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Electoral politics and regional development: assessing the geographical allocation of public investment in Turkey

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Abstract

One of the most important decisions that governments face is how to allocate the public resources necessary for development, given each country's budget constraints. According to the literature on the links between wealth and institutional performance, highly kleptocratic countries are expected to show higher levels of politicisation of the public purse. The article tests the extent to which socioeconomic criteria (equity and efficiency) or electoral concerns determined the geographical distribution of public investment in the 81 provinces of Turkey between 2004 and 2012. Our results show that, although electoral concerns mattered for the allocation, socioeconomic measures remained the most relevant predictors of investment. Moreover, in contrast to official regional development policy principles, the Turkish state tended to favour areas with a higher level of development over those with greater 'socioeconomic need'. Our results therefore challenge much of the distributive politics literature, which has overly emphasised the role of pork-barrel in public policy-making. At the same time, they underline the need of paying more attention to the political economy of regional development strategies.

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 and Min, 2013). Such a steep increase in the interest about how politics affects the territorial allocation of public funds is generally referred to as *distributive politics* (Persson and Tabellini, 2000; Golden and Min, 2013). Results frequently suggest that public investments, as well as other policy tools aimed at regional development, such as geographically targeted grants and investment incentives, have had a whiff of pork-barrel around them (Milligan and Smart, 2005). According to the literature on the links between wealth and institutional performance, highly kleptocratic countries are expected to show higher levels of politicisation of the public purse.

While much of economic and regional development literature has tended to overlook issues related to electoral politics and its influence on policy-making, the majority of the political economy literature has precisely put how electoral politics shapes the distribution of public investments at its heart.

This article complements both the literature on regional development policy – which has largely overlooked the impact of electoral politics behind decisions about the allocation of government goods and services –, as well as the distributive politics literature – which has over-emphasised the marring of public policy by electoral interests. It will do so by analysing the extent to which electoral factors prevail over technical considerations in the allocation of public investments in a country traditionally considered as highly kleptocratic – and, therefore, more likely to be prone to political manipulations.

We test our hypothesis in Turkey, a country which as early as 1963 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 the distribution of grants to municipalities for 1997 (Tekeli and Kaplan, 2008) and of investment incentives for the period 2001-2008 (Yavan, 2012), this study will be the first to explore the allocation of public investments executed by the central government in Turkey following the electoral victory of the Justice and Development Party (AKP) in 2002. Empirically, the goals of this paper are:

1) To measure the extent to which the spatial allocation of central fixed capital investments in Turkey reflects socioeconomic criteria and regional developmental 'need' (*policy responsiveness*);

2) To assess the extent to which politics may be a factor in generating a disconnect between allocations and 'need' (*electoral distributive politics*). The fact that investments should be guided, according to Development Plans' official rationales, by economic principles allows us to determine a general allocative baseline from which to measure the extent of political distortions;

Our estimation strategy is based on the adoption of both fixed-effects and generalized method of moments (GMM) (Arellano and Bover, 1995; Blundell and Bond, 1998) in a dataset for Turkey's 81 provinces over 2004-2012.

Turkey has traditionally been regarded in scholarly literature as a kleptocratic country where 'politics has not revolved essentially around the pros and cons of socio-economic policies [… but has been deeply] motivated by a desire to garner votes' (Heper and Keyman, 2006, p. 259). Yet, our results, which are robust against possible endogeneity, suggest a diverging picture. They show that, although electoral concerns do matter for the allocation of development funds, socioeconomic measures remain very strong predictors of public investment. Moreover, in contrast to official 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'.

The outline of the paper is as follows: section two provides an overview of the literature on the political economy of regional development policies and sets the research hypotheses.

Section three introduces Turkey's institutional background. Section four discusses the data, the empirical variables, and the estimation strategy. Section five explores the results. Section six 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 (e.g.: 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 and Londregan, 1996) is likely to be carried on even when the same general development policy framework remains constant. Under this perspective, equity and efficiency – the two key drivers which, independently from the existence or not of a trade-off between reducing regional disparities and stimulating the overall national growth, motivate the first form of redistribution – are germane only if understood as tools for increasing the probability of re-election of those in public office. Following earlier research (Dewar, 1998; Crescenzi, 2009), we therefore posit that the understanding of regional development policies should emerge from the analysis of both the economics and the political economy of such programmes.

According to the public choice literature, the reason behind the influence of politics on policy-making is that, even within democratic institutions, politicians may act as self-interested actors. They are instrumental in their behaviour (Dunleavy, 1991) and are likely to deliver more to those voters who can keep them in power. Electoral politics made 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 developing economies (Richardson and Townroe, 1986) and in all contexts where the legitimacy of the state, as well as a strong civil society and formal institutions, are not fully developed. In such environments, there is greater room for stronger informal consensus building practices (Özcan, 2000, 2006). It is commonly accepted that wealth is negatively associated with corruption and institutional performances. It can therefore be expected that corrupt distributive politics and patronage will be more pervasive in emerging countries rather than in rich economies. In the case of Turkey, for example, it has been long stressed that a high level of politicisation of the public purse has been used as a tool to retain power (Danielson and Keleș, 1985; Heper and Keyman, 2006).

2.2. Exploring models of distributive politics and their pitfalls

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 or to buy 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 in politically-risky electoral investments (Cox and McCubbins, 1986). By contrast, other scholars foresee models where utility-maximising politicians will first favour groups – or districts (Golden and Min, 2013) – with the highest electoral productivity, i.e. those most willing to switch their votes following economic favours (Dixit and Londregan (1996). Recently, Díaz-Cayeros et al. (2012) have argued that in the emerging and developing world core voters models are more likely to be appropriate. Their reasoning is motivated by acknowledging how party loyalty is not something given, but endogenous to the distributive politics dynamics. Emerging country politicians will be more prone to invest in core voters because voters' loyalty at the ballot box is assumed to be conditional and strongly determined upon material inducement. From this perspective, voters become loyal to the party not only because of the benefits received today, but also because of those they expect to receive in the future. Hence, although partisanship can still be based on a moral sense of obligation as foreseen in earlier literature, in such approach party loyalties are basically *conditional* (Díaz-Cayeros et al., 2012).

The specific geographical targeting of public resources as a means of political tactics and/or as an answer to pressures by special interest groups has been reported by an increasing number of studies. Overall, the literature on distributive politics has amassed a record of evidence and systematic data showing how the political actors use their control over public goods to reinforce their electoral advantage. Such literature has explored factors ranging from regional grants and federal spending (Alperovich, 1984; Grossman, 1994; Case, 2001; Tekeli and Kaplan, 2008; Larcinese et al., 2012;), trade and industrial policy (McGillivray, 2004), infrastructure investments (Crain and Oakley, 1995; Castells and Solé-Ollé, 2005; Milligan and Smart, 2005; Cadot et al., 2006; Golden and Picci, 2008; Kemmerling and Stephan, 2008), investment incentives schemes (Yavan, 2012), to EU cohesion policy (Kemmerling and Bodestein, 2006; Crescenzi, 2009; Bouvet and Dall'erba, 2010). Much of this political economy literature has overemphasised the impact of politics on policy-making. 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 politicization of the public purse".

2.3. Research question and hypotheses

Drawing from the above discussed literature and, specifically, on Golden and Picci (2008), this article puts forward a model of resource allocation to assess the extent to which the allocation of public investments aimed at the economic development of Turkish provinces depends on economic or electoral politics criteria. The model includes socioeconomic disadvantage and electoral politics as key allocation criteria. We model public investment as driven by:

$I = f$ *(Socioeconomic factors, electoral politics)* *(1)*

We assume that the Turkish government may be driven by either conventional socioeconomic considerations, or by 'tactical political redistribution' considerations, in the territorial allocation of public funding. We model two opposing hypotheses

Hypothesis 1: according to redistribution and equity criteria, the central government should first target capital investments to regions where disadvantage is higher, i.e. where developmental needs are most urgent.

Standard approaches to regional development policies have been concentrated on income differentials, defending such choice by arguing that wealth measures such as GDP per-capita are a good, comprehensive indicator of poverty and deprivation. However, there seems to be a marked, increasing concern about the distance between standard economic measures such as GPD and broader measures of societal well-being (Stiglitz et al., 2010). Wealth variables, in fact, measure the absence of resources at a particular moment without neither questioning the reasons behind poverty, nor the possible ways to get away from it. In line with such views, numerous contributions have proposed an approach more attentive to socio-structural conditions (Perrons, 2011) and the idea that regional development policies should tackle not only the levels of disparities expressed in GPD per-capita – i.e. the *contextual indicators of disadvantage* – but also the *structural* socioeconomic long-term causes which prevent individuals from overcoming such inequalities. Our focus will be precisely on the overall level of socioeconomic development, as well as on drivers of structural disadvantage such as growth-retarding socio-demographic characteristics (Rodríguez-Pose, 1999), namely: labour force structure, educational attainment, and health conditions.

Alternatively, and in line with 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 since growth and spatial distribution 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). According to some scholars, however, the start of regional development interventions did not alter substantially such logic (Danielson and Keleş, 1985; Gezici and Hewings, 2004). The first alternative hypothesis therefore states

Hypothesis 1.A: investments are allocated according to socioeconomic factors. The sign of the relationship, however, may be opposite to that expected from hypothesis 1, i.e. higher levels of development being positively, rather than negatively, correlated to investments.

The second sub-research hypothesis, by contrast, is aimed at assessing the impact of politics on the territorial distribution

Hypothesis 2: Electoral politics considerations prevail over socioeconomic criteria in the allocation of investments.

Such hypothesis follows the distributive politics literature, which has extensively shown how politicians use the distribution of public monies to increase their re-election probabilities.

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 which, 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 (Devlet Planma Teskilati, 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. One of the biggest concerns of the literature on distributive politics is the possible endogeneity of electoral results to the distribution of government goods (Larcinese et al., 2012, p. 3). The neat political change occurred in Turkish politics in 2002 with the election of Erdogan's newly formed AKP, offers an exogenous shock which helps minimise endogeneity in the identification strategy.

Third, as Posner and Kramon (2011) empirically show, governments are likely to favour constituencies via targeting multiple goods at the same time. If such allocations are done to accommodate more than just one interest group, i.e. 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. Preliminary 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 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 the political economy of 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 (Eraydin, 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 Planma 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 via 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 Ozbudun and Ulusan (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 – whose length was recently extended from 5 to 7 years – 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 (Dulupcu, 2005; Özcan and Turunç, 2008). However, the country still remains one of the most centralised public finance systems among OECD countries (Blöchliger and Rabesona, 2009).

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

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 % of the total GNP. This is higher than other OECD countries such as Germany, Italy, Portugal, or the United Kingdom (Gönenç et al., 2005).

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.

Figure 2. Geographical distribution of average fixed-capital public investments during 2004-2012.
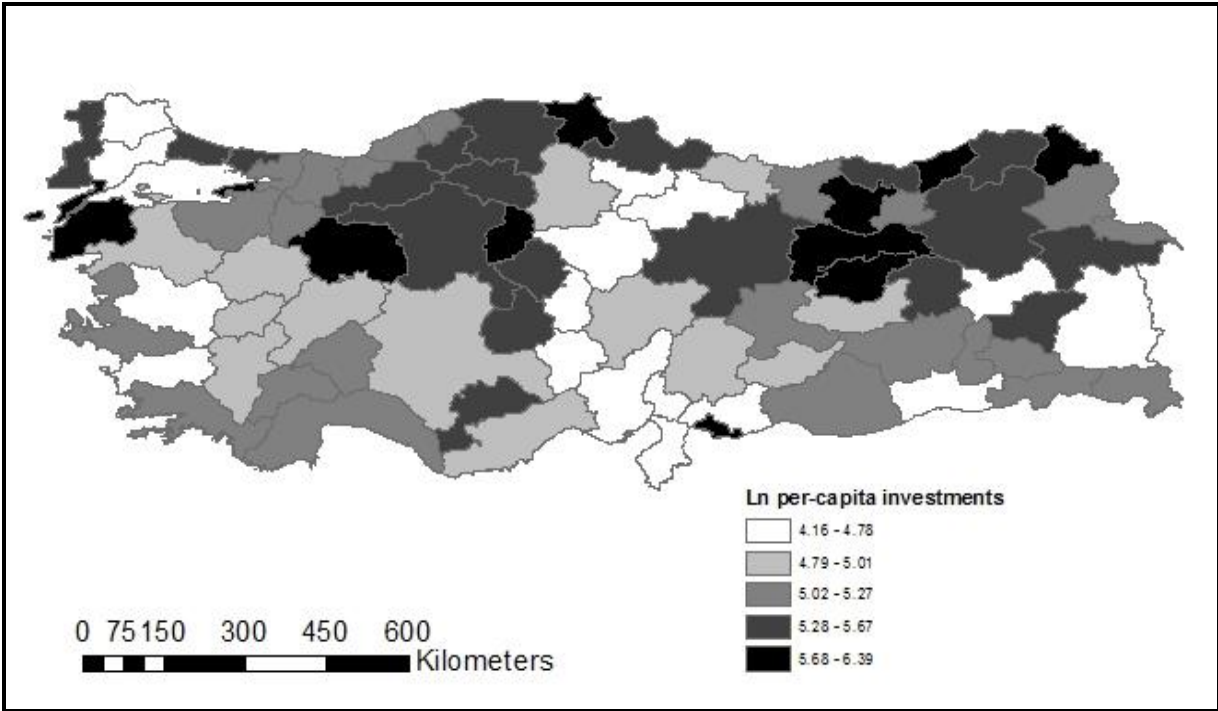
Source: own elaboration on data from the Ministry of Development's database

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.[1] 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 and Dogruel, 2011), neither in terms of per-capita GPD (Gezici and Hewings 2004, 2007), nor new firms creation

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[1] In 2010, the country's Human Development Index was ranked 83rd in the world, behind any other EU, Eastern European and Balkan country. In the same year Turkey's Gender Gap Index ranked 126th, well behind several Asian, African and Arab states (Bardak and Majcher-Teleon, 2011). All these low rankings closely reflect the spatially uneven human and economic development in the country, with all the five poorest NUTS II

(Gaygısız and Koksal, 2003), or unemployment rates (Filiztekin, 2009). Gezici and Hewings (2007)'s 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. Scatter plot of per capita fixed-capital investments (Ln) and per capita GVA (Ln) between 2004 and 2012.

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regions located in the East and the South-East of the country, i.e. the area with the highest concentration of ethnic Kurdish people.
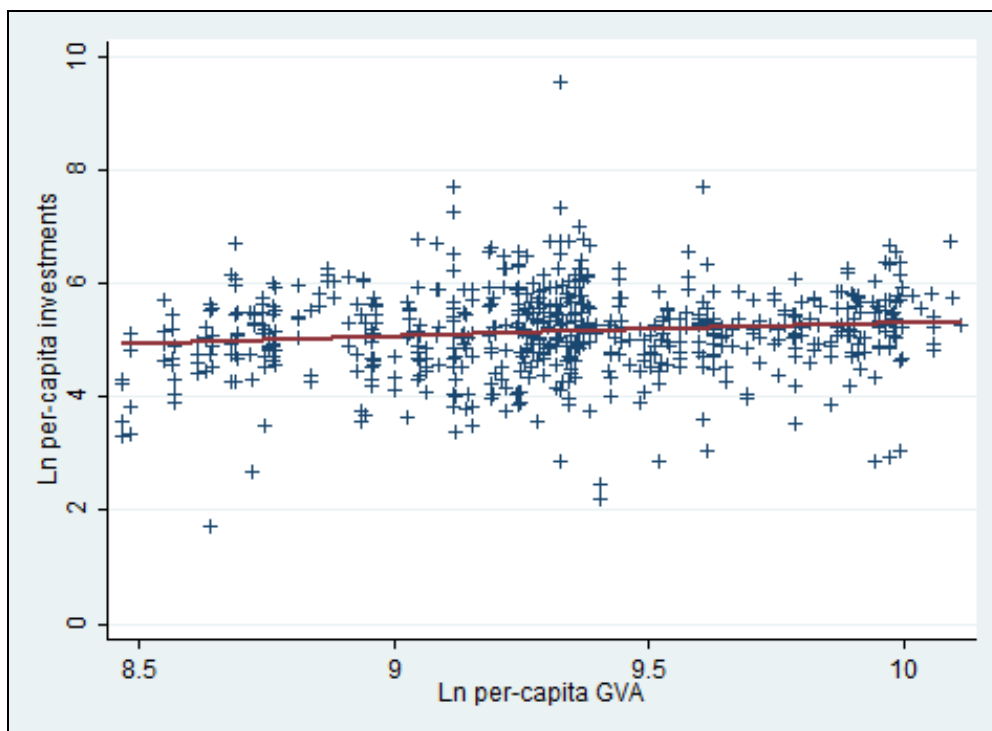
Figure 4 shows the correlation between per capita fixed-capital investments annually allocated to each province between 2004 and 2012 and the levels of provincial per capital GVA (yearly values are pooled). While a correlation between economic outputs and the amount of investments allocated is visible, 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 (Sayari and Esmer, 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% used to translate votes into parliament seats. As such, electors vote only for a political party, with the party itself controlling over 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 1 (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 (Massicard, 2007), increased electoral volatility (Hazama, 2003) and a party system 'in a state of flux' (Sayari, 2002, p. 17). Such weakness of parties along with the personalization of politics where pronounced in the eastern and south-eastern provinces (Çarkoğlu and Avcı, 2002). The 2000s brought about neater and more stable political panorama. The 2002 elections can be considered a real watershed in Turkish politics (Zeyneloglu, 2006; Işık and Pınarcıoğlu, 2010), 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 (Onis, 1997; Gunes-Ayata and Ayata, 2002; Çarkoğlu and Hinich, 2006).[2] The first social fault line is likely to be captured by the contraposition between the pro-Islamic ruling party and the main, laic 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 socioeconomic and political determinants. As pointed out by Golden and Picci (2008), public works monies – fixed capital investments in the specific case – are classic instances of geographically targetable and divisible goods. At the same time, and in line with our main focus, they also constitute an important tool used to support regional

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[2] Kurds make up Turkey's most populous minority. Depending on different estimates, they constitute between 12 and 20 % of the population (Mutlu, 1996; Gunes-Ayata and Ayata, 2002). Exact counts are not available since 1965.

development. This work 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.

The empirical model adopts the following form:

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

Where (*i* and *t* denote provinces and years respectively); $Y_{i,t}$ is the total amount of per capita national fixed-capital investments allocated to each province; $X_{i,t-1}$ and $P_{i,t-1}$ represent vectors of socioeconomic factors and politics respectively, as described in equation (1);[3] α_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 Appendix 1, 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. A more detailed analysis adopting each single sectorial axis – instead of the total investments – as dependent variable cannot be performed because of the limitations of the data available.[4] In doing so we follow earlier research (Deliktaş et al. 2008; Karadağ et al.,

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[3] Investments 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, i.e. 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 large proportion of investments is registered as multi-provincial, so it is not possible to match it with any specific province. Over 2004-2012, multi-provincial projects accounted on average for 45.67% of the total public investment portfolio, with an annual standard deviation from the period's overall mean of 5.10. Our analysis will only concentrate on the investments which can be matched with single provinces.

2004; Celebioğlu and Dall'erba, 2010). 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.

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.[5] We then try to control for the contextual socioeconomic disadvantage via 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.

Wealth: to check for the robustness of our results, we also include the total number of private cars per 10.000 heads. In recent years Turkey experienced a dramatic increase in the number of private cars, which are traditionally considered not only as a means of transport, but also as sign of economic success.

In addition, we include four other variables to control for specific socioeconomic structural conditions.

Manufacturing employment: we concentrate on the % of employment in manufacturing on total employment because of the central role that industrialisation has played in Turkey's developing economy.

Health conditions: total number of private and public hospital beds per 10.000 inhabitants.

Education attainments: % of students in higher education (vocational training and university) on total population, as a proxy for the level of education in each province.

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[5] Provincial data on GDP is not available after 2001. Turkstat started to collect data on wealth – Gross Value Added – again after 2004 (with data being available up to 2011), this time, however, at NUTS II instead of NUTS III level.

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 % of population living in rural areas.

Political 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 political criteria mainly reward constituencies aligned with the incumbent governments 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. Political data accounted for refers to vote shares and not to the number of Members of Parliament effectively elected in each province. In the light of the d'Hondt electoral formula adopted in the country, the two do not exactly coincide. The choice to focus on party votes rather than on the number of politicians is motivated by the fact that, traditionally, the political system in Turkey has been dominated by political parties (Danielson and Keleş, 1985; Turan et al., 2005; Heper and Keyman, 2006).

Kurdish nationalism: due to data shortages in the dispersion of ethnic Kurds, as well as other variables able to capture the Turkish/Kurdish cleavage, we proxy it through the % of votes received by pro-Kurdish parties.[6] While the literature based on European countries suggests that regions with strong left or separatist parties are likely to receive more resources (Kemmerling and Stephan, 2008), our expectation in the Kurdish case will be opposite (Danielson and Keleş, 1985). Constant armed tensions in Kurd-inhabited areas and armed conflict may have limited public investment (Yeğen, 1999).

Malapportionment: this variable consists in the ratio between the total provincial population (as a proxy for the total number of voters) and the number of seats allocated in

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[6] 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.

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.

4.2. Sample and data

The analysis employs a panel data set covering 81 Turkish provinces over the period 2004-2012. 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 and Kırmanoğlu, 2009).

Population information was obtained interpolating/extrapolating Turkstat's 2001 general census and Turkstat regional database's 2007-2011 figures. Data on the Provincial Development Index stems from interpolating the values from State Planning Organisation (1996, 2003) and Baday-Yıldız et al. (2010). Other socioeconomic data where 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 Appendices 1 and 2.

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 an annual time effects. Such 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 1-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). 2002 electoral results can be considered exogenous due to the deep exogenous shock occurred in the political scene during that year. 2007 and 2011 electoral results, however, risk suffering from endogeneity. To control for the robustness of FE results, our solution is to transform equation (2) using first difference

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

and then 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 and 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 et al. 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 and Troeger, 2007).[7] 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

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[7] We also considered the use of a Fixed-Effect Vector Decomposition estimator (Plumper and Troeger, 2007), eventually discarded for the inconsistency risks underlined by Breusch et al. (2011).

order to minimise such risks, the analysis restricts the range of lags to 2 and 5,[8] 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 column shows the estimates corresponding to hypothesis H.1 and the alternative hypothesis H.1A (which refers to the same variables, but foresees opposed signs). The second and third columns present the results for the second hypothesis H.2, showing first the political coefficients alone and then the full political-economic model. The full model results are our preferred ones.

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[8] As a further check, we have also tried different instrument solutions, such as adopting lags 2 to 6, lags to 2 to 4 or only lags 2 and 3. In spite of such changes, both estimates and significance levels were overall constant.

Table 1. FE estimation of the empirical model.

	(H.1) Equity/efficiency	(H.2) Politics	(H.2) Full model
Contextual development level	0.403***		0.333***
	(0.130)		(0.114)
Wealth	-1.21e-05		-0.000182
	(0.000547)		(0.000567)
Manufacturing employment	0.00600		0.00694
	(0.0127)		(0.0128)
Education attainments	-0.00776***		-0.00717***
	(0.000693)		(0.000693)
Health conditions	-0.00297		-0.00405
	(0.00810)		(0.00748)
Rural population	0.0816***		0.0736***
	(0.0255)		(0.0237)
Governing party's strongholds		0.0198***	0.0127**
		(0.00761)	(0.00622)
Main opposition party's strongholds		-0.0163**	-0.0176**
		(0.00785)	(0.00753)
Third party's strongholds		0.01159	0.0137
		(0.13652)	(0.0132)
Kurdish nationalism		0.0147*	0.00962
		(0.00901)	(0.00890)
Malapportionment		-0.4441	-1.40e-06
		(0.28972)	(2.70e-06)
Observations	648	648	648
R-squared (within)	0.165	0,151	0.177
Number of regions	81	81	81
Province FE	yes	yes	yes
Year FE	yes	yes	yes
F-test	19.47	10.69	17.56
	(0.000)	(0.000)	(0.000)

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

Starting from the first research hypothesis, which argues that investments are used as a tool to address development needs, the results show contrasting evidence. Only three out of six indicators adopted to control for socioeconomic disadvantage are statistically significant, namely the composite indicator of contextual development, as well as the education attainments, and the rate of rural population. By contrast, the level of wealth and health conditions, although with the expected sign, are not statistically significant. Even within the three 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 1) of nearly 40% of per-capita investments. Such 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 our alternative hypothesis (H1.A), as was the case of earlier works 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 area with higher levels of socioeconomic structural disadvantage, i.e. 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 1) of nearly 8% in per-capita investments. An explanation of this apparent contradiction may lie in the role that Anatolian, middle cities have played in recent development trends and, therefore, may suggest that the government has favoured the better off among the most in need. Such result is coherent with the 'growth centres' strategy put in place in recent years (particularly in the 9th 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.

The coefficients for political factors are shown in column 2, while column 3 displays the full model. Coefficients for the governing party and the main opposition one are both statistically significant and with the expected signs, both when included alone and when socio-economic regressors are controlled for. Holding other variables constant, the national AKP government seems to favour its party strongholds in the allocation of investments. This confirms that in a closed-list PR system, the AKP has tried to cement its links with its main constituencies. The opposite is true for votes for the main opposition party, whose coefficient is negative and significant, suggesting that the central government also uses public investments to 'punish' areas voting for the opposition.

The coefficient of the third party – the MHP – is not significant, suggesting that the main redistributive politics are played around the two main parties. Such result may be in line with the fact that the third party has achieved a high level of electoral support in only a few

provinces. The coefficient for the pro-Kurdish votes is positive and statistically significant in the second model. This result contradicts earlier research, which suggested that, during the 1980s and 1990s, mostly Kurdish-inhabited areas were significantly disadvantaged in public investment. Yet, once socio-economic controls are included (third model), the coefficient becomes insignificant. Finally, the results for malapportionment have the expected sign, but are not statistically significant.

In the first pages of the article we hypothesised that the potential ineffectiveness of regional development policies carried out in Turkey may be related not only to the use of wrong tools to target regional disparities, but also to the fact that those tools do not properly address the developmental targets because of politically distorted allocations. The overall results suggest a more nuanced conclusion. Appendix 4 shows the same main estimates of Table 1 but taking into account standardised values. Standardise coefficients ease the comparison across variables. First of all, socioeconomic measures remain the most relevant predictors of investment, with standardised coefficients of 0.982 and 0.330 for rurality and socioeconomic development respectively. By contrast, the politically most relevant variables show much lower coefficients, namely 0.197 (governing party's strongholds) and -0.154 (main opposition party). This means that, while political considerations are important in the allocation of public investments in Turkey, they generally play second fiddle to socioeconomic factors, which remain the main drivers of public expenditure.

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.

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

	(H.1) Equity/efficiency	(H.2) Politics	(H.2) Full model
Contextual development level	0.607***		0.373**
	(0.210)		(0.171)
Wealth	-0.000827*		0.000363
	(0.000417)		(0.000452)
Manufacturing employment	0.0241		0.0247*
	(0.0180)		(0.0140)
Education attainments	0.00325		0.00396*
	(0.00212)		(0.00233)
Health conditions	0.0230*		0.00575
	(0.0121)		(0.0111)
Rural population	0.0531***		0.0379***
	(0.0179)		(0.0122)
Governing party's strongholds		0.0013	0.0239**
		(0.00756)	(0.00933)
Main opposition party's strongholds		-0.00365	-0.0194**
		(0.00853)	(0.00851)
Third party's strongholds		-0.0286***	-0.0119
		(0.01093)	(0.0127)
Kurdish nationalism		-0.0078	0.0175*
		(0.00576)	(0.00994)
Malapportionment		-0.8236	-7.61e-06**
		(0.000)	(3.72e-06)
Constant	3.290***	15.669***	3.372**
	(1.054)	(1.979)	(1.516)
Observations	648	648	648
Number of id	81	81	81
Year FE	yes	yes	yes
F-test	15.81	11.56	14.13
	(0.000)	(0.000)	(0.000)
AR (1)	-5.27	-5.40	-5.20
	(0.000)	(0.000)	(0.000)
AR (2)	-0.16	-0.00	0.08
	(0.871)	(0.997)	(0.936)
N. of instruments	38	45	58
Hansen	28.95	37.35	40.38
	(0.222)	(0.200)	(0.409)

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

The results are broadly consistent with those of Table 1. Among the socioeconomic variables, the level of development and the ratio of rural population maintain the same signs and overall significance levels of the FE estimator. Manufacturing employment, from being insignificant across the FE results, now becomes significant in the second model. In addition, the level of economic wealth (the number of private cars per 10.000 inhabitants) now appears with the expected, negative sign and is statistically significant in the first model (but not when political factors are accounted for).

Interestingly the key political variables of hypothesis H.2 (governing and main opposition parties), when analysed without controlling for developmental divides (i.e. taken alone, in column 2), retain the expected sign, but are insignificant. Yet, once controlled for both socioeconomic and political factors (column 3), the GMM-system estimator provides overall results similar to those of Table 1. The coefficient for the governing and the main opposition parties regain statistical significance, while also witnessing an increase in the intensity of their coefficients. The coefficient for the third party continues to be insignificant, while Kurdish nationalism becomes significant.

Table 3. FE and GMM-SYS estimation of the extended model measuring political clout through each party's number of Parliament seats instead of parties' vote shares, 2004-2012.

	Full model - FE	Full model GMM
Contextual development level	0.468***	0.501***
	(0.135)	(0.161)
Wealth	-0.000453	-0.000563*
	(0.000587)	(0.000288)
Manufacturing employment	-0.00424	-0.00958
	(0.0124)	(0.0144)
Education attainments	-0.00808***	0.00419*
	(0.000653)	(0.00221)
Health conditions	-0.00605	0.0127
	(0.00823)	(0.0101)
Rural population	0.0606**	0.0197
	(0.0288)	(0.0147)
Gov. party: MPs	-0.0277	0.0169
	(0.0454)	(0.0461)
Main opp. Party: MPs	-0.0822*	0.00520
	(0.0446)	(0.0510)
Third party: MPs	-0.222***	-0.141***
	(0.0572)	(0.0415)
Kurdish nationalism: MPs	-0.0525	0.150**
	(0.0863)	(0.0711)
Malapportionment	-2.72e-06	-9.36e-06***
	(2.91e-06)	(2.23e-06)
Constant	3.636***	6.930***
	(1.378)	(0.871)
Observations	648	648
R-squared (within)	0.198	//
Number of regions	81	81
Province FE	yes	//
Year FE	yes	yes
F-test	28.37	24.73
	(0.000)	(0.000)
AR (1)		-5.39
		(0.000)
AR (2)		0.05
		(0.957)
N. of instruments		56
Hansen		43.05
		(0.195)

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

A second robustness check concerns the variable accounted for to measure political clout, as discussed in section 4.1. While in a pure proportional electoral system the two measures

coincide, in the Turkish electoral system they do not.[9] Table 3 reports the results of the extended models where, instead of the % vote casts obtained by each party, political clout is measured by the number of MPs elected in each province by each party. Now, the coefficients for the main and opposition parties are not significant, while for the Kurdish party are unclear, being first negative and insignificant, then positive and significant. Overall, the results seem to confirm the hypothesis put forward by McGillivray (2004) on the predominance – in a closed-list PR system, such as Turkey – of parties over individual legislators: political coefficients still show the expected signs, but their overall statistical significance is reduced. The exception is related to the third party whose MPs seem to be significantly driving down investments. Considering the very limited number of provinces where third parties receive a majoritarian support, we however suggest treating these results with care, as this coefficient is likely to be driven by some outliers.

Further checks to control that results are not driven by outlier cities such as Istanbul were also carried. Regressions were both run excluding Istanbul and then also Ankara and Izmir. Although not presented here, such checks confirm the validity of the main results: coefficients maintain the same signs and statistical significance, while the overall fit of the models increases slightly.

Finally, we run some placebo regressions 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. Appendix 5 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 of results

According to the ample body of literature on the links between economic development and the quality of institutions, and on the pervasiveness of patronage, we would have expected

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[9] The coefficients of pairwise correlation (at national level, and at 5% significance level) between the % of vote casts and the share of MPs obtained by each party in the provinces over our period of study are respectively: AKP, 0.59; CHP, 0.73, MHP, 0.67; Kurdish party, 0.73.

that in Turkey the geographical allocation of public monies would have been prevalently determined by political machinations (Gönenç et al., 2005). Our results, however, show a much more nuanced picture: in spite of their relevance as a driver of investments, political factors are less important than socioeconomic ones. So, how can these two contrasting conclusions be reconciled?

The first, most straightforward explanation is that such results are a proof of the 'relative strength' of the Turkish State. Indeed, compared to other emerging countries, it is possible to argue that Turkey's bureaucracy is capable of implementing independent policies. Such discourse may be particularly relevant for planning which, since the creation of the State Planning Organisation (currently Ministry for Development), has been staffed by a trained and competent state bureaucratic elite.

Second, what this research design – as well as many similar works from the literature on distributive politics – is mostly able to capture is pork-barrelling. However, as Golden (2003) and Persson and Tabellini (2000) suggest, pork-barrels and patronage are not the same. While standard pork-barrels and constituency services involve the allocation of a collective good such as building a road, a school, or a factory that, in any case, will be likely to encompass a collective benefit, patronage can be interpreted as the individualization and personalization of pork-barrels: "in a patronage system, pork-barrel allocations, which although targeted at specific electoral constituencies nonetheless involve public goods, are transformed into private goods, aimed at specific, named clienteles" (Golden, 2003, p. 200). Recognising such distinction, it is possible to argue that what is really more likely to increase with political corruption and poor institutional quality are not pork-barrels, but the forms of patronage networks, which, for their nature, are difficult to be captured by macro-level statistical analyses conducted on electoral districts.

Third, political economic 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, personalised political manipulations and corruption may happen not in the allocation of investments across provinces but at much smaller scale, such as in the local management of resources. This is what Bardhan and Mookherjee (2000) call 'local political capture'. The cases of local economic development

initiatives studied by Özcan (2006) in the new industrial Anatolian town of Kayseri show that the politicisation of development initiatives happens not only among regions, but also within the same locality – a process difficult to be captured unless adopting a qualitative, in-depth approach.

In spite of the prevalence of 'technical' criteria, our results also confirm the fact that electoral concerns in Turkey are relevant predictors of allocations. The analysis clearly uncovers a neat political cleavage occurring between the governing and the main opposition party. In light of the political protests that sprung in Turkey since summer 2013, such outcomes provide a picture of Turkey as a country with a neat socio-political fracture between pro-government supporters – i.e. provinces voting for the incumbent party – and anti-government supporters.

To conclude, the results of our analysis also question any antithetical interpretation of the political economy of public policy-making. Public choice literature has largely emphasised the role of political concerns behind the design of public policies and the standard economic literature has focused much more on concepts of efficiency. As our outcomes suggest, the real world picture is a more complex one, where 'purely electoral political' goals and objective socioeconomic criteria can be interlinked rather than diametrically opposed.

6. Conclusions

This article has examined whether public investment in Turkey follows socioeconomic – that is, the policy principles officially set out by the State – or political criteria. In line with much of the literature on distributive politics, our results show that politics plays an important role in influencing public investment allocations. The governing AKP has not been immune to the temptation of showering regions that voted for it with additional investments. Nonetheless, the magnitude of pork-barrel is relatively low in comparison to the role played by socioeconomic factors. Indeed, after controlling for electoral politics variables, socioeconomic measures remain the most relevant predictors of public investment.

Our results therefore challenge much of the public choice literature, which seems to overemphasise the impacts of electoral politics on policy-making. In spite of the earlier

evidence showing high levels of informal, patronal consensus building practices (Özcan, 2000, Heper and Keyman, 2006) and idiosyncratically controlled group loyalties (Özcan, 2006) occurring in Turkey, our analysis suggests that the Turkish state is also able to carry out policies driven by technical criteria.

The results point – somewhat unexpectedly for a country which has placed great emphasis in addressing territorial disparities – to 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 document about reducing regional imbalances.

Similarly, our results also cast doubts on earlier findings for Turkey, which depict the country as a highly kleptocratic from a policy perspective (Danielson and Keleş, 1985; Heper and Keyman, 2006).

Such apparently contrasting findings may be explained in two ways: on the one hand, our results may suggest that Turkey's strong state tradition has stopped electoral politics from completely dominating over technical policy criteria. Compared to other emerging countries, Turkey possesses a very 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 and Keyman, 2006, p. 259). Our results may thus confirm the strength of the country's very centralised and bureaucratic state apparatus, as well as its deep commitment to a modernisation paradigm prone to 'grand/programmatic interventions'. On the other hand, what is more likely to increase with the decrease of institutional quality – as indicators for Turkey would suggest (Gönenç et al., 2005) – are not pork-barrels but the forms of clientelism and patronage networks, which may happen at much smaller scale – a topic which opens up further room for research, based on the use of quantitative *as well as qualitative* analysis.

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Appendices

Appendix 1. Variables: review of main hypotheses and their operationalization

Variable	Variable description	Source
H.1 Socioeconomic rationales		Ministry of Development (former State Planning Organisation)
Contextual development level	Provincial Development Index	Devlet Planma Teskilati (1996, 2003a), Baday-Yildiz, Sivri and Berber (2010)
Wealth	Private cars per 10.000 inhabitants	Turkstat Regional Database
Manufacturing employment	% employment in manufacturing	Turkstat Regional Database
Rural population	% of rural population	Turkstat Regional Database
Education attainments	% high education students	Turkstat Regional Database
Health conditions	‰ hospital beds	Turkstat Regional Database
H.2 Politics: parties		
Governing party's strongholds	% of votes for AKP	Turkey's electoral High Committee, European Election Database
	Number of AKP MPs	
Main opposition party's strongholds	% votes for CHP	Turkey's electoral High Committee, European Election Database
	Number of CHP MPs	
Third opposition party's strongholds	% votes for MHP	Turkey's electoral High Committee, European Election Database
	Number of MHP MPs	
Kurdish nationalism	% votes to Kurdish nationalist parties	Turkey's electoral High Committee, European Election Database
	Number of MPs related to Kurdish nationalism	
Malapportionment	Ratio between the province's total population and the number of parliamentary seats allocated to it.	Turkstat Regional Database

Appendix 2. Summary statistics.

Variable	Mean	St. Dev.	Minimum	Maximum
Log Investments	5.191	0.744	1.728	9.542
PDI	-0.001	0.986	-1.659	4.150
Private cars	680.137	372.452	71.542	2017.398
Manufacturing	20.648	9.553	3.8	46.3
Education	4.369	19.046	0.036	254.955
Hospital beds	23.287	9.054	4.145	52.045
Rural population	38.263	13.598	1.010	70.855
Governing party – AKP	42.870	15.216	6.500	84.820
Main opposition party – CHP	17.331	9.016	2.010	52.500
Third party – MHP	12.191	6.900	0	44.9
Kurdish nationalism	9.522	16.158	0	70.8
Malapportionment	110778	27796	32206	189366
Gov. party – AKP: MPs	4.262	5.049	0	46
Main opp. Party – CHP: MPs	1.717	3.402	0	29
Third party – MHP: MPs	0.535	1.059	0	7
Kurdish nationalism: MPs	0.276	0.724	0	5
Ministry from the province	0.274	0.446	0	1

Source: own elaboration

Appendix 3. Pairwise correlations among variables

Electoral variables by parties' votes shares

	lpcinem	ipdi	carpop	empma	hiedpop	bedpop	rurpop	akp	chp	mhp	totkurd	malapportionment
lpcinem	1.000											
ipdi	0.0542	1.000										
carpop	0.1322*	0.7700*	1.000									
empma	0.0243	0.6092*	0.4445*	1.000								
hiedpop	0.1323*	0.1522*	0.2022*	0.2622*	1.000							
bedpop	0.2333*	0.3099*	0.4759*	0.0519	0.2581*	1.000						
rurpop	-0.1195*	-0.6534*	-0.4799*	-0.5552*	-0.2185*	-0.2495*	1.000					
akp	0.2176*	-0.0547	0.1216*	0.0261	0.0127	0.2510*	-0.1248*	1.000				
chp	0.0363	0.5117*	0.5568*	0.2989*	0.1225*	0.1977*	-0.1768*	-0.2853*	1.000			
mhp	0.0988*	0.2404*	0.4467*	0.0767	0.0541	0.1754*	-0.1123*	0.1018*	0.2334*	1.000		
totkurd	-0.0566	-0.4978*	-0.6238*	-0.3187*	-0.0966*	-0.4497*	0.1583*	-0.4140*	-0.3835*	-0.4920*	1.000	
malapportionment	-0.1398*	0.4567*	0.3766*	0.4025*	0.0466	-0.0187	-0.4836*	-0.0185	0.2496*	-0.1144*	-0.0425	1.000

Electoral variables by parties' Members of Parliament

	lpcinem	ipdi	carpop	empma	hiedpop	bedpop	rurpop	akp_mp	chp_mp	mhp_mp	kurd_mp	malapportionment
lpcinem	1.000											
ipdi	0.0542	1.000										
carpop	0.1322*	0.7700*	1.000									
empma	0.0243	0.6092*	0.4445*	1.000								
hiedpop	0.1323*	0.1522*	0.2022*	0.2622*	1.000							
bedpop	0.2333*	0.3099*	0.4759*	0.0519	0.2581*	1.000						
rurpop	-0.1195*	-0.6534*	-0.4799*	-0.5552*	-0.2185*	-0.2495*	1.000					
akp_mp	0.0027	0.5818*	0.3341*	0.2903*	-0.0273	0.0938*	-0.4982*	1.000				
chp_mp	-0.0108	0.7116*	0.4440*	0.3305*	0.0131	0.0683	-0.4807*	0.8293*	1.000			
mhp_mp	0.0136	0.4959*	0.4573*	0.2318*	0.0337	0.1317*	-0.4347*	0.5040*	0.4855*	1.000		
kurd_mp	0.0463	-0.2765*	-0.3563*	-0.1239*	-0.0627	-0.2408*	0.0015	0.1145*	0.0161	0.0155	1.000	
malapportionment	-0.1398*	0.4567*	0.3766*	0.4025*	0.0466	-0.0187	-0.4836*	0.5180*	0.4849*	0.4151*	0.1239*	1.000

Appendix 4. FE estimation of the empirical model adopting standardised coefficients..

VARIABLES	(H.1) Equity/efficiency		(H.2) Politics
Contextual development level	0.488***		0.330***
	(0.157)		(0.113)
Wealth	-0.00524		-0.0644
	(0.237)		(0.200)
Manuf. Employment	0.0702		0.0663
	(0.148)		(0.122)
Education	-0.157***		-0.118***
	(0.0140)		(0.0114)
Health conditions	-0.0342		-0.0380
	(0.0930)		(0.0703)
Rural population	1.333***		0.982***
	(0.416)		(0.317)
Governing party's strongholds		0.308**	0.197**
		(0.117)	(0.0965)
Main opposition party's strongholds		-0.143**	-0.154**
		(0.0679)	(0.0656)
Third party's strongholds		0.0748	0.0906
		(0.0886)	(0.0870)
Kurdish nationalism		0.239	0.156
		(0.147)	(0.145)
Malapportionment		-0.116	-0.0383
		(0.0801)	(0.0739)
Constant	0.0324	5.179***	5.062***
	(0.0827)	(0.0955)	(0.0809)
Observations	648	648	648
R-squared	0.165	0.150	0.177
Number of regions	81	81	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. Robust standard errors in parentheses, *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Appendix 5. FE placebo estimation of the empirical model

VARIABLES	(H.1) Equity/efficiency		(H.2) Politics
Contextual development level	0.336**		0.293**
	(0.134)		(0.134)
Wealth	8.42e-06		-8.13e-05
	(0.000611)		(0.000621)
Manuf. Employment	0.0343**		0.0346**
	(0.0133)		(0.0137)
Education	-0.00599***		-0.00586***
	(0.000688)		(0.000766)
Health conditions	0.00167		0.00290
	(0.00835)		(0.00824)
Rural population	0.0861**		0.0861**
	(0.0377)		(0.0375)
Governing party's strongholds		0.0113	0.00566
		(0.00683)	(0.00627)
Main opposition party's strongholds		-0.000675	-0.00333
		(0.00736)	(0.00702)
Third party's strongholds		0.00754	0.0138
		(0.0123)	(0.0114)
Kurdish nationalism		0.0108	0.00668
		(0.00697)	(0.00690)
Malapportionment		-0.313	-0.0377
		(0.260)	(0.262)
Constant	0.0324	8.113***	0.992
	(0.0827)	(3.072)	(3.883)
Observations	567	567	567
R-squared	0.139	0.102	0.141
Number of regions	81	81	81
Prov FE	yes	yes	yes
Year FE	yes	yes	yes

Notes: The dependent variable is expressed in logarithms. All explanatory variables are now *not* lagged by one year. Robust standard errors in parentheses, *** $p<0.01$, ** $p<0.05$, * $p<0.1$