

# Pork barrel in Türkiye: Distributive politics in the allocation of public investments into Turkish electorates

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## Abstract

We investigate the political factors involved in the allocation of public investments into Turkish electoral districts. Using a unique data set covering detailed individual characteristics of approximately 2000 Turkish MPs over five legislative periods during 1987–2004, we show that the composition of several legislator characteristics in an electorate, such as the level of education, area of tertiary degree, and former profession, matters in the way pork barrel occurs across electorates. The findings also indicate a strong presence of partisan motivations and targeted support for opposition groups and ideological strongholds in public investment allocations. We also document evidence that a stronger right-wing tendency in the cabinet, a single-party government, fractionalized voter preferences, and higher voter turnout in the electorate are all associated with increased public investments into specific geographic constituencies.

## KEYWORDS

individual legislator characteristics, pork barrel, Türkiye

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## 1 | INTRODUCTION

The geographic distribution of public investments has been examined not only in the context of economic efficiency and equity, but also with respect to political motivations. The United States political setting, with its long history of the single-member district system and powerful individual legislators, has been subject to numerous examinations (Gamm & Huber, 2002). Many congressional studies have explored the perceived link between legislator characteristics and pork barrel politics, voter responses to such activities, and the legislators' resulting re-election chances (see, among others, Alvarez & Saving 1997; Feldman & Jondrow, 1984; Ferejohn, 1974; Stein & Bickers, 1994).

The past two decades witnessed a proliferation of studies analyzing pork barrel politics in other countries. This meant that distributive politics has been investigated in different institutional settings, such as multi- (versus single) -member districts, proportional versus majoritarian electoral systems, and coalition versus single party governments; see, among others, Golden and Picci (2008) and Galasso and Nannicini (2015) for Italy, Leigh (2008) for Australia, Cadot et al. (2006) for France, and Samuels (2002) for Brazil. More common topics of analysis across the United States and non-US contexts include the role of partisan governments (right-wing vs. left-wing, or Democratic vs. Republican), swing versus core voters, and socioeconomic factors in pork barrel.

Using a unique province-level annual panel data set that covers 67 electoral districts over the five legislative periods from 1987 to 2004, this study investigates the role of political factors in geographic allocation of public investments in Türkiye. The Turkish setting offers several distinguishing advantages to enhance the understanding of distributive politics. First, Türkiye implements a closed-list proportional representation (CLPR) electoral rule.<sup>1</sup> The conventional wisdom is that the CLPR rule is associated with little pork because MPs hold no incentives to pursue personal votes due to party/leader domination over the list of candidates for elections. We develop a conceptual framework to conjecture how MP characteristics may be associated with pork barrel in Türkiye, and document significant empirical evidence that electorates strongly represented by certain MP characteristics attract different levels of public investments. Second, given that under CLPR and, more generally, under proportional representation, ruling parties and the government are focal actors in pork barrel politics, we explore the role of government type, partisan attitudes, and core versus opposition support in distributive policies. Third, the Turkish case itself. Little is known about the legislator nomination process during elections and the surrounding parliamentary landscape in Türkiye, a traditional western ally but that exhibits zigzags in domestic and international politics. Therefore, it is crucial to understand some political dynamics in this country.

Our exploration yields illuminating results on the major role played by distributive politics in public investment allocations in Türkiye. First, the composition of legislator characteristics in an electorate such as the level of education, area of tertiary education, and former profession indicating various private and public sector experience, is significantly associated with the level of public investments into an electorate.<sup>2</sup> Next, we present several other political characteristics relevant to governments and constituencies that play important roles in pork-barrel politics. For example, single-party governments uniformly make more investments across electoral districts. Additionally, a stronger right-wing representation in the cabinet means more public investments across provinces, but with more allocations made to right-wing constituencies. Moreover, electorates that voted strongly for opposition parties are targeted with more allocations. Furthermore, politically fractionalized electorates and those with higher voter

turnout rates attract more allocations. Finally, there is evidence for the role of economic factors where crisis years witnessed lower amounts of investments but electorates with larger populations attracted significantly higher public investment allocations.

Taken together, this is the first study to offer a detailed analysis of distributive politics in Türkiye around a conceptual framework that captures the economic and political (party- and MP-based factors) and using a rich data set including data on individual characteristics of approximately 2000 Turkish MPs in the period 1987–2004. Our data set on individual MP characteristics is particularly noteworthy. For example, during the sample period, the average MP age was 47 and the average number of re-elections was 1.67. Two-thirds of the MPs had bachelor degrees. Of those, 22% studied engineering, 20% law, 18% economics, 10% medicine, 6% political science, and 5% theology. The MPs' former professions were 26% director in a public institution, 18% CEO, 15% entrepreneur and contractor, 16% lawyer, 8% academic, 5% journalist, 5% farmer, and 2% imam/preacher. In addition, about 2% were female, while 87% of the MPs had no foreign experience. We aggregate these data to electorate level to determine which legislator characteristics are associated with pork barreling in a given electoral district. We also present several findings related to other nation- or province-level political factors that are at play in the distribution of public investments across electoral districts.

Luca and Rodriguez-Pose (2015) come close to our study in that they investigate distributive politics and regional development in Türkiye between 2005 and 2012. Their focus is on how provincial economic development and socioeconomic factors predict the geographic distribution of public investments. They find that while political influence mechanisms may be relevant in the distribution of public investments, the state tends to favor more developed provinces rather than channeling the resources to poorer ones.

## 2 | RELATED LITERATURE

### 2.1 | Theories of distributive politics

Distributive policies are political decisions that favor a certain geographic constituency. The projects are financed through generalized taxation and thus by electorates that cannot benefit from the offered services (Weingast et al., 1981). Distributive politics models advocate that elected officials distribute public benefits strategically to get reelected. The models are examined in two broad categories. Congressional studies, also called “free competition models,” emphasize *individual legislator* characteristics and the incentives that they face for re-election. It is argued that distributive politics arises in this setting due to competition among powerful individual legislators such as committee chairs, members of committees, and senior and experienced congressmen.<sup>3</sup> The second group of models is known as “discretionary allocation models,” focusing on the incentives of *political parties* to secure more seats in the next election. These party-based models assume that the ruling party uses its distributive power to maximize the probability of obtaining the majority seat in the legislature. It is argued that party leaders have strong command over the rank-and-file members and, hence, the distribution of pork. It is also widely held that parties in power are more effective in pork barreling than are those in opposition due to the informational advantages that the former have, leading them to reap disproportional benefits of the distributions.

Partisan attitudes have also been identified as a significant factor in distributive politics.<sup>4</sup> Partisan bias in federal outlays, distribution of sports grants, allocation of fiscal resources, and

expenditure choices has been shown to be prevalent in various countries, including the United States, Canada, Australia, and Argentina (Alvarez & Saving, 1997; Calvo & Murillo, 2004; Denmark, 2000; Kneebone & McKenzie, 2001; Thompson, 1986). Partisan ties can also be ideological in that right- versus left-wing governments can favor constituencies with their own leaning in economic decision-making (see Arin & Ulubaşoğlu, 2009).

Another focal point of interest has been “swing” versus “core” voters. Some studies argue that public resources are allocated disproportionately to “swing voter” districts (see Dixit & Londregan, 1996 for the US, Denmark, 2000 for Australia, Case, 2001 for Albania, Dahlberg & Johansson, 2002 for Sweden, and Kwon, 2005 for South Korea), while others argue that “core supporter” districts receive the disproportionate allocations (see Cox & McCubbins, 1986 for the US, Milligan & Smart, 2005 for Canada). Galasso and Nannicini (2017) suggest that under proportional representation, the share of swing voters in the electorate determines the MP choice, while under majoritarian systems, the distribution of competitive versus safe districts is an additional factor.<sup>5</sup>

## 2.2 | Pork barrel politics and re-election

Although the US-related literature has investigated extensively legislators' chances of re-election because of pork barrel politics, it is not clear whether the connection is firm. Levitt and Snyder (1997) find that an expenditure of \$100 per individual or a public expenditure of \$50 million per electoral district leads to an increase of approximately 2% in votes (see also Alvarez & Saving, 1997). However, using data from 1976, 1978, and 1980, Feldman and Jondrow (1984) find no relationship between increased expenditure and re-election. In the context of Italy and France, Golden and Picci (2008) and Cadot et al. (2006), respectively, find a strong effect of resource allocations on re-election of influential politicians. It would be plausible to posit that varying chances of re-election due to pork do not mean that legislators will not be engaged with the “homestyle politics,” and it is likely that their re-election motives and efforts will be maintained regardless of posterior outcomes.

## 2.3 | Electoral rules and pork barrel politics

It is widely held that electoral systems and rules affect distributive politics through influencing the politicians' and voters' incentives.<sup>6</sup> Lancaster (1986, p. 72) provides a chart of electoral systems and the expected level of homestyle. The intensity of pork barreling is strongest in the SMD system and decreases over the spectrum of MMD-PR, MMD-PR (large districts), and at-large systems.<sup>7</sup> In an SMD system, the plurality of votes required for an electoral district encourages legislators to pursue their interests independently, while in an MMD system, legislators rely on the party for ballot access. Given that several MPs are to be elected per district, this typically generates free rider and accountability problems (Hillman, 2009). As a result, pork is expected to be less extensive in the MMD system. Likewise, majority/plurality, multimember plurality, single transferable vote, and mixed systems are associated with different levels of pork barrel politics. See Herron (2002); Lancaster and Patterson (1990); Stratmann and Baur (2002), and Pekkanen et al. (2006).<sup>8</sup>

The level of pork is also expected to differ across different rules *within* the MMD system. The proportional representation (PR) system generally specifies two different party lists in

elections: OLPR and CLPR. Under OLPR, candidates' ranks are determined during the elections by preferences specified on the electoral ballot, whereas under CLPR, voters vote for a list that was pre-decided by a leader or the party (Pereira & Renno, 2003). Thus, it is argued that OLPR stimulates competition among the candidates of the same party for a higher rank on the ballot, thus generating incentives to attract public resources to their districts. When the list is closed, legislators have no incentive to obtain personalized support in their districts (Shugart et al., 2005 and Sieberer, 2010). Overall, the link between legislators and voters is argued to be weak under CLPR.

### 3 | THE TURKISH CONTEXT

#### 3.1 | Economic factors in public investments in Türkiye

In any allocation model, economic variables are considered as one of the primary drivers of public investments. Economic determinants of regional allocations typically follow a government's planning problem that is based on efficiency-equity grounds, generally providing solutions that depend on provincial population and provincial GDP.<sup>9</sup> These models suggest that population and income would capture the economically optimum levels of public investment into a province. Economic factors in the Turkish case further include prioritized development province status and whether the country had an economic or financial crisis in year  $t$ . We also consider national election years within this class of factors, as they concern the whole country rather than a specific geographic constituency. The *deviations* from these factors are likely to be due to distributive politics (Bordignon et al., 2001), such as party- or MP-based pork barrel.

#### 3.2 | Pork barrel in Türkiye: Party-based pork barrel

Pork barrel politics is closely related to the budget process. Ferejohn (1974) mentions the importance of the distribution of power between legislatives and executives over budgetary allocations. Factors such as the authority of the legislative branch to make changes to the budget, the involvement of committees in the distribution of allocations, and the efficiency of executives in the allocation of allowances are all critical for transferring resources to different electoral districts. In Türkiye, the Planning and Budgeting Committee (PBC) of the Turkish Parliament has the authority to prepare and amend the budget draft, which is then approved by the legislature to get into effect. Proposals from the floor involving changes in budgetary allocations are constitutionally banned.

In this institutional setting, the cabinet has a strong say over the budget, meaning that party-based considerations play significant roles in allocations. First, ruling parties have strong informational advantages in pork barreling over the opposition. However, if the government is faced with a competition from the opposition in a province, it may keep public investments flowing to prevent seat losses in that electorate (see Arin & Ulubaşoğlu, 2009 for privatization). Therefore, political leaders in the government, including the prime minister, cabinet ministers, and head of the Planning and Budget Commission, may influence the allocations in line with their own interests.

Second, as the cabinet is a prominent actor behind the investment decisions, its type may play a role in allocations. It is expected that single-party governments can overcome the

consensus problem, and thus, make more investments. By contrast, coalition governments, despite better reflecting popular opinion, may not necessarily be able to agree on projects. In the absence of agreements, projects may disappear from the scene altogether, resulting in fewer investments. One may plausibly counter, however, that the coalition parties, instead of fighting, may opt to please each party's constituency and, hence, may pragmatically allow all the proposed allocations. The net effect is an empirical issue. Another dimension in this context is the ideology of the ruling parties. Right-wing governments are believed to place greater emphasis on economic development with a pro-capital attitude, while left-wing governments are pro-labor and take a redistributive stance. The relative effect of this contrast on public investments is again an open question.

Third, partisan factors may influence the allocations given targeting strategy of the governing party of core or opposition strongholds. For example, the governing party may favor higher allocations into provinces that are their strongholds or may even target some of the opposition strongholds to attract votes. Also, ideological factors, such as right versus left wing leaning of the governing parties may result in targeted budget allocations where ideological strongholds may be favored against the opposite political leaning.

Fourth, governing parties may additionally consider the fractionalization of political preferences and the voter turnout in determining the allocations, and thus, political cohesion in a province may affect public investments. Provinces where political preferences are aligned with the governing party/parties may be favored if the allocations are made according to core support or neglected if they are made with respect to opposition support. Conversely, electorates with dispersed preferences may be allocated more investments given that they may be considered as swing. A lack of political cohesion may also mean that the MPs of those provinces are less likely to be able to lobby collectively, and therefore, such electorates may attract fewer projects. All these factors suggest that the link between political cohesion and the amount of public investment is an empirical question. In addition, the voter turnout affects whether expressing political choices over the electoral ballot affects the levels of public investment. Various aforementioned motives underlying voter turnout, as well as the turnout rate itself, may force the government to pay special attention to such electorates (see also Smart & Milligan, 2005).

### 3.3 | Pork barrel in Türkiye: MP-based pork barrel politics

In Türkiye, election rules stipulate three possible nomination procedures for the party list: primaries at the electorate level, nomination by party councils at the electoral level, and "central polling" where the party leader or the party supreme council determines and ranks the candidates. In our study period, legislator nominations were compiled predominantly through "central polling" (which led to frequent debates about the lack of intra-party democracy in the country). Nominated this way, the MPs are expected to work within the goals and objectives of the party leadership.

In our sample, Turkish parliament hosted 450–550 MPs in every legislative period. Abiding by the CLPR theories would suggest that the 450–550 MPs hardly engaged in pork barrel and distributive politics following their election. Rather, a more plausible question is: who was engaged and who was not? We hypothesize that pork barrel will exist in intra-party dynamics in Türkiye rather than being non-existent or weak due to the assumed shallow competition among candidates over the electoral ballot as offered by the CLPR theories. While we agree that



the PR systems are characterized by party-domination<sup>10</sup> and a relatively strong focus on national issues, we also emphasize that the legislators' characteristics are not less prominent under the CLPR system. There are two main considerations that motivate our argument. First, the party leadership may nominate MPs with certain characteristics (i.e., seniority, age, female, and prior occupation) to maximize their votes and secure more seats in certain electoral districts.<sup>11</sup> Such a possibility of competing on "good politicians" is shown by Galasso and Nannicini (2011).<sup>12</sup> The provinces that host these electable MPs would then be rewarded by the party leadership via pork barrel.<sup>13</sup>

Second, those MPs who want to get re-elected are likely to use pork barrel projects as a means of remaining visible to party leadership and to maximize their chances of re-nomination in the next elections. This argument is consistent with Besley (2006), who, in the context of political agency models, argue that elected public officials have strong incentives to exert efforts to get re-elected.<sup>14</sup> These MPs try to remain visible via lobbying efforts and by using their informal connections. In this case, some of their characteristics (such as education level, area of tertiary degree, and prior public and private sector experience) may help them stay connected with the party leader and their constituencies.<sup>15,16</sup> This motivation might be boosted by the fact that the connections with the party leadership may be subject to "depreciation" over time, as there might arise other competing candidates in the constituency and the party leader's maximization problem for the locality may change over time.

Notably, the first motivation above suggests "top-down" allocations into a geographic constituency, while the second motivation refers "bottom up" pork barrel dynamics; both are likely to be prevalent in the context of Türkiye.

### 3.4 | A conceptual framework of public investment allocations in Türkiye

All the above considerations lead us to offer the conceptual framework in Table 1 that captures the public investment allocations in Türkiye.

In this framework, the economic factors are measured by provincial population, GDP, prioritized development province status, whether the country had an economic or financial crisis in year  $t$ , and whether the country had a national election in year  $t$ . As noted, the *deviations* from these factors are likely to be due to distributive politics, such as party- or MP-based pork barrel.

To measure the party-based pork barrel, we construct several variables capturing party leadership, the type of government, party strength in the province, and provincial voter preferences. Because the Cabinet and the ruling parties play dominant role in public investment allocations, *LEADER* consists of binary variables indicating whether the electoral district hosts (i) the seat of the PM; (ii) seat of the PBC Head, as well as (iii) the number of cabinet ministers in the electorate. In terms of the type of the government (*GOVT*), we use, in alternative models, binary variables indicating (i) coalition versus single-party government and (ii) left- versus right-wing government (both vary at the national level). Provincial representation-related (*PR*) factors include party strength in each province, specifically (i) vote shares of the governing party/parties; (ii) that of the largest opposition party; (iii) that of the other (smaller opposition) parties, and (iv) vote shares of the left- versus right-wing parties. They also include political cohesion and expression-related variables including (i) fractionalization of political preferences (i.e., a Herfindahl index of vote shares of each party in a province), and (ii) the voter turnout rate, at the province level. The variables are employed in alternate specifications to prevent multicollinearity.

TABLE 1 A conceptual framework of public investment allocations in Türkiye.

<b>Political factors</b>	
<b>Economic factors</b>	<b>MP-based pork barrel</b>
*GDP	*Party leader distributes pork to maximize votes in a constituency
*Population	*Mechanism: rewarding electable MPs that were nominated in top of the lists with pork allocations based on seniority/reputation, age, gender, prior occupation
*Prioritized development province	*Mechanism: lobbying and using informal connections based on the sector experience, occupation, level of education, area of tertiary degree
*Economic and financial crises	*Bottom-up pork barrel
*Elections	*Party leader distributes pork to maximize votes in a constituency
	*Mechanism: rewarding electable MPs that were nominated in top of the lists with pork allocations based on seniority/reputation, age, gender, prior occupation
	*Mechanism subject to depreciation over time
	*Top-down pork barrel
	*Fractionalized constituencies and provincial voter turnout may matter



Next, we measure the MP-based pork barrel. As the rank on the party list is unlikely to be completely exogenous to candidates under CLPR, we construct several MP characteristics (MPC) that are likely to measure their potential pork barrel engagement. The MPC vector includes variables proxying the composition of motives and skills of the legislators and their predicted ability to remain visible to the relevant offices to extract pork. These indicators include, (i) seniority, (ii) gender, (iii) education level, (iv) area of tertiary degree, (v) former profession, and (vi) foreign country experience.<sup>17</sup> In particular, seniority measures the (average) number of times a province's MPs has been re-elected by a given legislative period. The level of education refers to primary and high school graduate, bachelor degree graduate, and master and PhD graduate. We utilize a range of bachelor degree areas, such as law, political science, economics, medicine, and engineering, Former professions are also employed along similar lines, including former governor, undersecretary, farmer, academic, CEO, contractor, businessman, and economist/banker/accountant roles.<sup>18</sup> Foreign experience captures the trait of having had a foreign country experience,<sup>19,20</sup> For measurement, we compute the share of these attributes in the overall MP body in an electoral district.

Although it is difficult to draw solid a line here between the top-down and bottom-up pork barrel dynamics, we envisage that seniority, age, gender, and former profession (including prior public and private sector experience) are more likely to capture the top-down pork barrel, while the level of education, area of tertiary degree, and former profession (including prior public and private sector experience as well as foreign experience) are more likely to measure the bottom-up dynamics. Nonetheless, in certain models we use all the legislator characteristics to capture all the MP-related pork barrel and avoid omissions.<sup>21</sup>

## 4 | EMPIRICAL ANALYSIS

### 4.1 | Specification

Our general empirical formulation is as follows:

$$\ln(Inv_{it}) = f(EF_{it}, LEADER_{it}, GOVT_t, PR_{it}, MPC_{it}, \varepsilon_{it}),$$

where  $\ln$  denotes the natural logarithm,  $Inv$  is the amount of public investment allocated to electoral district  $i$  in year  $t$ ,  $EF$  is a vector of economic factors,  $LEADER$  indicates whether the district hosts leader(s) involved in budget-making,  $GOVT$  denotes the type of government,  $PR$  is a vector of variables gauging parties' strength and political cohesion in provinces,  $MPC$  represents the individual MP characteristics in an electoral district, and  $\varepsilon$  is an error term with the structure  $\varepsilon_{it} = \mu_i + \delta_{it} + v_{it}$ , where  $\mu$  is province-fixed characteristics,  $\delta$  is province-specific time trend, and  $v$  is the random error. The log transformation of public investment produces a normally distributed dependent variable, and hence, is preferred.

### 4.2 | Econometric methodology

Our baseline estimation methodology is Ordinary Least Squares (OLS) which controls for province-fixed effects and province-specific time trends. The fixed effects regression eliminates unobserved time-invariant effects related to provinces, thereby addressing selection that occurs

due to time-invariant factors underlying the economic and political determinants of public investments, such as geography, topography, and climate. The fixed effects regression can also address, if not entirely eliminate, slow-moving factors that are unlikely to change in the sample period (e.g., more liberal electorates produce highly educated MPs, which may, in turn, underlie the lobbying or permanent regional differences, such as the socio-cultural and political factors associated with the Kurdish-dominated south-east).<sup>22</sup> Moreover, controlling for province-specific time trends isolates the long-term trajectory of both the dependent and independent variables, enabling us to capture the out-of-trend deviations specific to each province, thereby facilitating a more reliable attribution of the effects to the explanatory variables.

We also consider the cross-sectional dependence in public investments, given that investment in an electorate may affect the allocations into others. In terms of political factors, this is the very issue about pork: funds are taken away from one electorate and expended on another, given the budget. Additionally, the economies of the Turkish provinces are relatively conjoined, in that production, consumption, transportation investments are all interlinked. Formal tests of spatial dependence indicate the presence of the problem,<sup>23</sup> and our analysis therefore employs the Driscoll and Kraay (1998) standard errors. Our panel is balanced and contains a relatively large  $T$  compared to many other studies, indicating that the nonparametric correction to the time series covariance matrix estimator should be reliable.

Our baseline regressions do not control for year-fixed effects because our models include crucial national level variables, such as the type and the ideology of the government. To capture some time-related shocks common to all provinces, we also directly control for important nation-wide factors including economic and financial crisis years and election years.

## 5 | DATA

The public investment data have been compiled from public investment reports published by the State Planning Organization (SPO, 1987, 2008) for the period 1987–2004.<sup>24,25</sup> These investments are the provincial allocations into sectors such as on education, health, agriculture, manufacturing, mining, construction, energy, transport, communications, and tourism, as funded by the central government. Project types include, among others, schools, hostels, hospitals, roads, power plants, and irrigation channels. Provincial GDP and population and the information on being a prioritized development province<sup>26</sup> are collected from the SPO and the Turkish Institute of Statistics (with the Turkish acronym TUIK, 2008). The individual characteristics of approximately 2000 MPs are obtained from their CVs, which were published in the albums of the Turkish Grand National Assembly. Data on party vote shares and parliamentary seats are obtained from TUIK. Table 1 includes the variable definitions.

Table 2 shows the descriptive statistics of all variables used in our analysis.

## 6 | EMPIRICAL RESULTS

### 6.1 | Economic factors

Table 3 shows that among the economic factors, the population of a province is the most important element related to the level of provincial public investment. Our estimates imply that

TABLE 2 Descriptive statistics.

Variables	Mean	SD	Min	Max	N
Investment (TL in millions)	302.43	704.54	1.83	15,468.23	1206
Population	881,171	1,157,481	82,051	11,100,000	1206
GDP (TL in millions)	14530	28922	73	285817	1206
Prioritized development province (Yes = 1)	0.474	0.500	0	1	1206
Crisis year (Yes = 1)	0.222	0.416	0	1	1206
Election year (Yes = 1)	0.278	0.448	0	1	1206
Coalition Govt (Yes = 1)	0.611	0.488	0	1	1206
Prime Minister seat (Yes = 1)	0.019	0.137	0	1	1206
Total no of ministers	0.321	0.698	0	6	1206
PBC Head seat (Yes = 1)	0.015	0.121	0	1	1206
Vote share of govt parties (%)	41.351	13.006	6.67	84.82	1206
Vote share of main opposition (%)	22.936	8.267	3.38	60.24	1206
Vote share of other parties (%)	35.713	12.767	1.39	85.04	1206
Voter fractionalization	0.227	0.056	0.134	0.739	1206
Voter turnout	86.190	6.528	61.77	97.19	1206
Vote share of right-wing parties (%)	65.0	12.1	17.8	91.2	1206
Vote share of left-wing parties (%)	25.8	11.4	4.2	73.8	1206
Female–male ratio	0.017	0.071	0	1	1206
Average seniority	1.633	0.475	0.059	3.333	1206
Average age of MPs	48.525	4.337	33	66.5	1206
Number of MPs	7.183	7.659	2	70	1206
Share of MPs with primary or high schooling	0.123	0.165	0	0.8	1206
Share of MPs with bachelor degree	0.674	0.219	0	1	1206
Share of MPs with master/PhD degree	0.202	0.186	0	1	1206
Share of MPs with theology degree	0.045	0.101	0	0.5	1206
Share of MPs with law degree	0.205	0.197	0	1	1206
Share of MPs with economics degree	0.158	0.169	0	0.75	1206
Share of MPs with pol sci degree	0.052	0.092	0	0.5	1206
Share of MPs with medicine degree	0.118	0.150	0	0.667	1206
Share of MPs with education degree	0.067	0.114	0	0.5	1206
Share of MPs with engineering degree	0.214	0.192	0	0.75	1206
Share of MPs formerly academic	0.015	0.028	0	0.222	1206
Share of MPs formerly contractor	0.057	0.105	0	0.5	1206

(Continues)

TABLE 2 (Continued)

Variables	Mean	SD	Min	Max	N
Share of MPs formerly journalist	0.026	0.066	0	0.5	1206
Share of MPs formerly entrepreneur	0.202	0.197	0	1	1206
Share of MPs formerly farmer	0.051	0.120	0	0.778	1206
Share of MPs formerly econ/banker/account	0.062	0.113	0	0.5	1206
Share of MPs formerly governor	0.020	0.056	0	0.4	1206
Share of MPs formerly undersecretary	0.028	0.069	0	0.4	1206
Share of MPs formerly CEO	0.149	0.178	0	1	1206
Share of MPs with foreign experience	0.096	0.143	0	1	1206

Note: Data for province-by-year observations. Turkish Lira (TL) figures are adjusted for 1987 GDP deflator.

an increase in the provincial population of 1% increases the annual public investment by up to 1.8%, depending on how political factors are defined in the model. An additional relevant factor seems to be the crisis year. Crisis years are uniformly negatively related to the level of public investments (note that crisis year is a national variable), but weakly significant. Where significant, crises seem to hamper the allocations by approximately 0.2% across provinces in the relevant year.<sup>27</sup> Likewise, the income of the province is negatively related to the level of public investment, but this effect is insignificant. The negative coefficient may have implied that as provincial income increases, private sector investments become more prominent. Prioritized development province is estimated with uniformly positive coefficients, implying that such provinces annually receive higher allocations from the central government, yet the effects are statistically insignificant. Finally, election years do not exhibit statistically significant evidence for a change in public investments across all districts.<sup>28</sup>

## 6.2 | Leaders

Turning to leadership-related factors in pork barrel activity in Türkiye, Table 3 documents that electorates that hold the prime ministers' seat are generally associated with higher levels of public investment. Where significant, this effect corresponds to a 0.2% higher annual public investment into the district. Hosting cabinet ministers and the chair of the PBC does not seem to be associated with a different level of public investments into an electorate.

## 6.3 | Type of government

Table 3 shows evidence that coalition governments tend to make less public investment across all electoral districts compared to single-party governments (Models 1–3). Where significant, this difference is estimated to be in the order of a 0.3% higher investment each year. Table 3 also shows that cabinets with stronger right-wing representation are associated with higher public investments across the country (Models 4–6). The statistical significance of this effect is below the conventional levels (see partisan bias analysis below, however).

TABLE 3 Party-based pork barrel politics in Türkiye (18., 19., 20., 21., and 22. Legislative periods, 1987–2004).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>Dependent variable: Log (provincial public investment)</b>								
Log Pop.	1.556** (2.463)	1.678** (2.619)	0.811* (2.080)	1.831*** (3.089)	1.870*** (3.034)	0.905** (2.376)	1.603** (2.579)	1.774*** (3.121)
Log GDP	-0.125 (-0.751)	-0.147 (-0.990)	-0.0587 (-0.400)	-0.276 (-1.401)	-0.242 (-1.390)	-0.188 (-1.272)	-0.207 (-1.493)	-0.216 (-1.043)
Prioritized	0.201 (0.635)	0.187 (0.677)	0.0361 (0.121)	0.302 (0.886)	0.256 (0.905)	0.0914 (0.292)	0.158 (0.605)	0.201 (0.678)
Crisis year	-0.149 (-1.226)	-0.117 (-1.001)	-0.172* (-1.829)	-0.188 (-1.402)	-0.139 (-1.061)	-0.217** (-2.559)	-0.106 (-0.998)	-0.218 (-1.738)
Election year	0.00243 (0.0201)	0.0196 (0.189)	0.0417 (0.327)	0.0296 (0.249)	0.0349 (0.338)	0.0822 (0.690)	0.0496 (0.543)	-0.00156 (-0.0135)
PM seat	0.206* (1.887)	0.129 (1.009)	0.262** (2.555)	0.213* (1.855)	0.134 (0.976)	0.199* (1.811)	0.0876 (0.720)	0.162* (1.715)
No. of ministers	-0.0117 (-0.293)	-0.0373 (-0.964)	-0.0194 (-0.729)	-0.0235 (-0.618)	-0.0454 (-1.206)	-0.0356 (-1.324)	-0.0444 (-1.156)	-0.0381 (-1.260)
PBC Head seat	-0.0530 (-0.238)	-0.0928 (-0.406)	-0.0751 (-0.357)	-0.0459 (-0.201)	-0.0892 (-0.386)	-0.0793 (-0.380)	-0.0712 (-0.292)	-0.0679 (-0.303)
Coalition govt.	-0.231 (-1.659)	-0.148 (-1.444)	-0.222** (-2.216)				-0.589 (-0.907)	
Right wing govt.				0.498 (0.956)	0.248 (0.584)	0.566 (1.568)		-1.268 (-1.380)

(Continues)

TABLE 3 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>Dependent variable: Log (provincial public investment)</b>								
Govt parties vote share	-0.00267 (-0.889)			-0.00406 (-1.519)				
Main opposition party vote share		-0.0100* (-2.094)			-0.00954* (-1.936)		-0.00483 (-0.442)	
Other parties' vote share		0.00910* (1.954)			0.0107** (2.565)		-0.00385 (-1.073)	
Voter fractionalization			-0.215 (-0.299)			0.623 (0.787)		
Voter turnout			0.0449*** (3.864)			0.0518*** (4.727)		
Coalition govt*Main opposition party							-0.00980 (-0.563)	
Coalition govt*Other parties							0.0164** (2.603)	
Right wing vote share								-3.235** (-2.583)
Right wing govt*Right wing vote share								2.788** (2.267)
Constant	86.05*** (2.938)	110.3*** (3.438)	18.06 (0.756)	76.51** (2.461)	107.3*** (3.438)	-10.72 (-0.428)	90.59*** (2.930)	87.10*** (3.042)



TABLE 3 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>Dependent variable: Log (provincial public investment)</b>								
Observations	1206	1206	1206	1206	1206	1206	1206	1206
Number of provinces	67	67	67	67	67	67	67	67

*Note:* Province-fixed effects and province-specific time trends are controlled for in all regressions. Driscoll–Kraay *t*-statistics in parentheses.

\*\*\* $p < .01$ ; \*\* $p < .05$ ; \* $p < .1$ .

## 6.4 | Provincial representation

Noting that we employ the provincial vote share of each party as the measure of local party strength, Model 1 in Table 3 shows that the central government does not allocate different amounts of public investment into provinces that strongly support the government parties relative to opposition parties. Curiously, however, Model 2 reports that provinces that have greater support for both main and smaller opposition parties receive more allocations compared to those that support the government parties. This result does not change when the type of government is right-wing vs left-wing (see Model 4 and 5). These findings suggest that governments in the study period were not engaged in core support but rather they pursued opposition and swing-voter support. A likely reason why core support was not pursued could be that parties in the cabinets were mainly coalition governments in the sample period, so they may not have been able to agree on allocations to their respective strongholds. Rather, the voters of the largest opposition party and the supporters of the smaller opposition parties might have been seen easier to manipulate such that higher investments into those electorates may be rewarding. Models 3 and 6 in Table 3 show that while political cohesion (measured by vote share fractionalization) is not significant, voter turnout is a strongly significant and positive predictor of the amount of public investment allocations.

An important conclusion that can be drawn from these results is that the government targets the main and smaller opposition constituencies by allocating more public investments into those electorates.

## 6.5 | Partisan bias

The findings above do not answer whether the type of government, such as coalition versus single-party or right- versus left-wing, allocates public investments based on partisanship ties. Thus, we next examine the partisan bias in public investment allocations. Focusing on the coalition governments and its interaction term with the main and smaller opposition parties, the principal finding is that coalition governments tend to allocate higher allocations to the strongholds of smaller opposition (Model 7 in Table 3). This finding curiously implies that where the coalition governments can agree on targeting certain strongholds, they agree on targeting smaller opposition groups. Coalition governments are likely to be challenged regularly by the main opposition party, so the government may avoid supporting the strongholds of the main opposition.

We also analyze ideological bias in Table 3 by adopting interaction terms between the right-wing government indicator and the vote share of right-wing parties. In Türkiye, most parties are well-defined in terms of their ideological leanings.<sup>29</sup> Model 8 yields that, all else equal, right-wing governments' public investments into provinces tend to be higher with stronger rightist support in the electorate. The interaction term is strongly significant at 5% level. This effect implies that, considering the mean right-wing vote share of 65%, a fully right-wing cabinet makes, on average, a 1.81% ( $2.788 \times 0.65$ ) higher investment per annum to support its ideological constituency. This result strongly confirms that right-wing governments provide core support based on ideological ties.

## 6.6 | Individual MP characteristics in an electorate

Table 4 moves on to MP-based pork barrel and presents the results for individual MP characteristics in an electorate as predictors of pork barrel activity. In all models we include the economic factors given our conjecture that political factors are deviations from economically optimum level of public investments. As before, we estimate provincial population to be a robust economic predictor of public investments across all models in Table 4.

In terms of the MP-related pork barrel, consistent with our conceptual framework, Model 1 includes the conjectured “top-down pork barrel” variables, while Model 2 includes the hypothesized “bottom-up pork barrel” indicators. In a nutshell, the results indicate that the top-down and bottom-up dynamics are not mutually exclusive, but rather they complement each other. For example, in terms of former professions, Model 1 shows that electorates strongly represented by MPs with private sector experience such as former entrepreneurs, and those with public sector experience such as former governors may attract top-down allocations, while Model 2 points to additional former professions capturing bottom-up pork barrel to an electorate, such as former farmers and former economist, banker, and accountants. Moreover, Model 2 further shows that the level of education and some specific areas of tertiary education may be associated with different levels of public investments to an electorate.

In view of the difficulty of separating the top-down and bottom-up dynamics completely and to capture all the legislator-related dynamics, Model 3 includes all MP characteristics, which will form the basis for our discussion. We find that districts that are strongly represented by MPs with master's/PhD degrees receive significantly more allocations (bachelor's education is the base). In contrast, those electorates strongly represented by primary or high school-educated MPs attract significantly lower investments. These results are consistent with the literature that more educated legislators receive more public investments.

Model 3 also shows that the area of bachelor's degree may make a difference to public investments in an electorate (both the education levels and the specific bachelor's areas are interpreted with respect “other bachelor's degree areas”). In particular, stronger representation by MPs holding a bachelor's degree in theology or political science is associated with lower levels of public investments into a province, while an MP composition holding more engineering degrees tend to attract higher investments. These results are not surprising because theology graduates (e.g., former imams and teachers) might be passive actors of lobbying; political science graduates might center their interests on different domains than public investments; and engineering graduates might pursue infrastructure investments such as roads and bridges.

As indicated above, electorates that are strongly represented by former governors are robustly and positively associated with higher levels of public investment. The associated coefficients show that this feature is remarkably the strongest indicator of pork-barrel among all individual MP characteristics. Compared to other professions, electorates strongly represented by former economist/banker/accountants, farmers, journalists, or entrepreneurs are associated with significantly higher levels of public investment. In contrast, provinces that are strongly represented by former contractors receive lower amounts of public investments. This finding may sound surprising, but it might suggest that former contractors may be involved with lobbying during the tender process rather than in the allocation process, or that these contractors may target nation-wide projects rather than projects for their own constituency. Electorates that are represented more strongly by former academics, under-secretaries, or CEOs are generally attract insignificantly different levels of public investments

**TABLE 4** MP-based pork barrel politics in Türkiye (18., 19., 20., 21., and 22. Legislative periods, 1987–2004).

	(1)	(2)	(3)	(4)	(5)	(6)
<b>Dependent variable: Log (provincial public investment)</b>						
Log Pop.	1.841** (2.691)	1.951*** (3.113)	1.940*** (3.117)	1.963*** (3.617)	1.970*** (3.107)	2.086*** (3.074)
Log GDP	−0.310 (−1.597)	−0.282 (−1.647)	−0.285 (−1.692)	−0.225 (−0.545)	−0.238 (−1.272)	−0.270 (−1.701)
Prioritized	0.327 (0.835)	0.336 (0.967)	0.332 (0.925)	0.338 (0.978)	0.239 (0.795)	0.496 (1.337)
Crisis year	−0.222 (−1.698)	−0.233* (−1.885)	−0.235* (−1.945)	−0.167 (−1.647)	−0.244* (−1.962)	−0.228* (−1.856)
Election year	−0.0214 (−0.147)	−0.0250 (−0.175)	−0.0292 (−0.201)	−0.0372 (−0.240)	−0.00636 (−0.0412)	−0.0348 (−0.233)
Female/male ratio	0.418 (1.081)		0.304 (0.695)	0.493 (0.961)	0.831 (1.126)	0.319 (0.635)
Avg. seniority	0.0832 (1.262)		0.0845 (1.245)	−0.0280 (−0.299)	0.0975 (1.405)	0.0748 (0.928)
Average MP age	0.00283 (0.545)		−0.00239 (−0.413)	−0.00728 (−0.901)	−0.00347 (−0.723)	0.000127 (0.0133)
Primary + high school		−0.536** (−2.704)	−0.502** (−2.727)	1.200*** (3.395)	−0.480** (−2.588)	−0.325 (−1.440)
Master-PhD degree		0.687*** (4.180)	0.661*** (4.118)	0.679*** (4.899)	1.014*** (5.744)	0.685*** (3.798)
Theology graduate		−1.480*** (−3.748)	−1.495*** (−3.801)	−0.877* (−2.078)	−1.354*** (−3.285)	−1.473*** (−3.776)
Law graduate		0.000351 (0.00129)	−0.00145 (−0.00521)	0.949** (2.542)	0.0310 (0.0949)	0.0779 (0.216)
Economics graduate		0.0348 (0.196)	0.0544 (0.303)	0.620* (2.010)	0.0239 (0.180)	0.0578 (0.265)
Pol. sci. graduate		−1.029*** (−7.952)	−0.883*** (−4.294)	−0.665** (−2.345)	−1.124*** (−3.666)	−0.878*** (−4.012)
Medicine graduate		−0.188 (−1.072)	−0.170 (−1.042)	1.158*** (4.384)	−0.220 (−0.920)	−0.0951 (−0.568)

TABLE 4 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)
<b>Dependent variable: Log (provincial public investment)</b>						
Education graduate		-0.157 (-0.400)	-0.0967 (-0.264)	-0.0692 (-0.178)	0.0974 (0.249)	-0.0876 (-0.209)
Engineering graduate		0.367 (1.705)	0.424* (1.904)	1.474*** (3.848)	0.285 (1.110)	0.456* (1.840)
Former academic	1.962 (1.411)	1.250 (1.052)	1.028 (0.950)	2.190** (2.773)	-0.832 (-0.489)	0.968 (0.872)
Former contractor	-0.603** (-2.342)	-0.642** (-2.162)	-0.685** (-2.579)	-1.693*** (-4.269)	-0.515* (-2.043)	-0.722** (-2.590)
Former journalist	0.894** (2.653)	0.855** (2.451)	0.995** (2.843)	1.277** (2.511)	0.492 (0.721)	1.012** (2.180)
Former entrepreneur	0.264** (2.420)	0.575*** (3.791)	0.594*** (4.207)	0.603** (2.677)	0.568*** (4.032)	0.524*** (3.503)
Former farmer	0.500 (1.657)	0.837*** (3.148)	0.781** (2.650)	0.103 (0.213)	0.645*** (3.033)	1.096*** (3.391)
Former economist, banker, and accountant	0.412 (1.345)	0.623** (2.495)	0.581** (2.226)	0.430 (1.437)	0.328 (0.992)	0.562* (2.095)
Former governor	0.884* (2.109)	1.756*** (3.419)	1.707*** (4.055)	2.712*** (5.486)	2.197*** (4.001)	1.866*** (3.876)
Former undersecretary	-0.0974 (-0.166)	-0.102 (-0.207)	-0.133 (-0.271)	-0.350 (-0.634)	0.0471 (0.0623)	-0.296 (-0.559)
Former CEO	0.255 (1.333)	0.0535 (0.331)	0.0563 (0.308)	-0.197 (-0.954)	0.119 (0.800)	0.00912 (0.0501)
Foreign experience		-0.611*** (-2.928)	-0.596** (-2.872)	-1.453*** (-6.342)	-0.443 (-1.524)	-0.562** (-2.451)
Constant	101.4*** (3.198)	99.33*** (3.804)	98.69*** (3.705)	75.87* (2.038)	93.12*** (4.125)	89.45*** (3.462)
Observations	1206	1206	1206	882	882	1065
Number of provinces	67	67	67	49	49	61

(Continues)

TABLE 4 (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)
	<b>Dependent variable: Log (provincial public investment)</b>					
Sample	Full sample	Full sample	Full sample	Excluding East/South-East Anatolia	Excluding Aegean and Marmara	Excluding provinces with MP < 11

*Note:* Province-fixed effects and province-specific time trends are all controlled for in Models (1)–(6). Model (7) additionally includes year-fixed effects, and hence, removes the crisis and election year variables from regression. MP characteristics are measured by the share of provincial seats in the parliament. Base group for the levels of education and the areas of tertiary degrees is Bachelor's Degree in Other Areas, and for profession, Other Profession. Driscoll–Kraay *t*-statistics in parentheses.

\*\*\* $p < .01$ ; \*\* $p < .05$ ; \* $p < .1$ .

than other former professions. Finally, provinces that are strongly represented by MPs with foreign country experience are robustly associated with lower amounts of public investments. This finding may suggest that such MPs find politically motivated factors counter-productive and do not pursue pork barrel activities.

The regressions also demonstrate that average seniority is associated with higher amounts of public investments into an electoral district, but this effect is insignificant at conventional levels. This insignificance is likely to be because of province-specific time trends in the specification as they could capture some time variation in seniority. Once these trends are removed, average seniority becomes significant and positive (unreported). In addition, holding average seniority constant, age is estimated to be insignificant. More female representation in a district is associated with more allocations, but this effect is generally insignificant. This lack of significance may reflect very little variation in this variable due to the patriarchal nature of Turkish society.

Overall, this body of evidence constitutes a clear empirical support for the link between the MP characteristics and pork barrel engagement in Türkiye. This effect arises in addition to the economic factors prominent in public investment allocations such as provincial population. MP characteristics capture an additional group of drivers next to party-related factors determined at the national level, such as party leadership, the cabinet, or partisan and ideological ties. The underlying dynamics behind the MP-related activities are likely to be top-down and bottom-up pork barreling, which are likely to complement each other and are leveraged by electable MPs being rewarded as well as by the MPs' education (both the level and the area of the degree) and their prior public and private sector experience, which could stimulate informal connections and lobbying.<sup>30</sup>

## 6.7 | Additional endogeneity tests

One may be concerned that MP-related variables may present an endogeneity threat given possible selection problems in the nomination process (i.e., previous pork barrel records of the MPs and the simultaneous occurrence of the top-down and bottom-up approaches with the



same set of variables), province-related omitted variables, and/or reverse causality from public investments to certain MP characteristics. We now tackle these concerns step by step.

First, we adopt some sample variations with a view to addressing the endogeneity that is not isolated by province-fixed effects and province-specific time trends. Voter preferences are quite dispersed across Türkiye. While western provinces are more liberal, eastern provinces are relatively conservative. Large cities in the west host cosmopolitan voters due to huge migrant stocks.<sup>31</sup> Other provinces host voter profiles that may exhibit varying demographic factors, such as education, ethnicity, age structure; attitudinal and behavioral factors, such as access to political information, strength of partisanship, and feelings of civic duty; and physical factors, such as weather and the proximity to polling locations (Fowler et al., 2008).<sup>32</sup> In addition, in cities with large number of MPs, competition among the MPs could feature different dynamics than those in smaller cities. All these affect the parties' nominations of the MPs and/or the motivations of the MPs in pursuing public investments. Thus, we remove the provinces in east and south-east Anatolia (including the provinces of the Kurdish-dominated south-east) (Model 4), those in the Aegean and Marmara regions (Model 5), and those with fewer than 11 MPs (Model 6) in Table 4. Generally, all the results reported in Models 1–3 go through with these exercises. One notable finding is that when the conservative provinces in east and south-eastern Anatolia are removed from the sample (Model 4), additional characteristics indicating high-level education (such as being represented with MPs with medicine and law degrees or former academics) become significant while features indicating lower-level education (such as being represented by former farmers) become insignificant. This result signifies that MPs in more conservative regions are probably less educated than those in the rest of the country.

Second, we drop province-fixed effects and include the lagged dependent variable in the specification. This check is based on the assumption that province-related omitted variables could be time-varying rather than time-invariant (see Angrist & Pischke, 2009, ch. 5). One may argue that our 17-year time span may be too a long period to assume that some province-level characteristics influencing the public investment decisions stay fixed. The patterns of economic growth, industrial structure, and provinces' participation in international trade may differ over time, and some MP-characteristics may be related to these changes. From a different perspective, the model of regional investment may involve a lagged dependent variable because most projects would be undertaken over a period of more than one year. However, the counter argument is that it is unlikely that provinces are allocated investments based on their past allocations and that there are other underlying factors such as provincial population and GDP that determine the level of investments. In fact, past allocations may even work against further allocations to a province because the government is expected to ensure a reasonable spread of public investments in the country; so past allocations do not necessarily explain the current allocations. The results with lagged dependent variable instead of province-fixed effects are reported in Table 5. The coefficient of the lagged dependent variable is 0.588, significant at 1% level, indicating a relatively persistent provincial allocations over time. Some of the earlier results related to MP characteristics survive this exercise; notably the levels of education and some former professions are still prominent.<sup>33,34</sup>

Finally, a reverse causality problem may exist due to public investments influencing some MP characteristics. A range of legislator variables on the right-hand side suggest that the system-GMM estimation is a practical approach to address this concern. The advantage of the dynamic panel approach is that it enables not only addressing of general endogeneity issues related to MP characteristics but also controlling for deeper lags of the dependent variable, such as the second lag of log public investments. Our model instruments the MP characteristics

TABLE 5 Additional endogeneity tests.

	(1)	(2)
	<b>Dependent variable: Log (provincial public investment)</b>	
First lag of log (provincial public investment)	0.588*** (24.08)	0.382** (2.393)
Second lag of log (provincial public investment)		0.256* (1.908)
Log pop.	-0.127 (-0.544)	0.523 (0.509)
Log GDP	-0.119 (-1.050)	-0.454 (-1.100)
Prioritized	0.0687 (0.599)	0.0212 (0.0485)
Crisis year	-0.225*** (-4.826)	-0.167** (-2.412)
Election year	-0.0864* (-1.914)	-0.218*** (-2.730)
Female/male ratio	0.266 (0.856)	0.356 (0.633)
Avg. seniority	0.129** (2.277)	0.198 (1.270)
Average MP age	-0.00613 (-0.916)	-0.0328** (-2.004)
Primary + High school	-0.100 (-0.385)	0.750 (1.151)
Master-PhD degree	0.443*** (2.925)	0.716** (2.190)
Theology graduate	-0.464 (-1.589)	0.134 (0.136)
Law graduate	0.259 (1.091)	0.780 (1.329)
Economics graduate	0.122 (0.538)	0.477 (0.919)
Pol. sci. graduate	-0.304 (-0.979)	-1.027 (-1.460)

TABLE 5 (Continued)

	(1)	(2)
	<b>Dependent variable: Log (provincial public investment)</b>	
Medicine graduate	0.114 (0.475)	0.648 (0.933)
Education graduate	0.210 (0.799)	0.369 (0.635)
Engineering graduate	0.330 (1.394)	0.634 (0.955)
Former academic	-0.178 (-0.198)	3.394 (1.548)
Former contractor	-0.0725 (-0.301)	-0.419 (-1.045)
Former journalist	0.0852 (0.240)	0.534 (0.634)
Former entrepreneur	0.104 (0.767)	0.284 (0.948)
Former farmer	0.295 (1.055)	0.931* (1.666)
Former economist, banker, & accountant	0.560** (2.244)	0.282 (0.500)
Former governor	0.471 (1.019)	2.164* (1.772)
Former undersecretary	0.808** (2.245)	1.547** (2.025)
Former CEO	-0.289** (-1.966)	0.261 (0.691)
Foreign experience	-0.324 (-1.578)	-0.325 (-0.812)
Constant	4.752* (1.695)	-0.539 (-0.0480)
Observations	1139	1072
R-squared	0.799	
Number of provinces		67
Number of instruments		138

(Continues)

TABLE 5 (Continued)

	(1)	(2)
	<b>Dependent variable: Log (provincial public investment)</b>	
Province time trends	Yes	Yes
AR(1) <i>p</i> -value		0.018
AR(2) <i>p</i> -value		0.563
Sargan test <i>p</i> -value		0.134
Hansen's J Test <i>p</i> -value		0.774
Lag limits		3 to 4
Estimation method	OLS	System GMM

*Note:* The system GMM estimation includes province time trends as exogenous instruments (i.e., 'iv style' instruments), and instruments the MP-characteristics with the third and fourth lags of the differences and levels of MP-characteristics for the level and difference equations, respectively (i.e., "GMM style" instruments). Driscoll–Kraay *t*-statistics for Model 1 and robust *t*-statistics in Model 2 in parentheses.

\*\*\**p* < .01; \*\**p* < .05; \**p* < .1.

within the system-GMM setting, specifically, with the third and fourth lagged differences and levels of MP characteristics for the level and difference equations, respectively. We also use province-specific time trends as exogenous instruments (see Blundell & Bond, 1998). Presented in Table 5, the model passes several relevant diagnostic tests such as the second-order autocorrelation and overidentifying restrictions. The results show that MP characteristics including having a master or PhD degree and being formerly a governor or a farmer are robustly significant and positively associated with higher public investments even with the system-GMM estimation. In addition, average seniority and being formerly an economist/banker/accountant and undersecretary also appear to be positively associated with higher public investments across Models 1 and 2 in Table 5.

## 7 | CONCLUSIONS

Following a series of examinations centered on the United States, the theories of distributive politics have recently been applied to other countries. Common topics of analysis across both United States and non-US settings have included party- versus individual-based incentives in the pursuit of pork barrel activities, the link between electoral rules and pork barrel activity, partisan/ideological bias in the allocation of investments, and support for core versus swing voters in public investments.

This article investigates distributive politics in the context of Türkiye. Using an unusually rich panel data set that covers the detailed individual attributes of nearly 2000 MPs over the five legislative periods during 1987–2004, as well as an array of political and economic variables across 67 electorates, the article makes three important contributions to the literature. First, this paper is one of the first to analyze the pork barrel politics under a closed-list proportional representation (CLPR) electoral rule, which Türkiye implements. Several arguments posit that,

in contrast to other electoral rules such as the single-member district or open-list proportional representation, in which legislators have strong incentives to garner personal votes, the CLPR is associated with weak pork barrel activity due to party or leader domination in investment allocations and nomination of the MPs for elections. We hypothesize that the underlying motive of legislators in pursuing pork, that is, re-election, is not less prominent under the CLPR electoral rule. The paper utilizes the individual characteristics of approximately 2000 Turkish MPs in a model of provincial public investment to show how individual legislator characteristics may be associated with pork barrel across electoral districts. The second contribution of the paper is to explore government-related incentives and ideological ties in pork barrel. We examine the behavior of single-party versus coalition governments, right-versus left-wing dominated cabinets, and core versus opposition support in public investments. Finally, the analysis of Türkiye itself is important. Little is known in the academic literature about the parliamentary landscape and the legislator nomination process in Türkiye.

Controlling economic factors, political factors appear to be extremely important in the allocation of public investments into electorates in Türkiye. We obtain several conclusive results. First, the composition of legislator characteristics in an electorate, such as the level of education, area of tertiary degree, and former profession indicating various private and public sector experience, is documented to be significantly related to public investments into electorates. Thus, our hypothesis as to the presence of pork barrel activity under CLPR is supported by the data. Second, single-party (versus coalition) governments are found to make uniformly more investments across electoral districts. Third, a stronger right-wing (versus left-wing) representation in the cabinet results in more provincial investments across the country, but with proportionately more allocations made to right-wing constituencies. In addition, electorates with opposition constituencies are targeted with more allocations. Finally, politically fractionalized electorates and those with higher voter turnout rates attract higher levels of public investments.

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## DATA AVAILABILITY STATEMENT

Data is available on request from the authors.

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## ENDNOTES

- <sup>1</sup> See also Calvo and Murillo (2004), who explore the partisan ties in elections in Argentina, and Galasso and Nannicini (2015), who explore parties' candidate selection in Italy, where both countries implement the CLPR rule.
- <sup>2</sup> All provinces in Türkiye except Istanbul, Ankara, and Izmir correspond to a distinct electoral district. These three provinces have two–three electoral districts due to their large populations (and essentially for administrative ease of handling the elections). For the purposes of this paper, the electoral districts in each of those three provinces are merged into one, given that the economic variables such as GDP are only available for the province as a whole. Finally, our study includes all the 67 provinces that existed in Türkiye in 1987,

and excludes the 14 provinces that have been split from these 67 provinces during the sample period. As of 2004, the 67 provinces hosted 510 of the 550 (92.7%) legislator seats.

- <sup>3</sup> See Mayhew (1974), Ferejohn (1974), and Weingast et al. (1981). Barry (1965) argues that “strong” committee members or committee chairmen are prominent pursuers of pork barrel.
- <sup>4</sup> Cox and McCubbins (1986); Dixit and Londregan (1996); Levitt and Snyder (1997); Stein and Bickers (1995).
- <sup>5</sup> Another theory which is highly related to pork barrel politics is the opportunistic political business cycles theory. Supporting this link, Schady (2000) and Kwon (2005) find that public expenditures increased in pre-election periods in Peru and South Korea, respectively.
- <sup>6</sup> A large body of literature connects electoral rules to economic outcomes. See Milesi-Ferretti et al. (2002) on public spending, Lizzeri and Persico (2001) on public goods, and Chang (2005) on corruption.
- <sup>7</sup> The SMD system is often associated with a majoritarian electoral system and MMD with a proportional representation system.
- <sup>8</sup> A further dimension is introduced by Golden and Picci (2008), who argue that in the SMD system, if the governing parties are strong in a locality, marginal districts will get more public expenditures, whereas if they are weak, safer districts will receive more. See also Herron (2002) for an earlier separation along these lines.
- <sup>9</sup> See Oates (1972), Castells and Solé-Ollé (2005), and Cadot et al. (2006).
- <sup>10</sup> The possibility of MPs behaving against the party lines under the PR rule has been raised by Denmark (2000), Herron (2002), and Haspel et al. (1998), though in relation to mixed systems.
- <sup>11</sup> Such influential MPs could be nominated in a different province than where they were nominated in the previous election cycle and/or far from their hometowns.
- <sup>12</sup> See Galasso and Nannicini (2017) who cogently illustrates the patterns of candidate selection in majoritarian vs proportional systems and identifies parties’ possible choices in selecting high- and low-quality candidates.
- <sup>13</sup> Another reality is that some MPs attract a block of votes due to their personal reputation so that they are “bought out” by the party center via public investments into their districts. For example, in the context of Türkiye, the MPs of the south-eastern provinces tend to exhibit this feature more often. These legislators generally tend to be the leaders of the prominent clans in the semi-feudal region. Another closely related feature of the CLPR system is the MPs’ tendency to change parties very frequently. The presence of too many parties in this system provides the MPs with opportunity to switch parties to maximize their objective functions. These points have also been verified by our anecdotal evidence in the case of Türkiye.
- <sup>14</sup> See the recent evidence by Hessami (2018) who, using German municipal-level data, finds that elected mayors have stronger electoral incentives than do appointed mayors in that they attract more grants in election years.
- <sup>15</sup> Another reason for MPs having greater chances of re-nomination is having fully obeyed the party discipline and/or being loyal (see Galasso & Nannicini, 2015), but this does not necessarily preclude pork barreling.
- <sup>16</sup> We have obtained anecdotal evidence supporting this point through an interview with a very high-ranking official of the ruling AKP in Türkiye, who had significant influence on the party list in the 2007 and 2011 elections. His views were also corroborated by three other opposition MPs (The transcripts from interviews are available upon request.) More formally, of the 177 MPs elected in 2002 of the main opposition party, center-left CHP, only 53 were re-elected in 2007 of the 112 seats that the party secured. Over our sample period, of the 52 MPs of the center-right DYP elected in 1987, only 16 were reelected in 1991, when the party obtained a total of 177 seats. Likewise, of the 99 MPs of the center-left SHP elected in 1987, only 27 were reelected in 1991, when the party obtained 88 seats. The MP profiles of the other parties that were represented in the parliament in any two subsequent periods are similar.
- <sup>17</sup> Golden and Picci (2008) employ average seniority, the ratio of more to less educated, the male-to-female ratio, and the ratio of professional politicians to others to measure individual legislator characteristics.



- <sup>18</sup> We have eliminated professions such as lawyer, doctor, teacher, priest, and engineer, because they are directly related to the area of the bachelor's degree, that is, law, medicine, education, theology, and engineering, respectively (correlations range between 0.70 and 0.90). Multicollinearity among the bachelor's degree areas and professions otherwise utilized in our models appears to be low, with correlations generally hovering around 0–0.10.
- <sup>19</sup> This experience generally includes a master's/PhD degree abroad, but it also includes exploratory visits that are long enough to be deemed worthy of mention in the MPs' CVs.
- <sup>20</sup> Econometrically speaking, a range of MP characteristics in the specification helps us proxy what would normally be omitted variables due to unobserved MP traits such as ability, entrepreneurship, and risk-taking attitude.
- <sup>21</sup> We acknowledge that other actors including municipal mayors may be involved in provincial investment allocation decisions too, but these decisions are difficult to separate from allocations made to local governments. Since laws applying to local government transfers are different, and in view of the conceptual framework developed in this paper, we focus on only transfers to certain geographic constituencies by national actors.
- <sup>22</sup> However, the downside of the fixed effects approach is that it ignores the cross-province variation. We refer to the nature of pork barreling here: projects are attracted to a specific geographic constituency (Stein & Bickers, 1995). Hence, the relationship between public investments and political factors *within* a province over time is a more relevant variation in this setting.
- <sup>23</sup> The tests are based on Pesaran, Frees, and Friedman-type tests and uniformly indicate the presence of spatial correlation in the models. Failing to account for the problem would provide overly-optimistic standard errors.
- <sup>24</sup> Consistent data for province-level investment are available in the SPO's public investment reports for the period 1980–2004. However, province-level GDP data are only available after 1987, limiting our analysis to the period 1987–2004. The figures have been converted into real investments using the 1987 GDP deflator.
- <sup>25</sup> An additional advantage of starting the sample in 1987 is to avoid the influence of the military regime following the 1980 coup. Indeed, the military top brass in Türkiye vetoed certain parties and candidates from participating in the 1983 elections, but this influence wound down by 1987. Nonetheless, we acknowledge that the military continued to have latent but significant influence in Türkiye, especially on national politics, in the 1990s.
- <sup>26</sup> The feature of being a prioritized development province changes over time.
- <sup>27</sup> In a more general context, Galasso (2014), using data for 25 OECD countries over the 1978–2008 period, finds that right-wing (left-wing) governments stop (start) privatizing in times of crises whereas center-wing governments liberalize and trim unemployment benefits.
- <sup>28</sup> One might have expected that the election period features a greater increase in transfer and personnel payments that is in line with the opportunistic political business cycles theory. However, three of the five elections in the study period were followed by economic and financial crises, meaning that the political business cycle theory may not work here, so the election year effect is insignificant.
- <sup>29</sup> The Turkish political landscape features more right-wing strongholds than left-wing. The former are typically in Central and Eastern Anatolia (such as Konya, Kayseri, Erzurum, Malatya, and Yozgat provinces), while the latter are in Western and North-Eastern Türkiye (including provinces like İzmir, Muğla, Eskişehir, and Edirne). Some Kurdish provinces (such as Bitlis and Şanlıurfa) can also be considered right-wing strongholds, but this designation depends on which party the local feudal leader leans towards during an election.
- <sup>30</sup> As our sample excludes 14 provinces that were split from 67 provinces during the sample period, one may be concerned that any long-serving MP who previously served in one of the 67 provinces may have served in one of the 14 new provinces in the sample period. If the influence of these MPs shifted away from older to newer province, our estimations may neglect the shifting pork barrel allocation efforts away from their older

province. We consider in detail the 103 MPs who served in the 14 new provinces during 1987–2002, and identify only 7 MPs who also served in the 67 provinces before the splits. The larger provinces that were split were Niğde, Gümüşhane, Zonguldak, and Kars, and these are still relatively smaller provinces in the Turkish context. These allay the concerns for our results.

- <sup>31</sup> Türkiye's voter profile is generally 70% right-wing and 30% left-wing. In the *political sense*, right-wing parties in Türkiye have commonalities with Democrats in the United States or the Labor Party in the UK, promoting outward-oriented politics, while left-wing parties generally advocate nationalist views. In the *economic policy sense*, the right- versus left-wing definition in Türkiye generally matches that of the West, in that right-wing parties are more pro-capital, liberal, and reformist, and left-wing parties are more pro-labor, statist, and redistributive. It is acknowledged that these distinctions may have been blurred over time.
- <sup>32</sup> One prominent issue with voter turnout in Türkiye is related to the Kurdish southeast, which has long been crippled by separatist political and military struggles. There are sometimes initiatives to boycott the elections. In addition, the separatist struggle in the 1990s may have led to intimidation of some prominent individuals to run in elections despite their wishes and interests.
- <sup>33</sup> In unreported results, we find that political factors also survive this exercise, such as leader, provincial representation, and targeting the main and smaller opposition based on partisan ties and targeting the right-wing strongholds based on ideological ties.
- <sup>34</sup> To test the limits of the robustness of our specification, we isolate further national shocks pertaining to each year by including the year-fixed effects (while keeping province-fixed effects and province-specific time trends) in the estimation (unreported). Most MP-related results remain significant in this estimation, while provincial population becomes insignificant.

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## APPENDIX

Table A1

TABLE A1 Variable names and definitions.

Variable name	Variable definition
<b>EF: Economic factors</b>	
Log population	Log population of the province
Log GDP	Log GDP of the province
Prioritized development province	1 if a development priority province, otherwise 0
Crisis year	1 if the country is in an economic or financial crisis (1989, 1991, 1994, and 2001), otherwise 0 (national variable)
Election year	1 if the country has election (1987, 1991, 1995, 1999, and 2002), otherwise 0 (national variable)
<b>LEADER: Leaders</b>	
Prime minister seat	1 if the prime minister represents the province, otherwise 0
Minister seat	Number of ministers representing the electoral district
Head of the planning and budget commission	1 if the head of the planning and budget commission represents the province, otherwise 0
<b>GOVT: Type of government</b>	
Coalition government	1 if the government is a coalition government, otherwise 0 (national variable)
Right-wing government	Share of ministries held by right-wing parties in the government (national variable)
Left-wing government	Share of ministries held by left-wing parties in the government (national variable)
<b>PR: Provincial representation</b>	
Representative strength of a party in a province	Party's vote share in the province in the previous elections
Right-wing representation in a province	Total vote share of right-wing parties in the province
Left-wing representation in a province	Total vote share of left-wing parties in the province
Voter fractionalization in a province	Herfindahl index obtained from vote shares
Voter turnout rate	The rate of participation in previous elections
<b>MPC: Individual MP Characteristics</b> ( <i>all the MPC characteristics below except the first three are utilized in the regressions as "share in total number of MPs" to represent the composition of MPs in the province</i> )	
Female/male ratio	Ratio of female to male legislators in the province

(Continues)

TABLE A1 (Continued)

Variable name	Variable definition
Average seniority	The number of times an MP has been re-elected by a given legislative period (considering also the individual re-election histories of the MPs before the sample period), as average of the MPs in the province
Average age	Average MP age in the province
Education level	Primary or High School Graduate, University Graduate (base in the regressions), Master's/PhD Graduate
Area of tertiary degree	Theology, Law, Economics, Political Science, Medicine, Education, Engineering, Other (base in the regressions)
Former profession	Former Entrepreneur (businessman, merchant, self-employed), Academic, Contractor, Journalist, Farmer, Economist/Banker/Accountant, Governor, Undersecretary, CEO, Other (base in the regressions)
Foreign experience	1 if been abroad for reasonably long, otherwise 0