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# Distributive Politics and Regional Development: Assessing the Territorial Distribution of Turkey's Public Investment

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**ABSTRACT** *Turkey is often perceived as a country with low bureaucratic capacity and prone to political manipulation and 'pork-barrel'. This article tests whether this is the case, by analysing the extent to which politics, rather than equity and efficiency criteria, have determined the geographical allocation of public investment across the 81 provinces of Turkey between 2005 and 2012. The results show that although the Turkish government has indeed channelled public expenditures to reward its core constituencies, socioeconomic factors remained the most relevant predictors of investment. Moreover, in contrast to official regional development policy principles, we uncover the concentration of public investment in areas with comparatively higher levels of development. We interpret this as the state bureaucracy's intentional strategy of focussing on efficiency by concentrating resources on 'the better off among the most in need'.*

## 1. Introduction

One of the most important decisions that governments face, both in rich and in emerging countries, is how to geographically allocate the public resources necessary for development, given each country's budget constraints. In contrast to conventional regional development approaches, which have seen public interventions as purely driven by technical socioeconomic considerations, a body of theoretical contributions and empirical studies at the interface between economics and political science has explored in the last two decades how the spatial distribution of public resources and government programmes is driven not only by efficiency and equity, but also by electoral concerns. Advances in data availability in the last decades have allowed the extension of this line of research to a large number of countries (Golden & Min, 2013). While much of economic and regional development literature has tended to overlook issues related to electoral politics and its influence on policy-making, the literature on distributive politics has precisely put how electoral politics shapes the allocation of governmental goods at its heart.

This article tries to make sense of contradictory hypotheses that can be found in the literature on regional development policy and on distributive politics, using Turkey as a critical case study. It will do so by analysing the extent to which electoral factors prevail over technical considerations in the allocation of public investment. The case of Turkey is particularly interesting. As an emerging country with frequent episodes of poor governance, its conditions are ripe for pork-barrelling and patronage. At the same time, however, its long state and developmental traditions have led to the development of a comparatively capable and, to a certain extent, independent central bureaucracy. As early as 1963

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Turkey established an ad-hoc institution and a specific policy agenda aimed at curbing the high regional disparities which, however, still persist. In spite of a few earlier related pieces of work analysing different kinds of governmental goods (Aytaç, 2014; Kemahlioğlu, 2008; Tekeli & Kaplan, 2008), this study will be the first to explore the allocation of public investment executed by the central government in Turkey following the electoral victory of the Justice and Development Party (AKP) in 2002.

Empirically, the paper aims to answer to the following questions: (1) is the allocation of public investment determined primarily by political criteria? If so, which ones?; and, (2) in parallel we ask the extent to which the spatial allocation of central fixed capital investment also reflects functional economic criteria. Our estimation strategy is based on the adoption of both fixed-effects and generalised method of moments (GMM) (Arellano & Bover, 1995; Blundell & Bond, 1998) estimators in a dataset for Turkey's 81 provinces over the period between 2005 and 2012.

The literature has frequently stressed how Turkish politics has not revolved around the design of sound socio-economic policies, but has been fundamentally motivated by a desire by politicians to develop and sustain networks of clientelism and patronage (Heper & Keyman, 1998). Yet our results, which are robust against possible endogeneity, suggest a more nuanced picture. In line with the theoretical expectations for a polity with proportional, multi-member electoral districts, they show that while the government does indeed reward its core supporters with additional expenditure, socio-economic factors remain nonetheless stronger predictors of public investment. Moreover, in contrast to redistributive regional development policy principles, the Turkish state seems to favour areas with a higher level of development over those with the most critical 'socioeconomic need'. Hence, the state is consciously or unconsciously pursuing a strategy of fostering agglomeration in relatively better-off areas (Venables, 2010; World Bank, 2009), rather than channelling more resources towards the poorest areas.

The outline of the paper is as follows: Section 2 provides an overview of the literature on the political economy of regional development policies and sets the research hypotheses. Section 3 introduces Turkey's institutional background. Section 4 discusses the data, the empirical variables, and the estimation strategy. Section 5 explores the results. Section 6 draws the discussion to a conclusion.

## 2. Electoral Politics and the Territorial Distribution of Public Investments

### 2.1. The Political Economy of Regional Development Policies

The design of policies aimed at regional development has traditionally tended to focus on the trade-off between equity and efficiency. How a more effective economic policy to tackle regional inequalities should be designed remains hotly discussed (for example, Barca, 2009; OECD, 2009; World Bank, 2009). The debate has, however, not paid adequate attention to the impact of electoral politics on the design of public policy. A growing body of research linking economics and political science has explored how in the real world public grants and investment programmes are also distributed on the basis of 'purely political' considerations (Persson, 1998). A number of studies in political economy demonstrate that, in parallel to *grand/programmatic redistribution*, a second type of redistribution is constantly taking place. This form of 'politically-driven' *tactical redistribution* (Dixit & Londregan, 1996) is likely to be carried on even when the same general development policy framework remains constant. According to the public choice literature, the reason behind the influence of politics on policy-making is that politicians are instrumental in their behaviour (Dunleavy, 1991) and are likely to deliver more to those voters who can keep them in power. Electoral politics may thus topple economics when it comes to the territorial distribution of public funds.

Such a 'political market bias' may be defined as even more relevant in contexts where the legitimacy of the state, as well as a strong civil society and formal institutions, are not fully developed, such as in many developing economies (Richardson & Townroe, 1986). In such environments, lower levels of bureaucratic capacity and stronger informal consensus building practices (Özcan, 2000, 2006)

reduce the incentives/capacity to prevent the political use of public monies (Evans, 1995). It can therefore be expected that distributive politics may be more pervasive in emerging countries characterised by lower state capacity, rather than in strong states. In the case of Turkey, for example, it has been frequently stressed that the implementation of sound public policies by the state has been affected by both pervasive bureaucratic corruption, as well as by ubiquitous and inefficient networks of political clientelism and patronage (Danielson & Keleş, 1985; Heper & Keyman, 1998).

Overall, the specific geographical targeting of public resources as a means of political tactics has been reported by an increasing number of studies. Such literature has explored factors ranging from regional grants and federal spending (Alperovich, 1984; Case, 2001; Faguet, 2008; Grossman, 1994; Larcinese, Snyder, & Testa, 2012; Luo, Zhang, Huang, & Rozelle, 2010; Tekeli & Kaplan, 2008), trade and industrial policy (McGillivray, 2004), infrastructure investments (Cadot, Röller, & Stephan, 2006; Castells & Solé-Ollé, 2005; Crain & Oakley, 1995; Golden & Picci, 2008; Kemmerling & Stephan, 2008), investment incentives schemes (Kemahlioğlu, 2008; Yavan, 2012), and the EU Cohesion Policy (Bouvet & Dall’Erba, 2010; Crescenzi, 2009; Kemmerling & Bodestein, 2006).

At the same time, however, questions about the extent to which distributive politics prevail over technical policy-making criteria, are frequently left unanswered. As Golden and Min (2013, p. 14) argue: ‘indeed, it is perhaps surprising that any politician ever loses elected office given the impressive evidence that has been amassed showing the politicisation of the public purse’. Drawing from the literature this article puts forward a model of resource allocation to assess the extent to which the geographical distribution of public investments aimed at the economic development of Turkish provinces depends on electoral politics or on functional economic criteria. We model public investment as driven by:

$$I = f(\text{Electoral politics, functional economic factors}) \quad (1)$$

We thus assume that the Turkish government may allocate public investment driven by either ‘tactical political redistribution’ considerations or by functional socioeconomic criteria.

## 2.2. The Alternative Allocative Hypotheses

We divide each of the two main principles into specific operational criteria. Each is explored through a separate research hypothesis. Drawing from the literature, we identify three alternative distributive politics hypotheses, as well as two functional ones.

Within the literature on the links between politico-electoral systems and the geographical targeting of public resources, a ‘classic’ debate has flourished on whether distributive politics is carried out to cement existing or to buy new votes. According to the first explanation, the districts most likely to be favoured in the distribution of public resources will be the strongholds of the central governing party – at the expense of those supporting opposition parties – because risk-averse politicians will prefer strengthening their core electorates’ loyalties rather than embarking on politically-risky electoral investments (Cox & McCubbins, 1986). McGillivray (2004), in particular, has argued that the most relevant hypothesis behind distributive prediction will vary according to the political system. In line with her expectations for a country with a close-list, multi-member proportional representation electoral system, the first empirical hypothesis states:

*Hypothesis 1:* The higher the electoral support for the party in government in a Turkish province, the higher the public investment allocated to that province. Conversely, the higher the votes cast for opposition parties, the lower the amount of public investment.

By contrast, other scholars foresee models where utility-maximising politicians will first favour groups – or districts (Golden & Min, 2013) – with the highest potential electoral productivity gains (Dixit & Londregan, 1996), such as those most willing to switch their votes following economic favours. The second empirical hypothesis thus states:

*Hypothesis 2:* Investments are disproportionately allocated to electorally competitive districts, that is, those where the vote difference between the incumbent government's party and its challenger is lower.

Last but not least, a recent work by Aytaç (2014) has stressed how the debate between core- versus swing-voter-models is only appropriate for analysing two-party competition settings, but falls short of accounting for distributive politics dynamics in presence of multi-party competition. His argument is that, in a setting of multiparty competition, the incumbent party may have incentives to channel preferential resources to districts with both a high level of electoral competition and an ideologically close challenger, because in such places there may be more voters willing to switch their votes. As a consequence, the third empirical hypothesis states:

*Hypothesis 3:* Investments are disproportionately allocated to districts which are electorally competitive and where the main challenger is ideologically close to the incumbent party.

In contrast to the first three 'electorally-motivated' allocation criteria, functional principles would suggest that the allocation of developmental resources is driven by socioeconomic rationales. In particular, if the government is concerned with addressing regional economic imbalances, it should target investment spending towards poorer areas:

*Hypothesis 4:* the central government preferentially targets capital investments to regions where socioeconomic disadvantage is higher, that is, where developmental needs are most urgent.

Alternatively, and in line with the findings of the New Economic Geography (Ottaviano & Puga, 1998; Venables, 2010) – conveyed in the policy recommendations of the World Bank's World Development Report 2009 (World Bank, 2009) – emerging countries' governments may, under the constraint of scarce resources, prefer to aim for national efficiency by targeting core regions and large agglomerations first, on the ground that growth and spatial redistribution goals are often difficult to reconcile. This was the strategy officially pursued by the Turkish state during the first decades of the Republic (see next paragraphs). The last empirical hypothesis therefore states:

*Hypothesis 5:* Investments are allocated according to socioeconomic criteria. In contrast to what is stated in hypothesis 4, however, higher allocations are positively, rather than negatively, associated to higher levels of development.

### **3. Turkey and Its Institutional Background**

Turkey offers an interesting case for analysing the link between electoral politics and public expenditure for different reasons. First, it was an early mover among developing countries in being concerned and addressing territorial disparities. As early as 1963, the country established an ad-hoc institution and a specific policy agenda aimed at curbing the high regional inequality that, however, still persists. In spite of such a long history of regional development policies, interventions have recorded a limited effectiveness – a fact strongly stressed by the European Commission since the start of Turkey's EU-accession negotiations (Luca, 2011) and also acknowledged by the State bureaucracy (State Planning Organisation, 2003b).

Second, the strong dependence of the allocation of investment on central government allows identifying programmatic and tactical redistribution trends more easily than in countries where multiple institutional levels are important political arena and play a role in the spatial distribution of resources. The fact that investments are spent by local branches of the central state also reduces the

risk of omitted variable bias related to the different absorption capacity of regions in more decentralised systems.

Third, as Posner and Kramon (2011) empirically show, governments are likely to favour constituencies through targeting multiple goods at the same time. If such allocations are done to accommodate more than just one interest group, that is, if distributive patterns are not constant across types of goods, the results will likely become dependent on which good – among the range of pork types used by the government – researchers are focusing on. Research has already been conducted on the distribution of public incentives to foster private investments – one of the two main regional development policy tools adopted by the Turkish government – by Kemahlioğlu (2008) and Yavan (2012). To our best knowledge no research has yet concentrated on public fixed capital investments – the other key tool.

Last but not least, following Yeung (2001)'s call for social scientists to pay more attention to 'neglected regions' of the world, our analysis allows shedding more light on a country whose coverage in the international literature is rather low, in spite of its increasing role as a key Mediterranean and Eurasian power, as well as its status of EU-candidate country. Investigating the causes that limit Turkey's success in reducing regional economic disparities is also relevant in the context of EU accession negotiations. Considering the size of the country and its extremely high territorial disparities between its western and eastern regions, if ever accepted into the European Union, the country may become the biggest recipient of Structural Funds.

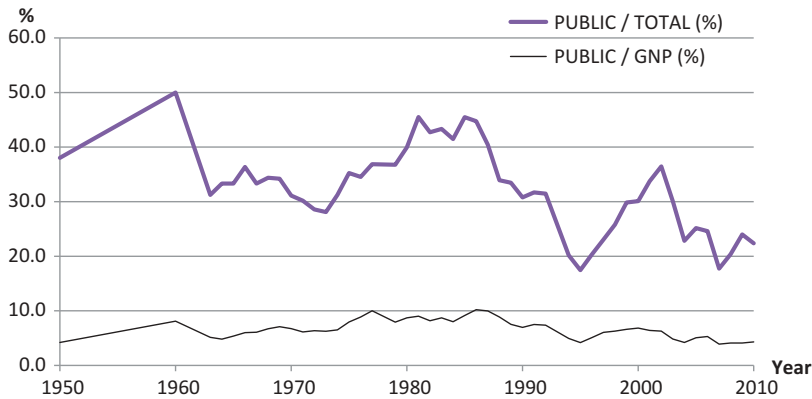
### 3.1. Regional Development Policies in Turkey

The specific balance between territorial equity and overall national efficiency that governments consider when implementing territorially-redistributive regional development policies differ from country to country, depending on societal values and on constitutional provisions (Solé Ollé, 2010). During the four first republican decades of the Turkish State (1923–1962), the official priority was the concentration of investments in major urban areas with the aim of fostering the overall national growth (Eraydın, 2000). The shift in attention to regional inequalities happened, however, relatively early. In 1963 the country set up an ad-hoc institution in charge of multi-annual planning – the State Planning Organisation (Devlet Planlama Teşkilatı, DPT), recently transformed into the Ministry of Development – with a specific agenda aimed at reducing regional disparities. Article 166 of the 1982 Constitution explicitly calls for public policies to tackle regional imbalances through a 'speedy, balanced, and harmonious development of industry and agriculture throughout the country'. The starting of the planning era was induced by the National Unity Committee following the 1960 military coup. As Özbudun and Ulasan (1980) stress, the military rulers were rather sympathetic to the concept of planning and the idea of an organism aimed not merely at the physical growth of the nation, but also at a peaceful transformation of the existing systems. Since then, the Ministry of Development (former DPT) has been in charge of preparing multiannual development plans highlighting the priorities and strategies of all ministries and other public agencies. The plans are then implemented through annual programmes detailing out the budgetary allocation of public investments. While the plans are prepared by a supposedly independent, technical bureaucracy, their final approval is the prerogative of decision-makers.

Since the 1980s, and particularly during the last decade, Turkey has also taken progressive steps towards an incipient decentralisation (Özcan & Turunç, 2008). However, the country still remains one of the most centralised public finance systems among OECD countries (Blöchliger & Rabesona, 2009).

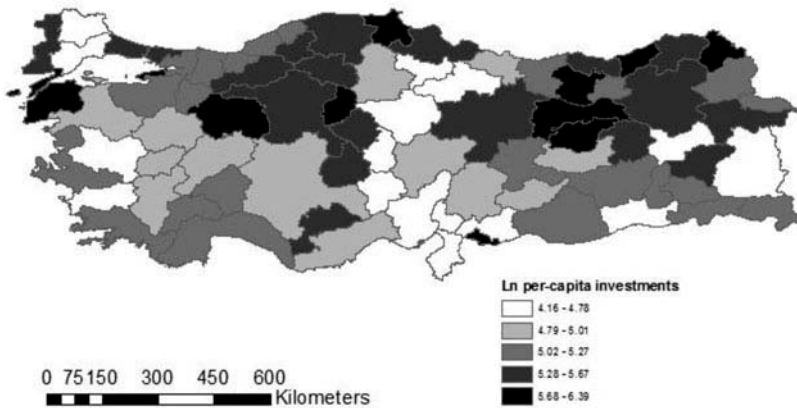
Figure 1 shows the share of public gross fixed capital investments in the Turkish economy. Despite a recent reduction, public investment still accounts for around 5 per cent of the total GNP. This is higher than other OECD countries such as Germany, Italy, Portugal, or the United Kingdom (Gönenç, Leibfritz, & Yılmaz, 2005).





**Figure 1.** Shares of public gross fixed investments on total gross fixed investments and on gross national product, 1950–2010.

*Source:* own elaboration on data from the Ministry of Development's database.



**Figure 2.** Geographical distribution of average fixed-capital public investments during 2004–2012.

*Source:* own elaboration on data from Ministry of Development database.

Figure 2 shows the distribution of the average amount of fixed-capital public investments during the period of analysis. The average mean across 2004–2012, expressed in logarithmic terms, is 5.19 Turkish Lira per capita, with a standard deviation across provinces of 0.41.

### 3.2. The Evolution of Regional Disparities

Despite the spread of wealth to some new regions during the last decades, particularly to areas neighbouring the traditional cores, Turkey continues to have a highly unequal spatial distribution of economic activities and, most importantly, of many social developmental indicators.<sup>1</sup> In 2003, for example, the GDP per capita in the richest NUTS II region (TR10, Istanbul) was 1.43 times the national average while in the poorest region (TRB2, Bitlis, Hakkari, Muş, Van) it represented only 0.35 times the national medium value (Turkstat, 2006). Moreover, the majority of recent studies – all analysing the period up to the early 2000s – do not find evidence of inter-regional convergence (Karaman & Doğruel, 2011), neither in terms of per-capita GPD (Gezici & Hewings, 2004, 2007), nor new firms creation (Gaygısız & Koksall, 2003), or unemployment rates (Filiztekin, 2009). Gezici and Hewings' (2007) results in particular indicate how a contrasting trend of reduction in intra-regional disparities has been accompanied by an increase in inter-regional ones.



**Figure 3.** Change in regional disparities: population-weighted coefficient of variation of NUTS 2 regions' per-capita gross value added.

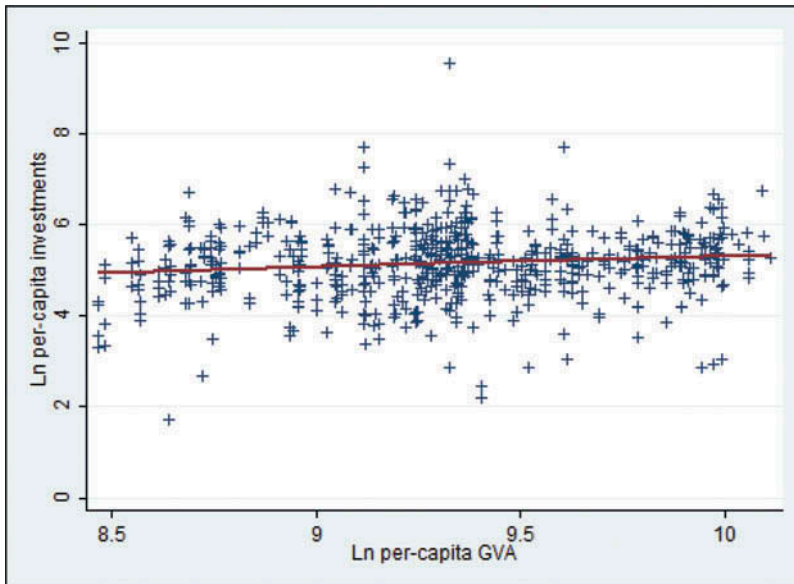
*Source:* own elaboration on data from OECD's regional database.

Figure 3 shows the population-weighted coefficient of variation for regional gross value added for recent years. It confirms the lack of clear reductions in inter-regional disparities among provinces.

Figure 4 shows the correlation between per capita fixed-capital investments annually allocated to each province between 2005 and 2012 and the levels of provincial per capital Gross Value Added (GVA. Annual values are pooled). While a correlation between economic outputs and the amount of investments allocated is visible, there is considerable variation above and below the fitted line. The empirical analysis will uncover which factors explain such variation. Figure 4 suggests that the allocation patterns of public investment may be more complex than those behind a simple regional redistributive framework.

### 3.3. Turkey's Institutional Background

Despite a history of more than 16 multiparty elections and parliamentary rules, Turkey has had a difficult time being accepted as a democratic regime by international political and academic circles



**Figure 4.** Scatter plot of per capita fixed-capital investments (Ln) and per capita gross value added (GVA, in Ln) between 2005 and 2012.

*Source:* Own elaboration.



(Sayari, 2002). Frequent military coups, internal armed conflicts and human rights abuses have traditionally tarnished its reputation. Nonetheless, Turkey has enjoyed relative political stability and democratic elections since 1983. In its current form, the Turkish Republic is a closed-list proportional-representation electoral system democracy, with the d'Hondt formula and a national threshold of 10 per cent used to translate votes into parliament seats. As such, electors vote only for a political party, with the party itself controlling which candidates are seated in parliament. Electoral districts coincide with provinces. In the 2011 national elections, the number of MPs elected from each province ranged between one (Bayburt) and 85 (Istanbul), with a mean value of 6.8.

In the 1980s and 1990s the Turkish political landscape was characterised by political fragmentation, extremely high electoral volatility (Hazama, 2003) and a party system 'in a state of flux' (Sayari, 2002, p. 17). The 2000s brought about a neater and more stable political panorama. The 2002 elections can be considered a real watershed in Turkish politics, marked by the rapid rise of a newly formed party (AKP), which has remained in power since.

Similarly to contemporaneous changes in many other countries, the last two decades also witnessed a decrease in the Turkish political polarisation based on left/right ideologies. Many analysts suggest an increase in the cleavages built around two main social dimensions: religiosity versus laicism and Turkish versus ethnic Kurdish nationalisms (Çarkoğlu & Hinich, 2006; Güneş-Ayata & Ayata, 2002; Öniş, 1997).<sup>2</sup> The first social fault line is likely to be captured by the contraposition between the pro-Islamic ruling party and the main, secular opposition one; the second, instead, will need to be controlled for in the empirical analysis.

## 4. Empirical Analysis

### 4.1. Empirical Model and Variables

In order to test our hypotheses, the overall per capita commitments to each province are regressed on their potential political and socioeconomic determinants. The analysis will focus on Turkish provinces (NUTS III level), because this is: a) the specific level coinciding with central electoral districts; b) the sub-national level at which investments allocations are recorded; and c) the most meaningful administrative partition between local municipalities and the central state.

Following the literature and the theoretical discussion of Section (2), the empirical model adopts the following form:

$$Y_{i,t} = \beta_1 P_{i,t-1} + \beta_2 X_{i,t-1} + \alpha_i + n_t + \varepsilon_{i,t} \quad (2)$$

where ( $i$  and  $t$  denote provinces and years respectively);  $Y_{i,t}$  is the total amount of per capita national fixed-capital investment allocated to each province;  $P_{i,t-1}$  and  $X_{i,t-1}$  represent vectors of electoral and socioeconomic factors respectively<sup>3</sup>;  $\alpha_i$  and  $n_t$  are respectively province and year fixed-effects, and  $\varepsilon_{i,t}$  is the error term.

The dependent and the explanatory variables, summarised in Online Appendix Table A1, are described in the following paragraphs.

### Dependent variable

*Per capita fixed public investments.* Total values to each province include investments in agriculture, manufacturing, transport, housing, education, health and other public services. Investments in mining and energy are not included on the basis that they are more likely to be allocated according to first nature geographical characteristics and to national priorities respectively. All the values are expressed in 1000 Turkish Lira (TL) at 2012 prices and in logarithmic terms in order to control for non-linear relations.<sup>4</sup>

*Political independent variables*

*Party vote shares.* Party percentage vote shares at national elections are the first, most immediate variables able to capture the political clout of provinces. By including both the incumbent party as well as the main opposition ones, we can also test whether funding allocations following electoral criteria mainly reward constituencies aligned with the incumbent governments and/or punish those voting for the opposition. We exclusively focus on the central political level, as the main regional development decisions are still strongly in the grip of Ankara's powers.

*Kurdish nationalism.* The variable is proxied by the share of votes cast for the pro-Kurdish party. While the literature based on European countries suggests that regions with strong separatist parties are likely to receive more resources (Kemmerling & Stephan, 2008), our expectation in the case of the Kurdish party<sup>5</sup> will be opposite (Danielson & Keleş, 1985), since constant armed tensions in Kurd-inhabited areas and armed conflict may have limited public investment (Yeğen, 1999).

*Electoral competition.* Such a variable is constructed as the negative of the absolute value of the vote difference between the incumbent party and its main challenger in each province. The challenger is the second party where the AKP has garnered the greatest number of votes or an opposition party, when this is not the case. As we take the negative of the absolute value, we will expect the variable to show a positive sign, meaning that provinces where the vote difference is lower receive comparatively more funds.

*Malapportionment.* This variable consists in the Ln of the ratio between the total provincial population (as a proxy for the number of voters) and the number of seats allocated in each constituency. It is an indicator of electoral productivity, measuring the profitability for politicians of 'investing' in a constituency, depending on how many votes are needed to win a seat.

*Close competitor.* Following Aytaç (2014), we first create a dummy equal to one for the provinces where the AKP competes with ideologically close parties. These include the MHP, as well as the True Path Party (*Doğru Yol Partisi*, DYP) and the Motherland Party (*Anavatan Partisi*, ANAP) in the 2002 elections. The variable is then constructed as the interaction of the dummy with electoral competition.

*Socioeconomic independent variables.* Due to changes in early 2000s in data collection by Turkstat, provincial data on GDP for the whole period of analysis does not exist. We then try to control for the contextual socioeconomic disadvantage through two alternative variables.

*Contextual development level.* The first variable is the Provincial Development Index (PDI), a composite indicator developed by the Ministry of Development through principal component analysis. It takes into account economic (statistics on manufacturing, constructions, agriculture, value added, investments and finance) and, to a lesser extent, social factors (demographic structure, employment, education, health and various developmental parameters). While we are aware that the index may not fully be a proxy for contextual wealth, there is no viable alternative to control for contextual development levels at provincial level.

*Wealth.* To check for the robustness of our results, we also include the annual growth rate of per-capita GVA. This variable is, however, only available for NUTS II regions and not for provinces.

Wealth variables measure potential *contextual disadvantage*, without either questioning the *structural reasons* behind poverty, or the possible ways to get away from it. We therefore also control for key growth-retarding/enhancing socio-demographic characteristics (Rodríguez-Pose, 1999), which may drive allocative choices, namely: sectorial economic structure, educational attainment, rural/urban imbalances, and total population.

*Manufacturing employment.* We concentrate on the share of employment in manufacturing on total employment because of the central role that industrialisation has played in the structural transformation of Turkey's economy in recent years.

*Education attainments.* We use the share of students in higher education (vocational training and university) of total population, as a proxy for the level of education in each province.

*Rural population.* In a country such as Turkey, characterised by late development and a rapid, recent urbanisation, the regional developmental inequalities are likely to be correlated with the urban/rural divide, which we proxy by the share of population living in rural areas.

*Population.* While the other socioeconomic regressors, as well as the dependent variable, are normalised by population of the province, population is included in the equation as it is considered as an important driver of investment allocations.

#### 4.2. Sample and Data

The analysis employs a panel data set covering 81 Turkish provinces over the period 2005–2012. Basic data on national public investments per province was derived from the Ministry of Development (former State Planning Organisation).

Electoral data for the 2002, 2007, and 2011 elections was gathered from the European Election Database, as well as from Turkey's Electoral High Committee. We annualised political variables by extending electoral results over each legislature. Electoral wards within metropolitan provinces are not taken into account and therefore national elections' data are collected for provinces, which constitute the power bases of political parties and one of the most important units of political representation (Güvenç & Kırmancı, 2009).

Population information was obtained merging 2005–2009 OECD figures with Turkstat regional database's 2007–2011 figures. Data on the Provincial Development Index comes from interpolating the values from the State Planning Organisation (1996, 2003a) and Baday-Yıldız, Sivri, and Berber (2010). Other socioeconomic data were obtained from Turkstat's regional database and interpolated in case of missing years.

A review of data sources as well as summary statistics for each variable are provided in Online Appendix Tables A1 and A2.

#### 4.3. Identification Strategies

Our research hypotheses aim to test to what extent, and through which channels, political factors can be treated as determinants of the allocation of investments. Our strategy to explore such questions requires the use of two different estimators, both of which exploit the panel data variation between the three different electoral contests. We first adopt a fixed-effects (FE) heteroscedasticity and autocorrelation robust estimator with province and annual time effects. Such an estimator has the advantage of controlling for all the possible omitted variables that are idiosyncratic to provinces. To control for potential serial and spatial correlation, we estimate robust standard errors adjusted for clustering at the provincial level (81 clusters). Considering that plans for time  $t$  are prepared in advance and then approved by fall/winter of time  $t-1$ , we include a one-year lag between right- and left-side variables, which will also help minimise the endogeneity between dependent and explanatory variables.

Although grounded in an ample body of works, our first estimation strategy may suffer from potential endogeneity caused by reverse causality, since higher/lower investments by the central government at election  $t$  may increase/decrease the votes given to the governing party at subsequent polls (Larcinese et al., 2012). To control for the robustness of FE results, our solution is to transform Equation (2) using first difference

$$\Delta Y_{i,t} = \Delta \beta_1 X_{i,t-1} + \Delta \beta_2 P_{i,t-1} + \alpha_i + n_t + \varepsilon_{i,t} \quad (3)$$

and then to use Arellano and Bover (1995) and Blundell and Bond (1998)'s GMM robust system estimator, which instruments differences – Equation (3) – with past levels, and levels – Equation (2) – with past differences. The adoption of GMM-system rather than GMM-difference (Arellano & Bond, 1991) is motivated by the latter's severe constraints in presence of time series persistence, since lagged variable levels are extremely weak instruments for subsequent first-differences (Bond, Hoeffler, & Temple, 2001). The issue of low within-unit variance is particularly relevant in the case of political, electoral and institutional factors, which are by nature rather persistent over time (Plumper & Troeger, 2007).<sup>6</sup> Robust, cluster and small options are adopted to obtain heteroscedasticity- and autocorrelation-robust standard errors as well as small-sample corrections to the covariance matrix estimate (Roodman, 2009b).

While system-GMM is an attractive technique to handle regressors' potential endogeneity, internal instrumenting is also known for suffering from a series of limitations, including the risks of accepting results that are invalid because of weak instruments (Roodman, 2009a). In order to minimise such risks, the analysis restricts the range of lags to two and five,<sup>7</sup> while also collapsing the instrument matrix as proposed by Roodman (2009b).

## 5. Results

### 5.1. Baseline Results

Table 1 presents the results obtained with the linear FE estimator. The first three columns show the estimates corresponding to the distributive politics hypotheses H.1, H.2 and H.3. The fourth column presents the results for hypotheses H.4 and H.5 (which refer to the same variables, but foresee opposite signs). The final column shows the full regression, which represents our preferred model.

Starting from the first research hypothesis – which argues that opportunistic distributive politics aims at cementing the electoral support of the incumbent party's core voters – the results in column one show clear and statistically significant evidence of a preferential allocation of public investment to provinces where votes for the AKP are higher. The finding is robust to the inclusion of socioeconomic controls (last column). By contrast, the coefficient indicating how provinces voting for the main opposition party – the CHP – receive fewer funds is only significant in the first model, but not robust to the inclusion of the other political variables and the socioeconomic controls.

The coefficient for the third party – the MHP – is not significant, suggesting that the main redistributive politics are played around the two main parties. This may be because the MHP has limited support and this support is concentrated in a limited number of provinces. The coefficient for the variable indicating support for the pro-Kurdish party is positive and insignificant when taken alone (first model), but turns statistically significant in the final model. Considering that Kurdish votes are highly concentrated in areas with a high degree of underdevelopment, we consider the second estimate – that is, where development differentials are controlled for – more precise. This result contradicts earlier research, which suggested that, during the 1980s and 1990s, mostly Kurdish-inhabited areas were significantly disadvantaged in the allocation of public investment.

Model two addresses the electoral competition hypothesis, according to which a disproportionate amount of resources will be allocated to provinces where the electoral race is tight. The variable shows the expected positive sign, yet is not significant across any of the specifications. Similarly, the result for malapportionment, despite having the expected negative sign, is not statistically significant after introducing the socioeconomic controls. The last distributive politics hypothesis is explored in model three. In contrast to Aytac's (2014) results for the allocation of conditional cash transfers to Turkey's low-income population, in our estimates the close competitor variable is insignificant and does not display the expected sign.

**Table 1.** FE estimation of the empirical model

	(H.1) core-voter	(H.2) electoral competition	(H.3) close competitor	(H.4/5) equity/ efficiency	Full model
AKP vote share	0.0216** (0.0100)				0.0126* (0.00675)
CHP vote share	-0.0374*** (0.0139)				-0.0107 (0.00711)
MHP vote share	0.0234 (0.0170)				0.0157 (0.0119)
Kurdish party vote share	0.0130 (0.0134)				0.0120* (0.00701)
Electoral competition		0.000940 (0.00366)	0.00142 (0.00349)		-0.00151 (0.00302)
Malapportionment		-3.377*** (0.885)	-3.363*** (0.883)		-0.00395 (0.234)
Close competitor			-0.00261 (0.00449)		-0.000404 (0.00434)
Development index				0.455** (0.188)	0.365* (0.187)
Per-capita GVA growth				2.073*** (0.778)	1.800** (0.838)
Manufacturing employment				0.00149 (0.0136)	0.00480 (0.0140)
Education attainment				-0.00887*** (0.000877)	-0.00839*** (0.000872)
Rural population				0.0747*** (0.0235)	0.0730*** (0.0228)
Total population				-3.36e-07 (2.05e-07)	-2.82e-07 (2.18e-07)
Constant	4.519*** (0.571)	44.07*** (10.24)	43.91*** (10.22)	2.120** (0.879)	1.578 (3.015)
Observations	567	567	567	567	567
R-squared	0.133	0.136	0.137	0.175	0.184
Number of id	81	81	81	81	81
Province FE	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes

*Notes:* The dependent variable is expressed in logarithms. All explanatory variables are lagged by one year. Robust, clustered standard errors in parentheses. \*\*\*p < 0.01, \*\*p < 0.05, \*p < 0.1.

Overall, our distributive politics estimates support McGillivray (2004)'s theoretical predictions that in a closed-list, proportional, multi-member electoral system distributive dynamics are mostly pursued with the aim of cementing the loyalty of core supporters, rather than to win swing constituencies or win over close competitors.

The last two hypotheses refer to functional economic criteria. As we stressed earlier, the reduction of regional developmental disparities has been one of Turkey's developmental policy principles since 1963. We have therefore argued in hypothesis H.4 that public investment may have been used as a tool to address territorial imbalances. The results show contrasting evidence. Out of the six indicators adopted to control for socioeconomic disadvantage, four are statistically significant, namely the composite indicator of contextual development, the per-capita regional GVA growth rate, the education attainments, and the rate of rural population. By contrast, the rate of manufacturing employment and the total population are insignificant. Within the four significant variables, the estimates seem to suggest that two contrasting trends are occurring. While the ratio of rural population is positively correlated to investments and the level of education negatively – thus confirming the progressive role

of the development policy – the provincial development index (PDI) is strongly and positively, rather than negatively, correlated to the amount of funding received by regions. Holding other variables constant, a one point increase in the index is correlated to an increase (column four) of nearly 40 per cent of per-capita investments. The result is robust against the inclusion of the electoral variables (column five). Such a fact, in particular, seems to support those who suggest that investments are indeed allocated according to socioeconomic criteria but, rather than with the aim of reducing regional disparities, with the objective of concentrating resources in already developed areas. In this respect, the results support the final hypothesis H.5, as well as the earlier findings by Danielson and Keleş (1985) and Gezici and Hewings (2004). An important difference from such earlier studies, however, exists: on the one hand, the progressive character of investments is blurred into a strategy based on privileging areas with a minimum level of development. On the other hand, however, the Ministry of Development also seems to be channelling investments towards areas with higher levels of socio-economic structural disadvantage, that is, characterised by a lower level of education and a higher degree of rural population. A one point increase in the percentage of rural population, for example, is correlated to an increase (column four and five) of more than 7 per cent in per-capita investments. Aggregate fiscal flows may hide heterogeneous policies, as policy-makers have a range of tools at their disposal and are likely to use them to achieve different goals at the same time. We can therefore expect to find different – even contradictory – drivers of aggregate public investment.<sup>8</sup> In the specific, Turkish case we believe that an explanation of the apparently contradictory results may lay in the role that Anatolian, middle cities have played in recent development trends. The results are coherent with the Growth Centres Strategy put in place in recent years (particularly in the 9<sup>th</sup> National Development Plan covering the period 2007–2013), according to which specific growth poles have to be selected for the concentration of public investments in underdeveloped areas. Economic development studies have frequently discussed whether there is a trade-off between reducing regional inequality and fostering overall efficiency (Hewings, 1978; Martin, 2008; Osberg, 1995). The ‘New Economic Geography’ strand has in particular provided evidence supporting the existence of such a trade-off by exploring the economic benefits originating from the concentration of activities and resources in areas with economies of agglomeration (Ottaviano & Puga, 1998; Venables, 2010). Drawing on such corpus of literature, the 2009 World Development Report (World Bank, 2009) made a strong case for the adoption of agglomeration-enhancing policies by emerging countries. Interestingly, our results for Turkey suggest a ‘middle-ground’ policy scenario, where the ‘standard’ regional development principle of reducing regional inequalities by targeting the worst-off regions is coupled with a strategy of concentration in areas with a minimum level of development. In other words, our results suggest that the government has favoured ‘the better off among the most in need’.

## 5.2. Robustness Checks

Testing for the robustness of the FE estimator’s results to possible endogeneity issues, GMM-system outputs are provided in Table 2. The specification tests on the validity of instruments are included in the lower section of the Table. As required, the AR serial correlation tests show that only first-order but not second-order serial correlation is detected. The Hansen J-test also confirms the appropriateness of the instruments, whose count does not overfit the models.

The political variables of hypothesis H.1, when analysed without controlling for developmental divides (that is taken alone, in column one), are only partly consistent with the FE estimates. Yet, once the socioeconomic variables are accounted for (column five), the GMM-system estimator provides results similar to those of Table 1. The coefficient for the governing party regains the expected sign and statistical significance, while also witnessing an increase in magnitude. The coefficient for the third party continues to be insignificant, while Kurdish nationalism turns again positive and significant. The coefficients for hypotheses H.2 and H.3 now show the expected sign across all specifications. Yet, electoral competition is insignificant both on its own (column two) and when introducing controls, while the close competitor variable is now significant when considered alone (column three), but not in the full model. Among the socioeconomic variables of hypotheses H.4 and H.5, the level of

**Table 2.** GMM-SYS estimation of the empirical model

	(H.1) core-voter	(H.2) electoral competition	(H.3) close competitor	(H.4/5) equity/ efficiency	Full model
AKP vote share	−0.00444 (0.0101)				0.0212** (0.00981)
CHP vote share	−0.0117 (0.0116)				−0.0110 (0.0111)
MHP vote share	−0.0412*** (0.0110)				−0.00795 (0.00974)
Kurdish party vote share	−0.0141* (0.00725)				0.0155** (0.00695)
Electoral competition		0.000407 (0.00443)	0.000780 (0.00433)		0.00784 (0.00473)
Malapportionment		−0.773*** (0.168)	−0.861*** (0.164)		−1.112*** (0.206)
Close competitor			0.00687* (0.00386)		0.00332 (0.00375)
Development index				0.435** (0.204)	0.409*** (0.141)
Per-capita GVA growth				−1.128 (1.283)	−1.055 (1.176)
Manufacturing employment				0.0284* (0.0154)	0.000194 (0.00711)
Education attainment				0.00409** (0.00168)	0.00378*** (0.00140)
Rural population				0.0593*** (0.0192)	0.0157 (0.0119)
Total population				[dropped]	[dropped]
Constant	5.429*** (0.596)	13.52*** (1.980)	14.59*** (1.931)	2.105** (0.894)	17.41*** (3.045)
Observations	567	567	567	567	567
Number of id	81	81	81	81	81
Province FE	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes
F-test	18.64 (0.000)	23.28 (0.000)	20.36 (0.000)	13.72 (0.000)	13.24 (0.000)
AR (1)	−5.37 (0.000)	−5.41 (0.000)	−5.44 (0.000)	−5.37 (0.000)	−5.41 (0.000)
AR (2)	−0.20 (0.843)	−0.03 (0.980)	−0.00 (0.997)	0.36 (0.717)	0.84 (0.399)
N. of instruments	28	14	19	36	67
Hansen	18.40 (0.301)	6.32 (0.177)	11.22 (0.189)	23.67 (0.481)	42.56 (0.694)

*Notes:* The dependent variable is expressed in logarithms. All explanatory variables are lagged by one year. Robust, clustered standard errors in parentheses, \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.1$ . Total population was automatically dropped because of multicollinearity

development and the ratio of rural population maintain the same signs of the FE estimator (although the latter turns insignificant after the inclusion of the electoral variables). Manufacturing employment now becomes significant in column four, but not in the full model. Interestingly, the annual growth rate of regional per-capita GVA is now strongly insignificant, while education attainments remain statistically significant but display a positive, rather than negative sign, providing further evidence in support of the efficiency hypothesis. Our preferred model is again that accounting for both electoral and socioeconomic variables. The full-model GMM results are broadly consistent with those of



Table 1, suggesting that the endogeneity of electoral results is not a serious issue in the first, linear estimates. Considering this, as well as the higher reliability of the FE estimator compared to GMM, our preferred results remain the FE ones.

In Section 5.1, we have interpreted the socioeconomic results as evidence supporting a state policy favouring efficiency. At the same time, however, the fact that investment tended to flow more towards areas with higher levels of development may hide a tendency by Turkey's socioeconomic elites to capture public investment. A second robustness test hence addresses the efficiency hypothesis H.5. We have strong reasons to expect that in Turkey elites largely tend to live in the main cities, mostly Istanbul, Ankara and, to a certain extent, also Izmir. The role of Istanbul as the economic hub of the country is well documented. Political power is concentrated in Ankara, the capital. An analytical way to disentangle the efficiency hypothesis from an 'elite capture story' is thus to run the whole model excluding the three main cities from the sample. The estimates of running this regression are presented in the second column of Online Appendix Table A4. They confirm the validity of the main results: the coefficients maintain the same signs and degree of statistical significance, while the overall fit of the models increases slightly.

Finally, we run a placebo regression where the one-year lag between dependent and explanatory variables is excluded. If our theoretical framework is correct, the electoral results should *only* influence *future* allocations – and not current ones – because of the time needed to translate strategic political decisions into allocation plans. The third column of Online Appendix Table A4 shows that, while socio-economic variables retain very similar coefficients and statistical significance – suggesting that socio-economic variables change slowly over time – political ones now turn insignificant altogether.

### 5.3. Discussion

According to the literature exploring the pervasiveness of Turkey's patronage politics and poor governance, we would have expected that the geographical allocation of public monies would have been prevalently determined by political machinations. Our results, however, show a more nuanced picture.

On the one hand, the analysis provides robust evidence in support of core-voter distributive politics patterns, confirming the literature's theoretical predictions. We uncover statistically significant evidence showing how provinces supporting the incumbent government have, *ceteris paribus*, received more per-capita public investment. In light of the political protests that sprung in Turkey since summer 2013, such outcomes confirm the picture of Turkey as a country with a socio-political fracture between pro-government supporters and anti-government, secular supporters. On the other hand, however, and in spite of their relevance as a driver of investments, political factors are less important than socio-economic criteria. So, how can this conundrum be explained?

The most straightforward answer is to interpret our results as a proof of the 'relative strength' of the Turkish state. Such explanation relates to the concept of *embedded autonomy* (Evans, 1995; Kohli, 2004), put forward to explain the factors that account for successful state intervention in promoting economic development. Evans (1995), in particular, argues that the developmental state's effectiveness rests upon two key factors: first, the extent to which a competent bureaucracy, autonomous from powerful rent-seeking groups, exists; and, second, the embeddedness of the state in society. Compared to other emerging countries, Turkey has indeed a long and established tradition of comparatively strong (and centralised) bureaucracy. Such discourse may be particularly relevant for planning which, since the creation of the State Planning Organisation (currently Ministry of Development), has been staffed by a trained and competent state bureaucratic elite. Besides, following the economic crisis of 2001 and the start of the Accession Negotiations to the EU, Turkey has undergone a series of public reforms inspired by good governance principles (Özdemir Tsarouhas, 2013), which may have increased its bureaucratic capacity. At the same time, the extent to which Turkey's state is effectively characterised by embedded autonomy is a topic on which the academic debate has not reached a conclusion. Given our findings, the question remains open to further explorations.

Two analytical caveats need, nevertheless, to be considered. First, while partisanship is likely to capture a relevant political fault line, there may be other dimensions as relevant as partisan articulations. In spite of the literature showing the key role played by political parties in Turkey (De Leon,

Desai, & Tuğal, 2009), other forms of non-electoral political competition may be shaping the geographical distribution of public investment. Buğra and Savaşkan (2014) have, for example, pointed to the role played by business associations in influencing state-economy relations. Although they acknowledge how the impact of parties and business organisations on Turkey's contemporary economic environment is closely knitted, further quantitative research on business organisations would ideally complement our analysis on partisanship. Furthermore, research has shown how, particularly in emerging countries, preferences in the allocation of public monies may be related to ethnicity or religious allegiance rather than to organised interests (for example, Banerjee & Somanathan, 2007). While the partisan fault line between the AKP and the main secular opposition party is likely to run parallel to other societal divisions – and hence should also capture non-partisan interests based, for example, on religiosity – lack of quantitative data does not allow us to fully explore and rule out alternative dimensions of political competition. Second, economic and political studies conducted at electoral levels – such as this article – are naturally badly equipped with tools to offer answers to the question of *who*, within a given district, is able to extract rents out of public projects and goods, even when these are allocated to areas most in need of them. Consequently, political manipulations may occur not in the allocation of investments across provinces (pork-barrelling) but at much smaller scale, such as in the local management of resources and in micro-level clientelistic networks. The cases of local economic development initiatives studied by Özcan (2006) in the new industrial Anatolian town of Kayseri provides evidence in this direction – a process difficult to be captured unless adopting a qualitative, in-depth approach.

## 6. Conclusions

This article has provided new evidence on Turkey's political economy of development by examining whether in the last decade the geographical allocation of public investment has followed the socio-economic policy principles officially set out by the state, or electoral political criteria.

In line with much of the literature on distributive politics, our results show that politics plays a non-negligible role in influencing public investment allocations. The governing AK Party has not been immune to the temptation of favouring regions that voted for it with additional investments. Nonetheless, the magnitude of pork-barrel is relatively low in comparison to the role played by socio-economic factors. Indeed, after controlling for electoral politics variables, socioeconomic measures remain the most relevant predictors of public investment. In spite of the earlier evidence showing high levels of widespread political patronage and clientelism (Heper & Keyman, 1998), and idiosyncratically controlled group loyalties (Özcan, 2006) occurring in Turkey, our findings point to Turkey's bureaucratic capacity and *embedded autonomy* (Evans, 1995). Our results may hence suggest that Turkey's state tradition has stopped electoral politics from completely dominating over technical policy criteria. Compared to other emerging countries, Turkey possesses a long tradition of bureaucratic elite 'who acted in the name of the state by assuming virtually complete autonomy from other groups in the polity, including the political elite' (Heper & Keyman, 1998, p. 259). Our results may thus confirm the comparative strength of the country's centralised and bureaucratic state apparatus, as well as the effectiveness of the public governance reforms implemented in the early 2000s (Özdemir Tsarouhas, 2013).

The results also unveil – somewhat unexpectedly for a country which has placed great emphasis in addressing territorial disparities – a state which tends to favour areas with a higher level of development over the ones with the most critical socioeconomic need. This aim clashes with the developmental policy principles set out in the Constitution and in the main planning documents about reducing regional imbalances. This finding is relevant for regional development policy-makers and planners in that it shows how, in presence of scarce resources and a severe developmental gap between rich and poor areas of the country, the state has privileged the concentration of public resources in areas with a minimum level of development, possibly with the goal of privileging efficiency over redistribution.

Finally, although our results provide considerable food for thought, a methodological caveat has to be taken into consideration. Following the literature showing the importance of parties in shaping

Turkey's political arena (De Leon et al., 2009), our analysis has focused on electoral political cleavages. Yet, there may be other forms of non-electoral political competition affecting the territorial distribution of public investment that the analysis is unable to capture. Buğra and Savaşkan (2014) have, for example, pointed to the role played by business associations in influencing state-economy relations. While the partisan fault line between the AKP and the main secular opposition party is likely to run parallel to other societal divisions – and hence capture certain forms of non-partisan interests – lack of data limits our capacity to fully rule out alternative hypotheses. Moreover, quantitative analyses as those performed in the current article, while having important advantages, are ill-equipped to explore the informal channels which may be at the heart of the patronage and clientelistic networks behind pork-barrel decisions – a topic which opens up further room for research, based on the use of quantitative *as well as qualitative* analysis.

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## Disclosure statement

No potential conflict of interest was reported by the authors.

## Notes

1. In 2010, the country's Human Development Index was ranked 83<sup>rd</sup> in the world, behind any other EU, Eastern European and Balkan country. In the same year, Turkey's Gender Gap Index ranked 126<sup>th</sup>, well behind several Asian, African and Arab states (Bardak & Majcher-Teleon, 2011). All these low rankings closely reflect the spatially uneven human and economic development in the country, with all five poorest NUTS II regions located in the east and the southeast of the country, that is, the area with the highest concentration of ethnic Kurdish people.
2. Kurds make up Turkey's most populous minority. Depending on different estimates, they constitute between 12 and 20 per cent of the population (Güneş-Ayata & Ayata, 2002; Mutlu, 1996). Exact counts are not available since 1965.
3. Investment projects are very likely to stretch over many years so allocations as well, may be correlated over time. While this fact may support the inclusion of the dependent variable's lagged value  $Y_{i,t-1}$  among the regressors, we reject such choice because of the bias that affects FE estimators of dynamic models in the order of  $1/T$ , that is a level too high for our short time span. Tests available on request confirm that the inclusion of lagged investments into regressions do not alter the results.
4. A significant proportion of investments are registered as part of multi-provincial projects, so it is not possible to match it with any specific province. Over 2005–2012, multi-provincial projects accounted on average for 45.67 per cent of the total public investment portfolio, with an annual standard deviation from the period's overall mean of 5.10. Typical multi-provincial projects are the construction of roads linking more than one province, the setting up of network of laboratories, or the national wholesale purchase of equipment and machineries. Our analysis only concentrates on the investments that can be attributed to a single province. Data limitation is – alas – one of the biggest problems in empirical research, particularly in emerging countries. Aware that the data may potentially be imprecise and in absence of any other viable solution, we follow the same approach as earlier researchers who have worked on public investments in Turkey (Celebioğlu & Dall'erna, 2010; Deliktaş, Önder, & Karadağ, 2008; Karadağ, Deliktaş, & Önder, 2004).
5. Under the allegation of supporting the Kurdistan Workers' Party (PKK), the main Kurdish parties have been repeatedly banned over the years. We therefore consider, at each election, the party in place at that moment. Since running as independent candidates and then agglomerating into a single group after elections has been a strategy to circumvent the seat allocation minimum national thresholds, we jointly consider Kurdish and independent votes.
6. We also considered the use of a Fixed-Effect Vector Decomposition estimator (Plumper & Troeger, 2007), eventually discarded for the inconsistency risks underlined by Breusch, Ward, Nguyen, and Kompas (2011).
7. As a further check, we have also tried different instrument solutions, such as adopting lags two to six, lags to two to four or only lags two and three. In spite of such changes, both estimates and significance levels were overall constant.
8. We thank one of the anonymous referees for pointing out this possibility.

## Appendices

**Table A1.** Description of variables and sources of data

Variable	Variable description	Source
Dependent variable: fixed capital public investment	Ln of the per-capita fixed capital investment annually allocated to each province	Ministry of Development (former State Planning Organisation)
AKP vote share	% of votes for the AKP	Turkey's electoral High Committee, European Election Database
CHP vote share	% of votes for the CHP	Turkey's electoral High Committee, European Election Database
MHP vote share	% of votes for the MHP	Turkey's electoral High Committee, European Election Database
Kurdish party vote share	% of votes for the Kurdish party and for independent candidates	Turkey's electoral High Committee, European Election Database
Electoral competition	Negative absolute value of the vote difference between the incumbent party and its main challenger in each province	Own calculation on data from the Turkey's electoral High Committee, European Election Database
Malapportionment	Ln of the ratio between the province's total population and the number of parliamentary seats allocated to it.	Own calculation
Close competitor	Interaction between electoral competition and a dummy variable equal to 1 when the AKP's main competitor is the MHP, and the DYP and ANAP (in the case of 2002 elections)	Own calculation
Development index	Provincial Development Index	Own calculation from: State Planning Organisation (1996, 2003a), Baday-Yildiz, Sivri and Berber (2010)
Per-capita GVA growth	Annual growth rate of NUTS II regional per-capita gross value added	Own calculation on data from the Turkstat Regional Database
Manufacturing employment	% employment in manufacturing	Turkstat Regional Database
Education attainments	% high education (vocational training and university) students on the total population	Turkstat Regional Database
Rural population	% of rural population	Turkstat Regional Database
Total population	Total number of inhabitants per province	OECD, Turkstat Regional Database

**Table A2.** Summary statistics

Variable	Mean	St. Dev.	Minimum	Maximum
Log Investment	5.257	0.728	1.728	9.542
AKP vote share	45.037	14.811	6.5	84.82
CHP vote share	18.541	9.506	2.01	52.5
MHP vote share	12.759	7.129	0	44.9
Kurdish party vote share	9.345	16.417	0	70.8
Electoral competition	-26.18	15.363	-70.4	-0.1
Malapportionment	11.582	0.287	10.524	12.151
Close competitor	-8.804	15.969	-56.6	0
Development index	-0.001	0.987	-1.659	4.138
Per-capita GVA growth	0.359	0.456	-0.097	0.164
Manufacturing employment	20.963	9.444	4.7	46.3
Education attainments	4.557	19.931	0.039	254.955
Rural population	37.849	13.5677	1.01	70.084
Total population	898500.2	1538670	65126	1.40e+07

**Table A3.** Pairwise correlations among variables

	Invest.	AKP votes	CHP votes	MHP votes	Kurdish votes	El. comp.	Malapport.	Close compet.	Dev. index	GVA growth	Manuf. Empl.	Ed. attainments	Rural pop.	Total pop.
Investments	1													
AKP votes	0.1562*	1												
CHP votes	0.0424	-0.3043*	1											
MHP votes	0.0068	0.0719	0.1888*	1										
Kurdish votes	0.0002	-0.3959*	-0.3106*	-0.5377*	1									
El. Comp.	-0.1190*	-0.6412*	0.4297*	0.1167*	0.0645	1								
Malapport.	-0.2540*	0.0015	0.2536*	-0.0878*	-0.0416	0.1657*	1							
Close comp.	-0.0013	-0.3673*	0.3808*	-0.2492*	0.2398*	0.4149*	0.1922*	1						
Dev. Index	-0.001	-0.0733	0.4839*	0.2723*	-0.5231*	0.2206*	0.4123*	0.0944*	1					
GVA	0.0179	-0.0781*	-0.0828*	-0.1897*	0.1037*	-0.0005	0.0028	0.009	-0.1093	1				
growth														
Manuf.	-0.0373	-0.0049	0.3014*	0.0721	-0.3048*	0.05	0.3874*	-0.0074	0.5961*	-0.0441	1			
Empl.														
Ed. Attain.	0.1145*	0.0008	0.1220*	0.0508	-0.0950*	0.0676	0.0527	0.0384	0.1593*	-0.0384	0.2646*	1		
Rural pop.	-0.0115	-0.0872*	-0.1678*	-0.1135*	0.1664*	0.0197	0.4303*	-0.1006*	-0.6677*	0.0465	-0.5568	-0.2162*	1	
Total pop.	-0.0328	-0.02	0.2055*	-0.0586	-0.0631	0.1271*	0.4706*	0.1303*	0.6551*	-0.0396	0.3203*	-0.0142	-0.5255*	1

**Table A4.** Robustness tests: FE estimation of the empirical model

VARIABLES	(1)	(2)	(3)
	Baseline estimate from Table 1	Excluding Istanbul, Ankara and Izmir	Placebo
AKP vote share	0.0126* (0.00675)	0.0124* (0.00682)	0.00105 (0.00699)
CHP vote share	-0.0107 (0.00711)	-0.0120* (0.00693)	-0.00274 (0.00708)
MHP vote share	0.0157 (0.0119)	0.0162 (0.0118)	0.0115 (0.0111)
Kurdish party vote share	0.0120* (0.00701)	0.0116 (0.00703)	0.00510 (0.00629)
Electoral competition	-0.00151 (0.00302)	-0.00173 (0.00296)	-0.00318 (0.00291)
Malapportionment	-0.00395 (0.234)	-0.0703 (0.229)	-0.0314 (0.265)
Close competitor	-0.000404 (0.00434)	-0.000184 (0.00428)	-0.000867 (0.00371)
Development index	0.365* (0.187)	0.370** (0.184)	0.316** (0.128)
Per-capita GVA growth	1.800** (0.838)	1.780** (0.843)	0.898 (0.849)
Manufacturing empl.	0.00480 (0.0140)	0.00862 (0.0139)	0.0347** (0.0142)
Education attainment	-0.00839*** (0.000872)	-0.00848*** (0.000915)	-0.00583*** (0.000744)
Rural population	0.0730*** (0.0228)	0.0753*** (0.0228)	0.0940*** (0.0346)
Total population	-2.82e-07 (2.18e-07)	4.46e-07 (6.36e-07)	-3.19e-07* (1.80e-07)
Constant	1.578 (3.015)	1.573 (3.180)	0.896 (3.792)
Observations	567	546	567
R-squared	0.184	0.195	0.159
Number of id	81	78	81
Prov FE	yes	yes	yes
Year FE	yes	yes	yes

Notes: The dependent variable is expressed in logarithms. All explanatory variables are lagged by one year *only* in models (1) and (2), while they are not in model (3). Robust standard errors in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

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