elected- and this may lead candidates to cultivate their own personal reputation among the voters (see, e.g., Carey and Shugart, 1995) as well as to develop clientelistic linkages between them and the electorate (see, e.g., Ames, 1995; Kitschelt, 2000).

The political landscape in Greece is characterized by a substantial degree of electoral personalism (see, e.g., Mavrogordatos, 1983a). This is due to the following two reasons: (i) the electoral system which was a standard OLPR encouraged this environment, and (ii) also because Greece during the period under investigation was a 'new democracy' characterized by infant and relatively weak political parties that were drawing electoral support from powerful MPs and their

[19] Building on the pioneer studies of Lizzeri and Persico (2001) and Milesi-Ferretti et al. (2002), this literature argues that under majoritarian (or plurality) voting systems, politicians prefer to distribute benefits through geographically targetable public goods directed to marginal electoral districts. This is because legislative seats require plurality of votes in each electoral district and, therefore, votes in contested districts matter more to politicians than votes in safe districts. As a result, politicians face incentives to behave along the predictions of the 'swing voter' hypothesis. In contrast, proportional voting systems are less vulnerable to regional pork-barrel strategies (see, e.g., Persson and Tabellini, 2002).

personalistic patron-client networks.[20] To investigate this possibility, we employ data from Tziovaras and Chiotis (2006) and construct the variables *powerful MPs*, *ministers* and *deputy ministers*.

The variable *minister* (*deputy minister*) equals to 1 when an appointed minister (deputy minister) of the government has been elected in prefecture *i* and year *t*, and 0 otherwise. Moreover, the variable *powerful MPs* equals to 1 when an appointed minister (or deputy minister) of the government has been elected in prefecture *i* and year *t*, and 0 otherwise.[21] The idea behind this is that we expect popular MPs of both parties to be assigned in ministerial positions, whereas, at the same time, these positions offer them discretion over the allocation of investment funds to benefit their home constituencies in an attempt to get re-elected. It should be noted that simple fixed-effect regressions, reported in Table B6 in the Appendix, indicate a positive relationship between electoral strength at the prefecture level and the probability to have a *powerful MP* as minister or deputy minister. Interestingly, this relationship seems to be driven mostly by deputy ministers rather than ministers.

Table 4 presents the results that test the mediating role of powerful MPs on the geographical allocation of public investment funds. For brevity, we present only the OLS and the IV results -odd and even columns, respectively- for specifications employing the three variables described above. As can be seen in column (2), the interaction term between the incumbent share and powerful MPs of the IV estimates is positive and statistically significant at the 10 percent level. This is consistent with our expectations that loyal prefectures receive more public investment when they have *powerful MPs*

[20] More precisely, these patron-client linkages form pyramids with powerful MPs at the apex, local party bosses in the middle and individual voters at the base (see, e.g., Mavrogordatos, 1983a). Traditionally, these networks of local bosses and middlemen belonged personally to the powerful MPs, and it was a common practice to be transmitted as inheritance -or even as dowry- within the same family from one generation to the other. It is obvious that in such political context, powerful MPs were the ultimate centre of political power and, consequently, the political parties were built structurally around these networks of local notables (see Meynaud, 2002, for more details on this). The absence of effective party organization and mass membership constituted to the party's parliamentary group being extremely powerful; this situation is often described as *vouleftokratia* ('rule of the MPs') in the relevant literature.

[21] It should be noted that our classification considers ministers that have been elected in the prefecture and also plan to be candidates in the next election.

appointed as ministers or deputy ministers, since the latter attempt to support their patron-client linkages in order to increase their re-election prospects in an OLPR system. In columns (3)-(4) and (5)-(6) we split *powerful MPs* to *ministers* and *deputy ministers*, respectively. Interestingly, the previously discussed relationship seems to be driven by the *deputy ministers*. A possible explanation is that high-profile elected ministers are not in need to use their discretion over public investment funds as their position is anyway secure. In contrast, deputy ministers, who are lower in the ranks, attempt to support their candidacy against competitors from the same party by allocating more public investment funds within their prefecture; in turn parties profit from their electoral influence.[22]

[Insert Table 4, here]

4. Conclusions

Using Greece as our case study, we investigate potential political incentives behind the geographical allocation of public investment spending (also see, Rodriguez-Pose et al., 2016; Psycharis et al., 2021). Building on a dataset of public investment spending for 52 prefectures (NUTS-3 level) over the period 1975-1989, our analysis provides evidence that governments were systematically directing public resources to their political strongholds. Our main evidence comes from an IV analysis that exploits the discontinuity in the political landscape of Greece after a brief military junta (1967-1974). In particular, we estimate 2SLS models using the political support of ancestor parties before the coup of 1967 as an instrument for the post-dictatorial political support. We show that: political ancestors' electoral

[22] It has been argued that, since 1974, the pre-junta party system, which was based on traditional interpersonal patron-client relationships, was starting to be transformed. In particular, the new parties that emerged during Metapolitefsi were developing stronger organizational structure, mass membership and a new type of clientelistic networks described as *bureaucratic clientelism* (or *machine politics*) instead of *traditional patronage* (see, e.g., Lyrintzis,1984; Mavrogordatos, 1983a, 1997; Kammas et al., 2021). This transformation of the political system is a stylized fact. However, this does not mean that the interpersonal clientelistic relationships of the past disappeared. In contrast, at least during the first years of Metapolitefsi, the newly established political parties were trying to maintain the political networks of their (pre-junta) political ancestors that were structured around powerful MPs and, at the same time, to develop a strong organizational structure (see Kammas et al., 2021, for more details on this).

strength affects the allocation of public investment (reduced form), political support between the political ancestor and descendant parties is strongly related (first-stage), and that both affect the allocation of public investment towards prefectures with many core supporters.

Furthermore, our analysis attempts to illuminate the mechanism of this relationship highlighting the important role of powerful MPs and their personalistic patron-client networks. Interestingly, our results indicate that it is more likely that the deputy ministers -and not the ministers- support their candidacy against competitors from the same party in an OLPR system by allocating more public investment funds within the prefecture. The rationale behind this interesting finding is that parties usually appoint deputy ministers from areas characterized as political strongholds to maintain their networks of political patronage through political "pork". Obviously, the maintenance of these networks benefits primarily the local politicians and secondarily the political parties which profit from this increased electoral influence.

Overall, the institutional and political framework of Greece during the period of the so-called *Metapolitefsi* provides a good laboratory to examine and learn for the presence of political distortions (see Chortareas et al., 2016; Rodriguez-Pose et al., 2016; Chortareas et al., 2018; Kitsos and Proestakis, 2021). Obviously, there is more research that could be done. For example, there are important spending categories, such as spending on wages and salaries of public employees, which contributed significantly to the fiscal derailment of the Greek state, that -to the best of our knowledge- have not been investigated using advanced quantitative methods. More generally, an advantageous field for future research would be to use cross-country comparisons (using regional level data within countries) under different electoral rules when investigating the role of intertemporal party strength. Finally, an issue of paramount importance -which remains yet unexplored- is the investigation of the factors which determine intertemporal party strength beforehand.

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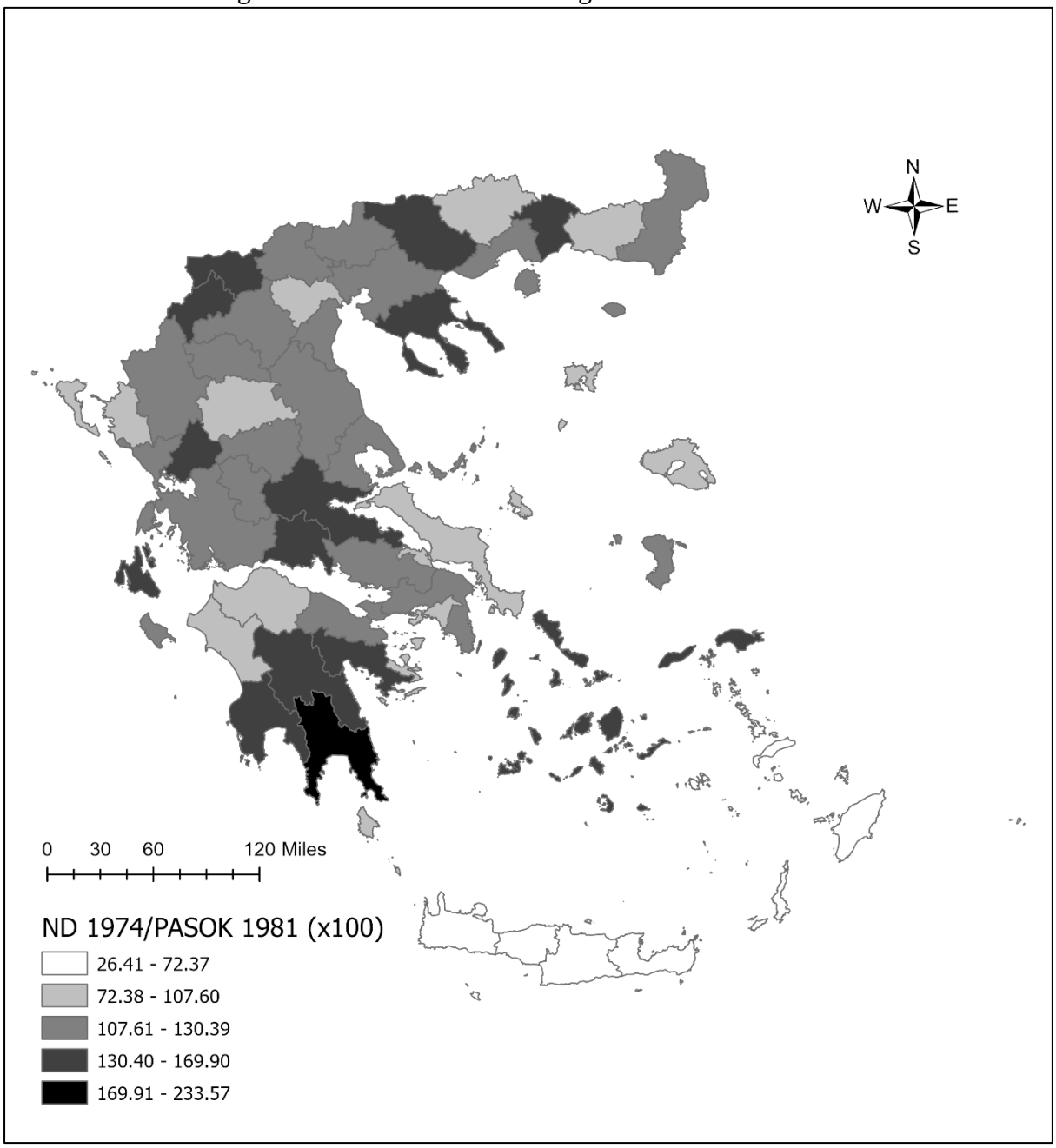
Figure 1. Public investment

Notes: The dashed line indicates the year that the socialist party PASOK came in power after the election of 1981.

Figure 2. Relative electoral strength of ND and PASOK



Notes: ND 1974 (PASOK 1981) stands for the incumbent share of ND (PASOK) after its electoral victory in 1974 (1981). Darker (brighter) colours indicate higher electoral strength of ND (PASOK).

Figure 3. Public investment per capita

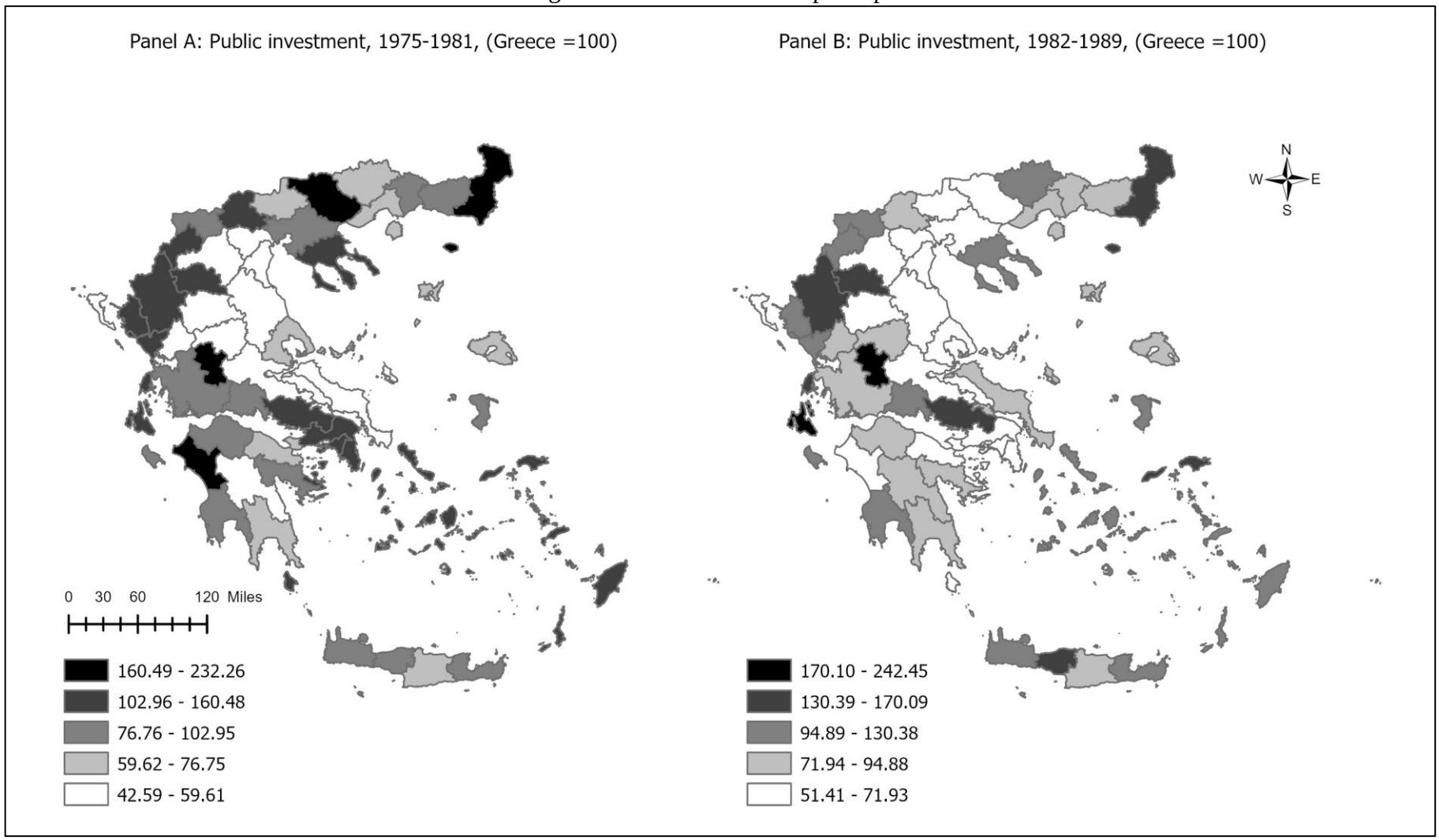


Figure 4. Long-run partisan loyalty in Greek prefectures

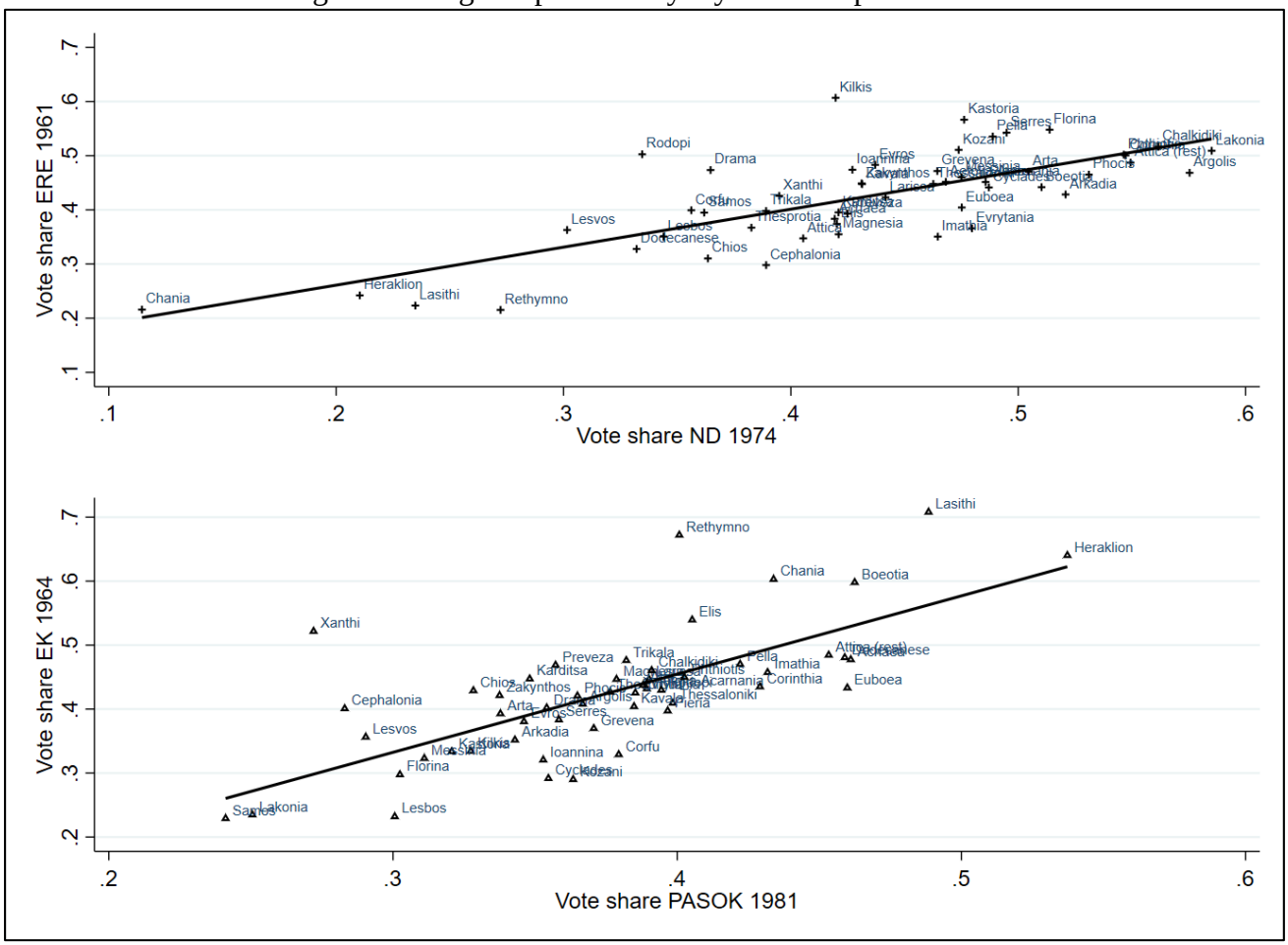


Table 1. Political support and the allocation of public investment

	(1)	(2)	(3)	(4)	(5)	(6)
incumbent share	0.882***	0.976***				
	(0.312)	(0.362)				
victory margin			0.408**	0.464**	0.208	0.192
			(0.181)	(0.192)	(0.143)	(0.191)
victory margin^2					2.177	2.738
					(1.777)	(2.427)
Observations	780	780	780	780	780	780
R^2	0.532	0.655	0.528	0.651	0.532	0.655
Prefecture FE	√	√	√	√	√	√
Year FE	√	√	√	√	√	√
Geographic controls	√	√	√	√	√	√
Additional controls		√		√		√

Notes: The table reports OLS estimates of Equation (1). The dependent variable is measured as natural logarithm of real per capita total public investment. Incumbent share is the share of votes received by the incumbent party in the elections of 1974,1977, 1981 and 1985, whereas victory margin is the difference between the incumbent share and the share of votes received by the opposition. Geographic controls include the interaction of year dummies and (i) area pc, (ii) altitude and (iii) capital. Additional controls include the interaction of year dummies and (i) income pc, (ii) population, (iii) unemployed, (iv) illiterates, (v) agricultural share, (vi) industrial share and (vii) construction share. Income pc is measured in 1974, whereas the rest variables are obtained from the census of 1971. Robust standard errors, clustered by prefecture, are reported in parentheses. *, **, *** denote statistical significance at the 10%, 5%, 1% level respectively.

Table 2. Political support and the allocation of public investment: IV estimates

	(1) OLS	(2) Reduced form	(3) First-stage	(4) IV
incumbent share	0.976***			1.219**
	(0.362)			(0.507)
PA incumbent share		0.627**	0.515***	
		(0.265)	(0.072)	
Observations	780	780	780	780
R^2	0.655	0.653	0.742	0.654
Kleibergen Paap F-statistic				51.751
Prefecture FE	√	√	√	√
Year FE	√	√	√	√
Geographic controls	√	√	√	√
Additional controls	√	√	√	√

Notes: Columns (1), (2), (3) and (4) report estimates of Equations (1), (2), (3) and (4) respectively. The dependent variable is measured as natural logarithm of real per capita total public investment. Incumbent share is the share of votes received by the incumbent party in the elections of 1974, 1977, 1981 and 1985. PA incumbent share is the share of votes received by the incumbent party in the elections of 1961 and 1964. The incumbent share of ERE in 1961 corresponds to the incumbent share of ND in 1974 and 1977. The incumbent share of EK in 1964 corresponds to the incumbent share of PASOK in 1981 and 1985. Geographic controls include the interaction of year dummies and (i) area pc, (ii) altitude and (iii) capital. Additional controls include the interaction of year dummies and (i) income pc, (ii) population, (iii) unemployed, (iv) illiterates, (v) agricultural share, (vi) industrial share and (vii) construction share. Income pc is measured in 1974, whereas the rest variables are obtained from the census of 1971. Robust standard errors, clustered by prefecture, are reported in parentheses. *, **, *** denote statistical significance at the 10%, 5%, 1% level respectively.

Table 3. Political strongholds and the allocation of public investment: IV estimates

	(1) OLS	(2) First-stage	(3) IV	(4) OLS	(5) First-stage	(6) IV
stronghold	0.149		0.299**			
	(0.095)		(0.122)			
PA incumbent share		0.469***			0.515***	
		(0.068)			(0.072)	
				0.136		0.211**
stronghold 2				(0.082)		(0.082)
Observations	780	780	780	780	780	780
R^2	0.645	0.750	0.640	0.651	0.742	0.648
Kleibergen Paap F-statistic			73.071			64.500
Prefecture FE	√	√	√	√	√	√
Year FE	√	√	√	√	√	√
Geographic controls	√	√	√	√	√	√
Additional controls	√	√	√	√	√	√

Notes: Columns (1), (2) and (3) report estimates of Equations (1), (3) and (4) respectively. Columns (4)-(6) follow the same structure. The dependent variable is measured as natural logarithm of real per capita total public investment. The variable stronghold in columns (1)-(3) takes the value of 1 if ND and PASOK have won at the prefecture level the elections of 1974,1977, 1981 and 1985. The variable stronghold 2 in columns (4)-(6) takes the value of 1 if ND and PASOK have won at the prefecture level at least three of the four elections of 1974,1977, 1981 and 1985. The rest information is similar as in Table 2. Robust standard errors, clustered by prefecture, are reported in parentheses. *, **, *** denote statistical significance at the 10%, 5%, 1% level respectively.

Table 4. Political support and the allocation of public investment: The role of powerful MPs

	(1)	(2)	(3)	(4)	(5)	(6)
	OLS	*IV*	*OLS*	*IV*	*OLS*	*IV*
MPs variable	*powerful MPs*		*ministers*		*deputy ministers*	
incumbent share	0.760**	0.705*	1.078***	1.272**	0.655**	0.636
	(0.339)	(0.428)	(0.392)	(0.531)	(0.322)	(0.439)
MPs variable	-0.335	-0.581*	0.093	-0.041	-0.563*	-1.054**
	(0.236)	(0.327)	(0.250)	(0.201)	(0.309)	(0.525)
incumbent share · MPs variable	0.742	1.386*	-0.539	-0.179	1.454*	2.706**
	(0.581)	(0.835)	(0.642)	(0.508)	(0.762)	(1.341)
Observations	780	780	780	780	780	780
R^2	0.659	0.657	0.660	0.658	0.661	0.655
Kleibergen Paap F-statistic		28.784		25.711		14.060
Prefecture FE	√	√	√	√	√	√
Year FE	√	√	√	√	√	√
Geographic controls	√	√	√	√	√	√
Additional controls	√	√	√	√	√	√

Notes: Columns (1) and (2) report estimates of Equations (1) and (4) respectively, augmented with the variable powerful MPs and its interaction with the incumbent share. Columns (3)-(4) and (5)-(6) follow the same structure for the variables ministers and deputy ministers, respectively. The dependent variable is measured as natural logarithm of real per capita total public investment. The variable powerful MPs equals to 1 when an appointed minister (or deputy minister) of the government has been elected in the prefecture, and 0 otherwise. The variable ministers (deputy ministers) equals to 1 when an appointed minister (deputy minister) of the government has been elected in the prefecture, and 0 otherwise. Incumbent share is the share of votes received by the incumbent party in the elections of 1974, 1977, 1981 and 1985. The rest information is similar as in Table 2. Robust standard errors, clustered by prefecture, are reported in parentheses. *, **, *** denote statistical significance at the 10%, 5%, 1% level respectively.

Appendix A. 1974 electoral law of reinforced proportionality

The parliamentary elections of November 1974 were held under an electoral system of reinforced proportionality established by the Legislative Decree No 650/1974 (LD 65/1974).[23] The system employed was based on a Hagenbach-Bischoff system and appeared to be similar to that in force during the pre-dictatorial elections of 1961, 1963 and 1964 (see, e.g., Clogg, 1987). More precisely, the number of members in parliament has been fixed at 300, of whom 12 are 'state' MPs. The country was divided into 56 electoral districts which were based on 52 different prefectures.[24] The allocation of MPs to each electoral district is determined by dividing the number of the eligible voters countrywide by the number of seats in the parliament (currently 288, i.e. 300 minus the 12 'state' MPs). This gives a quota of *electors per seat* (i.e., the number of votes that are required in order to gain a seat in the parliament). In turn, the number of eligible voters in each electoral district is divided by this quota of *electors per seat* in order to give the *number of seats in each electoral district*.

After the elections, the distribution of seats among parties in each district takes place according to the following formula: in the first distribution, the number of seats allocated to each party in a district was obtained by dividing the number of valid votes gained by the party in the district with the *electors per seat* of this specific district. In turn, the seats that were not allocated in the first distribution were held over to the second distribution in which they had the right to participate only the parties that received at least 17 percent of the vote countrywide. Finally, any seats that had still not been allocated -during the second distribution- were distributed in the third distribution (see Clogg, 1987, for more

[23] It must be noted that all the elections until the year 1989 were held under similar electoral laws of reinforced proportionality. More precisely, the elections of November 1977 were held under the *Electoral Law: 626/ 1977*, the elections of October 1981 under the *Electoral Law: 1180/ 1981* and the elections of June 1985 under the *Electoral Law: 1516/1985.* Then, in 1989, the socialist government of Andreas Papandreou passed an electoral law of simple proportionality -that was very different from the previous laws of reinforced proportionality- changing in that way drastically the 'rules of the game' of the political system in Greece.

[24] Because of the concentration of population in the two major urban centres, Athens and Thessaloniki, the prefecture of Athens was divided into four electoral constituencies (i.e., Athens-A, Athens-B, Piraeus-A and Piraeus-B), whereas the prefecture of Thessaloniki was divided into two electoral constituencies (i.e., Thessaloniki-A and Thessaloniki-B).

details on this). It is important to note that the electoral system in Greece was an OLPR during the period under investigation where the voters are entitled to express their preferences over a candidate by marking a cross on the ballot paper on the left of the name of the candidate (this is the so called '*stavrodosia*'). Obviously, in such an open list system, the electorate rather than the party (or the leader of the party) determines the order in which the MPs were elected (depending -of course- on the number of the seats won by the party) and, therefore, local candidates have incentives to direct resources to their bailiwicks in order to prevent voters from switching support to another local candidate on the same party list (see, e.g., Golden and Picci, 2008).

Appendix B. Additional Tables and Figures

Figure B1. Administrative boundaries of prefectures in Greece

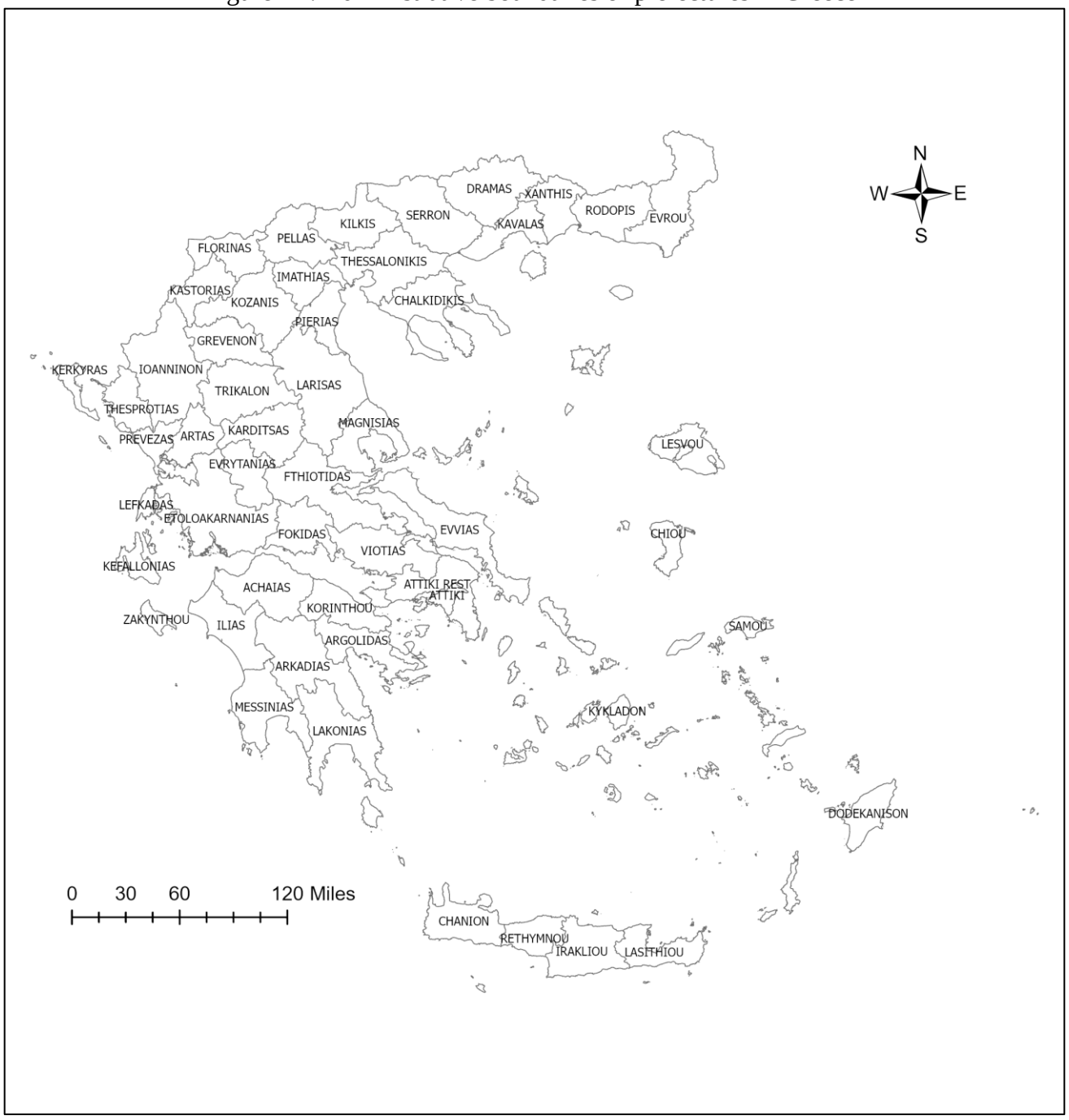


Figure B2. Political strongholds of ND and PASOK

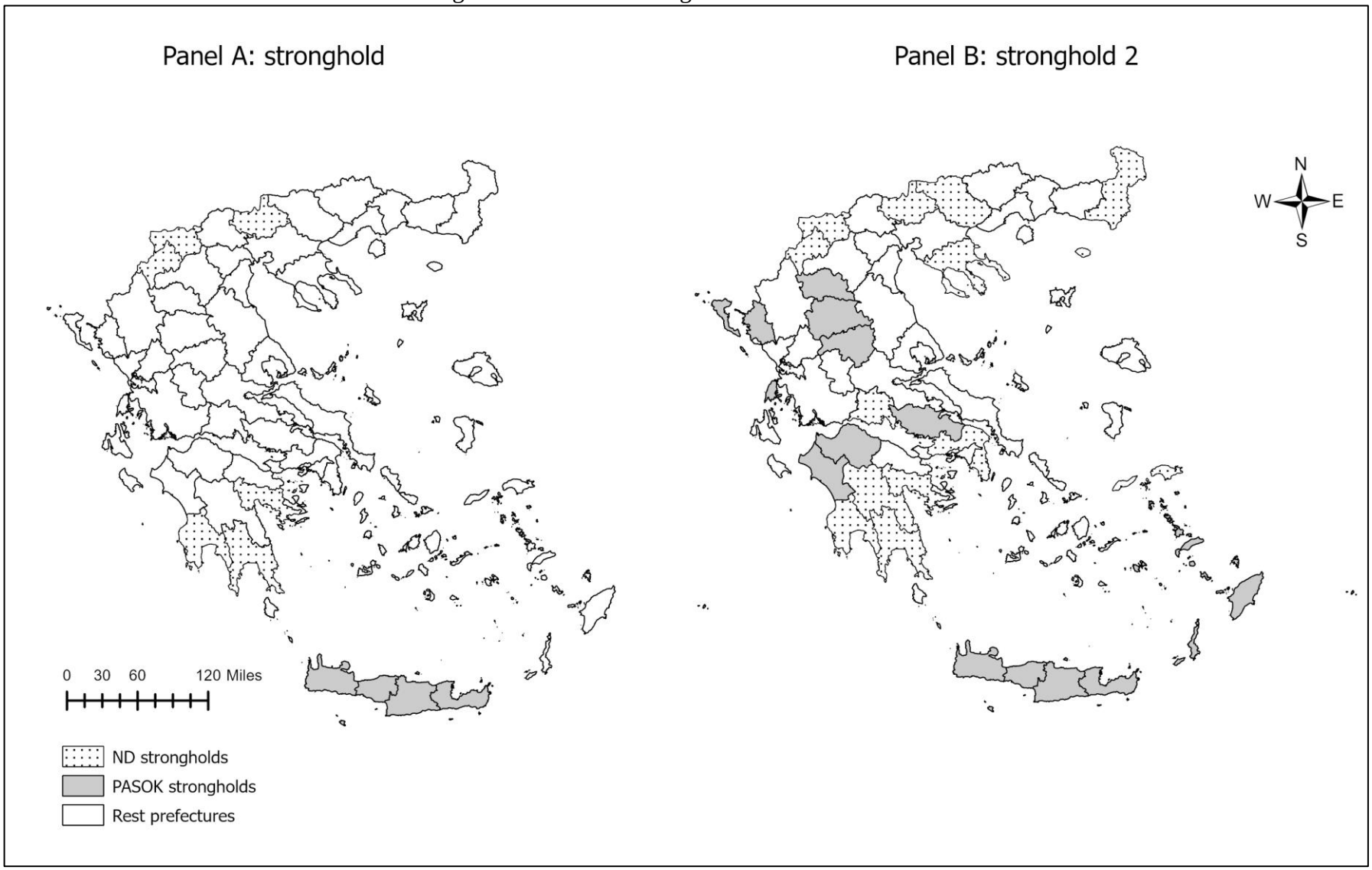


Table B1. Elections, votes' shares and number of seats of the parties that elected MPs

Party	***Vote's share***	***Seats***	***Party leader***
Elections of 17 November, 1974 [Electoral Law: 65/1974, Reinforced Proportionality, 300 seats]			
New Democracy [ND]	54.37%	220	Konstantinos Karamanlis
Centre Union and New Forces [EKND]	20.42%	60	Georgios Mavros
Panhellenic Socialistic Movement [PASOK]	13.58%	12	Andreas Papandreou
United Left [UL]	9.47%	8	Ilias Iliou
Elections of 20 November, 1977 [Electoral Law: 626/ 1977, Reinforced Proportionality, 300 seats]			
New Democracy [ND]	41.47%	171	Konstantinos Karamanlis
Panhellenic Socialistic Movement [PASOK]	25.34%	93	Andreas Papandreou
Union of the Democratic Centre [EDIK]	11.95%	15	Georgios Mavros
Communist Party of Greece [KKE]	9.36%	11	Charilaos Florakis
National Alignment [EP]	6.82%	5	Stephanos Stephanopoulos
Progress and Left Forces Alliance	2.72%	2	Ilias Iliou
Party of New Liberals	1.08%	2	Konstantinos Mitsotakis
Elections of 18 October, 1981 [Electoral Law: 1180/ 1981, Reinforced Proportionality, 300 seats]			
Panhellenic Socialistic Movement [PASOK]	48.07%	172	Andreas Papandreou
New Democracy [ND]	35.87%	115	Georgios Rallis
Communist Party of Greece [KKE]	10.93%	13	Charilaos Florakis
Elections of 2 June, 1985 [Electoral Law: 1516/1985, Reinforced Proportionality, 300 seats]			
Panhellenic Socialistic Movement [PASOK]	45.82%	161	Andreas Papandreou
New Democracy [ND]	40.84%	126	Konstantinos Mitsotakis
Communist Party of Greece [KKE]	9.89%	12	Charilaos Florakis
Communist Party of Greece (Interior)	1.84%	1	Leonidas Kyrkos

Notes: All vote shares are expressed as percentages of valid votes cast. Source: Ministry of Interior, Directorate of Elections.

Table B2. Definition of variables, data sources and descriptive statistics

	Description	count	mean	sd	min	max	
public investment	Total public investment, expressed in real per capital terms.	780	5478.433	3153.861	1136.534	26272.926	Ministry of Economy and Development, Directorate of Public Investment
incumbent share	Valid votes for the incumbent party as a share of the voting-eligible population in the elections of 1974,1977, 1981 and 1985. We forward prefecture level electoral results up to (and including) the year of the next general election.	780	0.370	0.077	0.115	0.585	
victory margin	The difference between incumbent share and vote share of the opposition party/parties. Between 1975-1981 the opposition is composed by vote shares received by the two leading opposition parties (i.e, EKND and PASOK), whereas between 1982-1989 by the leading opposition party ND. We forward prefecture level electoral results up to (and including) the year of the next general election.	780	0.070	0.119	-0.323	0.431	
stronghold	Dummy variable that takes the value 1 if ND and PASOK have won at the prefecture level all four elections between 1974 and 1985, and 0 otherwise.	780	0.095	0.293	0.000	1.000	Ministry of Interior, Directorate of Elections
stronghold 2	Dummy variable that takes the value 1 if ND and PASOK have won at the prefecture level at least three out four elections between 1974 and 1985, and 0 otherwise.	780	0.260	0.439	0.000	1.000	
PA incumbent share	Valid votes for the incumbent party as a share of the voting-eligible population in the elections in the elections of 1961 and 1964. The incumbent share of ERE in 1961 corresponds to the incumbent share of ND in 1974 and 1977. The incumbent share of EK in 1964 corresponds to the incumbent share of PASOK in 1981 and 1985.	780	0.423	0.095	0.215	0.708	
powerful MPs	Dummy variable that takes the value 1 when an appointed minister or deputy minister of the government has been elected in the prefecture, and 0 otherwise.	780	0.378	0.485	0.000	1.000	
ministers	Dummy variable that takes the value 1 when an appointed minister of the government has been elected in the prefecture, and 0 otherwise.	780	0.187	0.390	0.000	1.000	Tziovaras and Chiotis (2006)
deputy ministers	Dummy variable that takes the value 1 when an appointed deputy minister of the government has been elected in the prefecture, and 0 otherwise.	780	0.274	0.446	0.000	1.000	
capital	Dummy variable that takes the value 1 if the prefecture overlaps with the capital of the periphery, and 0 otherwise.	52	0.250	0.437	0.000	1.000	Own calculations
area pc	Total area in square km per capita	52	2507.271	1211.276	354.736	5369.358	
altitude	Mean altitude of the area that covers the prefecture	52	217.169	199.128	54.000	834.000	
population	Total population	52	168588.5	357603.9	24584	2595852	
unemployed	The share of individuals that are unemployed	52	0.031	0.012	0.010	0.054	Digital library of the Hellenic Statistical Authority (ELSTAT): Census of 1971
illiterates	The share of individuals that are illiterates	52	0.178	0.050	0.075	0.329	
industrial share	The share of individuals employed in the industrial sector	52	0.108	0.070	0.038	0.363	
agricultural share	The share of individuals employed in the agricultural sector	52	0.578	0.160	0.016	0.786	
construction share	The share of individuals employed in the construction sector	52	0.066	0.026	0.025	0.161	
income pc	Mean income per capita	52	111.847	29.701	61.517	247.452	Ministry of Development: Estimates of regional product 1974

Notes: Variables public investment, area pc, altitude, population are in levels. In regressions, they are expressed in logarithmic terms.

Table B3. Balance Test

Dependent variable:	(1) *area pc*	(2) *altitude*	(3) *capital*	(4) *income pc 1974*	(5) *population 1971*	(6) *unemployed 1971*	(7) *illiterates 1971*	(8) *industrial share 1971*	(9) *agricultural share 1971*	(10) *construction share 1971*
Panel A										
ERE_{1961}	1.068	-0.786	-0.520	0.300	1.397	-0.588	-1.729	2.951	-7.493	3.773
	(0.979)	(0.820)	(0.589)	(0.295)	(0.901)	(1.822)	(5.308)	(8.014)	(17.491)	(3.239)
Observations	52	52	52	52	52	52	52	52	52	52
R2	0.031	0.013	0.015	0.017	0.032	0.003	0.001	0.002	0.002	0.022
Panel B										
EK_{1964}	1.529	1.499	-0.072	0.402	0.097	1.879	3.794	4.553	26.107	-4.750
	(0.971)	(1.068)	(0.618)	(0.257)	(1.090)	(1.593)	(6.130)	(12.118)	(24.855)	(3.855)
Observations	52	52	52	52	52	52	52	52	52	52
R2	0.049	0.037	0.000	0.024	0.000	0.020	0.005	0.003	0.021	0.027

Notes: The table reports OLS estimates. Each observation is a prefecture. Column titles refer to the dependent variable. In Panel A variable ERE_{1961} (EK_{1964}) refers to the vote share of ERE (EK) in the election of 1961 (1964). Robust standard errors in parentheses. *denotes significance at 10%; ** at 5% level and *** at 1% level.

Table B4. Political support and the allocation of public investment: IV estimates, average by term in office

	(1) *OLS*	(2) *Reduced form*	(3) *First stage*	(4) *IV*
incumbent share	1.058***			1.283**
	(0.361)			(0.524)
political ancestor incumbent share		0.701**	0.523***	
		(0.271)	(0.072)	
Observations	208	208	208	208
R2	0.693	0.692	0.748	0.689
Kleibergen Paap F-statistic				52.337
Prefecture FE	√	√	√	√
Year FE	√	√	√	√
Geographic controls	√	√	√	√
Additional controls	√	√	√	√

Notes: Columns (1), (2), (3) and (4) report estimates of equations (1), (2), (3) and (4) respectively. The four terms in office are the following: 1975-1977, 1978-1981, 1982-1985, and 1986-1989. The dependent variable is measured as natural logarithm of real per capita total public investment. Incumbent share is the share of votes received by the incumbent party in the elections of 1974,1977, 1981 and 1985. Political ancestor incumbent share is the share of votes received by the incumbent party in the elections of 1961 and 1964. The incumbent share of ERE in 1961 corresponds to the incumbent share of ND in 1974 and 1977. The incumbent share of EK in 1964 corresponds to the incumbent share of PASOK in 1981 and 1985. Geographic controls include the interaction of year dummies and (i) area pc; (ii) altitude (iii) capital. Additional controls include the interaction of year dummies and (i) income pc; (ii) population; (iii) unemployed; (iv) illiterates (v) agricultural share; (vi) industrial share; and (vii) construction share. Income pc is measured in 1974, whereas the rest variables are obtained from the census of 1971. Robust standard errors, clustered by prefecture, are reported in parentheses. *, **, *** denote statistical significance at the 10%, 5%, 1% level respectively.

Table B5. Political support and the allocation of public investment: IV estimates, excluding 1975-77

	(1) *OLS*	(2) *Reduced form*	(3) *First stage*	(4) *IV*
incumbent share	0.937**			1.055**
	(0.411)			(0.473)
P incumbent share		0.481**	0.456***	
		(0.230)	(0.063)	
Observations	624	624	624	624
R2	0.690	0.687	0.693	0.690
Kleibergen Paap F-statistic				51.784
Prefecture FE	√	√	√	√
Year FE	√	√	√	√
Geographic controls	√	√	√	√
Additional controls	√	√	√	√

Notes: Columns (1), (2), (3) and (4) report estimates of equations (1), (2), (3) and (4) respectively. The dependent variable is measured as natural logarithm of real per capita total public investment. Incumbent share is the share of votes received by the incumbent party in the elections of 1974,1977, 1981 and 1985. Political ancestor incumbent share is the share of votes received by the incumbent party in the elections of 1961 and 1964. The incumbent share of ERE in 1961 corresponds to the incumbent share of ND in 1974 and 1977. The incumbent share of EK in 1964 corresponds to the incumbent share of PASOK in 1981 and 1985. Geographic controls include the interaction of year dummies and (i) area pc; (ii) altitude (iii) capital. Additional controls include the interaction of year dummies and (i) income pc; (ii) population; (iii) unemployed; (iv) illiterates (v) agricultural share; (vi) industrial share; and (vii) construction share. Income pc is measured in 1974, whereas the rest variables are obtained from the census of 1971. Robust standard errors, clustered by prefecture, are reported in parentheses. *, **, *** denote statistical significance at the 10%, 5%, 1% level respectively.

Table B6. Political support and powerful MPs

Dependent variable:	(1) *powerful MPs*	(2) *ministers*	(3) *deputy ministers*
incumbent share	0.985**	-0.039	0.932
	(0.411)	(0.331)	(0.619)
Observations	780	780	780
R2	0.278	0.198	0.236
Prefecture FE	√	√	√
Year FE	√	√	√
Geographic controls	√	√	√
Additional controls	√	√	√

Notes: The variable powerful MPs equals to 1 when an appointed minister (or deputy minister) of the government has been elected in the prefecture, and 0 otherwise. The variable ministers (deputy ministers) equals to 1 when an appointed minister (deputy minister) of the government has been elected in the prefecture, and 0 otherwise. Incumbent share is the share of votes received by the incumbent party in the elections of 1974,1977, 1981 and 1985. Geographic controls include the interaction of year dummies and (i) area pc; (ii) altitude (iii) capital. Additional controls include the interaction of year dummies and (i) income pc; (ii) population; (iii) unemployed; (iv) illiterates (v) agricultural share; (vi) industrial share; and (vii) construction share. Income pc is measured in 1974, whereas the rest variables are obtained from the census of 1971. Robust standard errors, clustered by prefecture, are reported in parentheses. *, **, *** denote statistical significance at the 10%, 5%, 1% level respectively.