THE IMPACT OF INTEREST GROUPS ON GOVERNMENT SIZE—REGIONAL EVIDENCE FROM TURKEY

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Abstract: This study is aimed to investigate the regional pressure groups' effect on the government size in Turkey. According to the public choice theory, elections, political parties, interest and pressure groups, and bureaucracy significantly affect the public production process. Among these actors, pressure and interest groups directly affect variables such as economic growth and public expenditures. In this study, panel data analysis was used to observe the regional effect. The research data set covered 81 provinces of Turkey and the period between 2006 and 2018. According to the results, it was found that interest and pressure groups increase the public expenditures in the less developed regions in Turkey. These results are consistent with the empirical and theoretical studies. For this reason, the study has an important contribution to the literature. This study offers significant conclusions that public economic policies might be under the influence of interest and pressure groups. Even if stated that the results of this study might have many economic, demographic, social, and political reasons regarding Turkey, in the context of public choice theory, it could be seen as a significant indicator of not using public expenditure policies as efficient instruments. This situation shows that public resources are not used efficiently in Turkey and the government has a negative effect on the economy. To eradicate this negative effect, governments coming to power in the future ought to produce economic, political, and social policies in order to decrease the regional differences dramatically in Turkey.

Keywords: regional studies; pressure groups; public expenditure; public choice theory

Introduction

Interest groups can affect political process by various methods like lobbying, persuasion, influence on public opinion, threat, collective bribery, bribery, sabotage, supporting other party, direct movement, lockout, etc. Interest groups generally demand advantages maximizing their interests from the political decision-making process. The benefits that interest groups obtain from the political management in return for their demands can cause various economic effects. One of these effects is the growth in the public sector. Interest groups can affect legislation and legal regulations by contributions to political campaigns and lobbying activities for their interests. Nevertheless, they have direct effects on the expenditures included in the budget and realized in

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the areas like transportation, public works, environment, etc., while they do not have direct effects on public sector size (Mueller, 2003). In the analysis of public choice theory, miscellaneous approaches have been developed after a classic majority rule, and public sector size evaluations of Tullock (1959) was considered as a pioneer study. One of these approaches is the effect of interest groups. Olson (1965) affiliates interest groups to economic growth, which revives the question of the role of interest groups on public sector size. The relationship between interest groups and public sector size was first considered by McCormick and Tollison (1981). Under the assumption that all government activities are made up of wealth transfers, they assert that the increase in population causes the increase of free-riding and hence there is a positive relationship between population and public sector sizes, and thus, interest groups are more successful in realizing these transfers by using the government. McCormick and Tollison (1981) made a limited assessment, and the first test between interest groups and public sector size was realized by Mueller and Murrell (1986). Drawing attention to the fact that interest groups have a potential role in public sector size, they (1986) state that political parties provide privileges to interest groups in return for their support. Thus, the privileges interest groups demand from the government cause tax incomes and expenditures to expand. The hypothesis that the relative size of government has a positive relationship with the number of organized interest groups was mainly tested in their studies. Offering empirical proofs related to the interest groups' effect on the public sector size, the authors (1986) define a political process that political parties privilege interest groups in return for their support. They get the empirical result that public sector grows more when the subject of these privileges is about the public goods that interest groups desire. Considering empirical test for the year 1970 in the cross-sectional sample of the member countries of Organization for Economic Co-operation and Development (OECD), they conclude that the number of organized interest groups in a country has a positive and significant effect on the relative size of the public sector (Mueller, 2003).

Based on the study of Olson (1965), the studies in the literature focus on the nature of the relationship between interest groups and economic growth. The results obtained from the studies that analyzed the effect of interest groups on the economic growth are quite different. For instance, Dye (1980), Choi (1983), Weede (1986), Heckelman (2000), Coates and Heckelman (2003), Horgos and Zimmermann (2009), Coates, Heckelman, and Wilson (2011), Dincer (2012), and Cole (2015) determine the negative effect of interest groups on the economic growth. However, the results obtained by Knack and Keefer (1997) and Knack (2003) show that the effect of interest groups on economic growth is positive. There are lots of studies in the literature showing the effect of interest groups on public sector size besides the study of Mueller and Murrell (1986). Pressure and interest groups are added to the empirical analyses in the studies by considering them in different manners. The studies in the literature generally determine that pressure and interest groups have a positive effect on the public sector size (McCormick & Tollison, 1981; Mueller & Murrell, 1986; Fiorino & Ricciuti, 2009; Yamamura, 2012). The relationship among variables in the studies like the ones of Bacot and Dawes (1986), Gray and Lowery (1988), Newmark and Witko (2007), Randolph and Tasto (2012), and Holyoke and Cummins (2019), determine that interest groups have a positive effect on public expenditures in the USA for the period 2006–2015. Similarly, Randolph and Tasto (2012) conducted a spatial analysis for the states within the USA and reached the conclusion that public expenditures are crucial in the formation of special interest groups through states. From this perspective, the effects of interest groups on public expenditures in Turkey have been examined. And this is the first study carried out for Turkey. Hence, the study has an important contribution to

the literature. Moreover, there is a limited number of studies examining this phenomenon on the regional level. This is one of the reasons why this study also has an important contribution to the literature.

In this study, the effect of interest groups on public expenditures has been investigated on the level of 81 provinces in Turkey for the period 2006–2018 within the scope of the literature stated above. In addition, it is aimed to determine the rent-seeking efforts of pressure and interest groups in Turkey in terms of public choice theory.

Data and methodology

In terms of public choice theory, whether the effects of activities of states on the economic field are positive or negative has been discussed until today. According to the maximization principle, the interest-maximization motive of voters, political parties, bureaucracy, and interest and pressure groups involved in the public economic production process cause ineffectiveness in the public economy. The current study examined the influence of pressure groups on public expenditures at the regional level in Turkey in the period 2006–2018 using panel data analysis. The research data set covers 81 provinces in Turkey. The regional public expenditure data were obtained from the Republic of Turkey Ministry of Treasury and Finance (2021), and the number of associations in provinces was obtained from the Republic of Turkey Ministry of Interior (2021). Regional per capita income included as a control variable in the analysis was obtained from Turkish Statistical Institute (TÜİK, 2021). Regional per capita public expenditures and regional per capita income data were calculated using the GDP deflator. Moreover, the logarithms of the variables have been included in the analysis. Gauss 10 (Aptech Systems, 2009), Stata 12 (StataCorp LLC, 2011), and GeoDa 1.18 (The University of Chicago Campaign Inquiry & Impact, 2021) programs were used in the analysis process.

Numerous studies in the literature have aimed to measure the effect of interest and pressure groups on public expenditures. Most of these studies were realized as surveys. In this study, based on the research of Mueller and Murrell (1986), the following model was estimated to see the effect of the interest and pressure groups on public expenditures:

$$rpexppc_{it} = \beta_0 + \beta_1 rgdppc_{it} + \beta_2 pressure_{it} + \varepsilon_{it} \tag{1}$$

In the estimation model created, i shows the cross-sectional units (81 provinces), and t shows the dimension of time (2006–2018). In the model, the variable $rpexppc$ represents public expenditures per capita at the regional level, while $pressure$ represents the number of associations at the provincial level as a proxy of interest and pressure groups. The $rgdppc$ variable, which is included as a control variable in the model created, represents the per capita income at the regional level. Interest and pressure groups are classified as associations, trade unions, and political parties that can represent interest and pressure groups in Turkey. This study focuses on the effects of pressure groups on public expenditures at the regional level. Among these three structures, the obtained data are the regional numbers of associations in Turkey. Therefore, this study was conducted on associations as a representation of the interest and pressure groups. The data for the period 2006–2018 constitute the time limitation of the study. Because the statistics of interest groups in Turkey, such as trade unions or foundations is not published, the number of associations is used as proxy. The number of associations between 2006 and 2018 was published at the regional level, and these years are

considered in the study. As of 2021, the number of active associations in Turkey is 122,303, the number of active unions is 509, and there are 108 political parties (Republic of Turkey Ministry of Interior, 2021). The distribution of associations according to their activity fields in the period 2006–2018 is as follows: occupational and solidarity associations (32%), sports and sports-related associations (23%), religious services (15%), education and research (5%), culture, art, tourism (5%), humanitarian aid (4%), sustentation of social values (2%), individual teaching and social development (2%), environment and wildlife animal conservation (2%), zoning, urban planning and development (1%), rights and advocacy (1%), disability associations (1%), thought-based associations (1%), and other associations (6%) (Republic of Turkey, Ministry of Interior, 2021). These data show that interest and pressure groups are quite developed in Turkey. Hence, the primary motivation of this work is to determine whether the interest and pressure groups increase Turkey's economic activity. Based on Olson's hypothesis, many studies in the literature have suggested that interest groups' numbers will slow the economic growth in terms of public choice theory. From a different viewpoint based on public choice theory, this study empirically investigated the interest and pressure groups' rent-seeking activities by influencing state organizations.
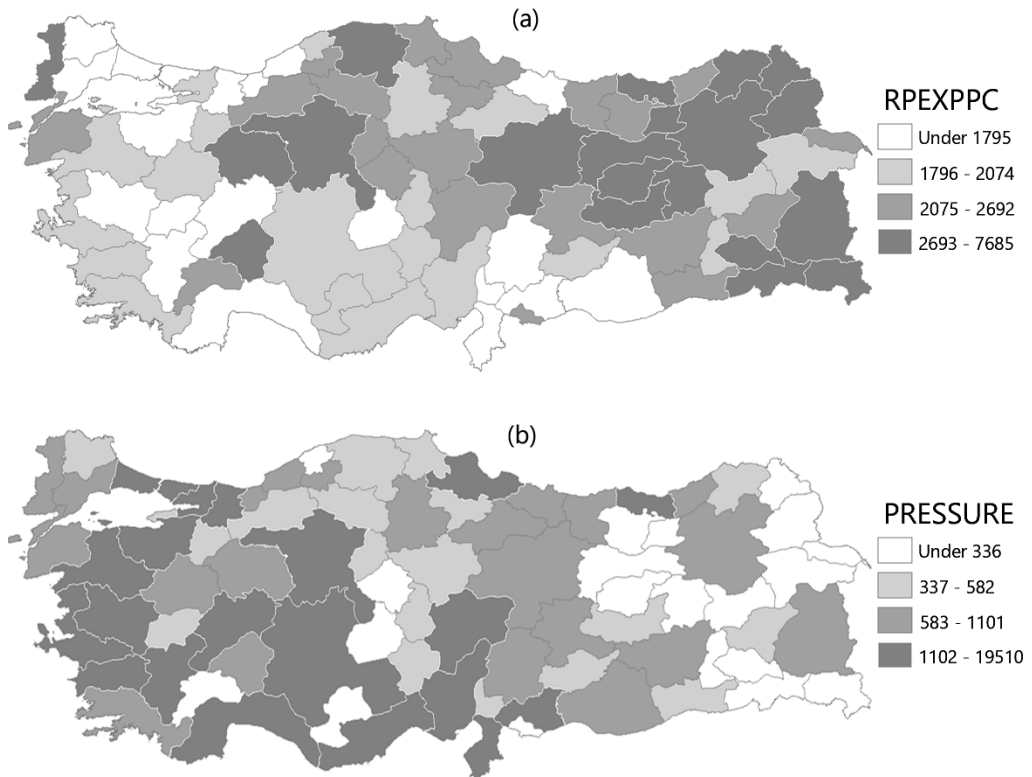

Figure 1. Spatial distribution of per capita public expenditures (a) and number of pressure groups (b).

Figure 1 shows the regional division of per capita public expenditures and the number of associations in the provinces in Turkey. The distribution map shows that public expenses are concentrated in Turkey's eastern regions. Similarly, the number of associations in the provinces also

shows a density in particular regions of Turkey. The distribution maps have determined the direction of the econometric method used in the analysis. Several reasons have influenced the shape of the distribution maps. First, the income level in Turkey is concentrated in certain regions. For example, nearly 60% of the national income in Turkey is recorded in Istanbul and the neighboring provinces (TÜİK, 2021). Not only demographic variables, but also economic variables, such as investments, public expenditures, and tax incomes are concentrated in these regions. This situation brings many special disparities economically, socially, and politically. Considering regional differences, the Ministry of Industry and Technology classified the 81 provinces in the analysis as less developed and developed regions. Accordingly, the socio-economic development of the provinces is ranked into six categories (Acar, Kazancık, Meydan, & Işık, 2019). In this study, the first three ranks in this category have covered the developed provinces, and the provinces in the following three ranks are considered less developed. Table 1 summarizes the statistics for the variables used in econometric models. It can be seen that the average of public expenditures in less developed regions is higher than in the developed areas. When considering the averages, associates are observed to show more activity in the developed regions.

Table 1

Descriptive Statistics of the Variables Used in the Econometric Analysis

Less Developed Regions					
Variables	Observed	Mean	Standard error	Minimum	Maximum
rpexppc	572	2,508.16	1,688.39	502.60	14,190.02
rgdppc	572	12,348.01	6,012.69	3,051.16	33,211.92
pressure	572	449.98	285.80	60	1,537.00
Developed Regions					
Variables	Observed	Mean	Standard error	Minimum	Maximum
rpexppc	481	2,068.61	1,322.60	503.99	11,381.32
rgdppc	481	20,397.05	10,034.34	6,446.61	66,573.36
pressure	481	1,988.92	3,302.11	243	23,364.00

The empirical section of the study comprised three parts. First of all, the cross-sectional dependences of the variables used in the analysis were determined by the CDLM$_{adj}$ test developed by Pesaran, Ullah, and Yamagata (2008). The variables' stationarity levels were determined by the CADF test, which is sensitive to cross-sectional dependence, introduced by Pesaran (2007). Before choosing the cointegration test between variables, the cointegration coefficients' homogeneity was determined by Pesaran and Yamagata (2008) Delta Test. In the next stage of the analysis, the long-term relationship between variables was determined using the Durbin-Hausman Cointegration Test developed by Westerlund (2008). Finally, the cointegration coefficients were estimated with the augmented mean group model [AMG] estimator considering the cross-sectional dependence and heterogeneity presented by Eberhardt and Bond (2009). Variables' cross-sectional dependencies in the panel data analysis cause cross-sectional shocks to each other and prevent the estimates from being consistent and efficient. When the cross-sectional averages differ from zero in the tests determining the cross-sectional dependence, it causes biased results. CDLM$_{adj}$ test of Pesaran et al. (2008) solved this problem by adding variance and mean to the test statistics. The *LM$_{adj}$* test statistic with corrected deviation is shown in the following equation:

$$LM_{adj} = \sqrt{\frac{2}{N(N-1)} \sum_{i=1}^{N-1} \sum_{j=i+1}^{N} \frac{(T-k)\hat{\rho}_{ij}^{1} - \mu_{Tij}}{v_{Tij}}} \qquad (2)$$

where μ_{Tij} is the average and v_{Tij} represents the variance. According to the CDLM$_{adj}$ test results, it is decided whether there is cross-sectional dependence among variables and cointegration equations or not. The Delta Test of Pesaran and Yamagata (2008), which determines the homogeneity of variables' slope coefficient in the cointegration equation based on Swamy test statistics, is calculated as follows:

$$\tilde{\Delta} = \sqrt{N((N^{-1})S^{-} - k)/2k} \sim X k^2 \qquad (3)$$

$$\tilde{\Delta}_{adj} = \sqrt{N((N^{-1})S^{-} - k) / v(T, k)} \sim N(0,1) \qquad (4)$$

In the Equation 3 and Equation 4, *N* is the cross-section dimension, S represents the Swamy test statistics and k is the number of explanatory variables. According to the Delta Test statistics, if the null hypothesis (slope coefficients are homogeneous) is rejected, the slope coefficients are decided to be heterogeneous. In this study, the existence of long-term relationships between variables was determined by the Durbin-Hausman Cointegration Test, which considers the heterogeneity of the slope coefficients and the cross-sectional dependence. This test is also applicable to variables with different degrees of integration and also takes into account both heterogeneity and homogeneity, and allows the calculation of resistive bootstrap probability values in the case of cross-sectional dependence in the cointegration model. In the last part of this study, cointegration coefficients were determined with the augmented mean group model estimator. The AMG estimator, which is robust for cross-sectional dependence and also produces heterogeneous and homogeneous panel results, is modeled as follows.

$$y_{it} = \beta_i' x_{it} + \mu_{it} \qquad \mu_{it} = \alpha_i + \lambda_i' f_i + \varepsilon_{it} \qquad (5)$$

$$x_{mit} \pi_{mi} + \delta_{mi}' g_{mt} + p_{1mi} f_{mt} + \dots + p_{nmi} f_{nmt} + v_{imt} \qquad (6)$$

$$m = 1, \dots, k \qquad and \qquad f_{.mt} \subset f_t \qquad (7)$$

$$f_t = Q' f_{t-1} + \varepsilon_t \qquad and \qquad g_t = K' g_{t-1} + \varepsilon_t \qquad (8)$$

In the equations, x_{it} is the vector of observable variables. Besides, the common factor set, including group-specific fixed effects, α_i and country-specific factor loadings λ_i are used in the composition of the f_t set. The AMG estimator takes into account common factors and common dynamic factors in the series. AMG estimator can provide both country-specific and panel overall estimates.

Results and discussion

In this study, the effect of interest and pressure groups on public expenditures at the regional level was examined by using the panel data analysis method. The analysis consisted of three steps. First,

the stationaries and cross-sectional dependences of the variables used in the analysis were determined. In the second step, the homogeneity of the slope coefficients of the variables and the cross-sectional dependency of the models were tested, and the cointegration test was used to reveal the existence of long-term relationships between the variables. In the third step, the long-term coefficients of the variables were determined on the panel's overall and at the regional level. In the panel data analysis, the stationarities of variables have significance similar to time series. The stationarity tests of the variables vary according to the cross-sectional dependency of the variables. Therefore, the cross-section dependencies of variables were determined with Pesaran's (2004) CDLM test. The test results summarized in Table 2 show all the variables used in the analysis are cross-sectional dependencies. Therefore, the stationarities of variables were determined by the Pesaran's (2007) CADF test. The second-generation unit root test results, which considered the cross-sectional dependency, are also summarized in Table 2. According to the test results, it was determined that all the variables became stationary in their first differences.

Table 2
Panel Unit Root and Cross Section Test Results

Less Developed Regions									
Variables	Constant	Trend	Variables	Constant	Trend	CDLM		$CDLM_{adj}$	
						Statistics	*p*-value	Statistics	*p*-value
rpexppc	−2.037 (0.027)	−2.288 (0.433)	*Δrpexppc*	−3.417 (0.000)	−3.474 (0.000)	223.7037	.000	253.3637	.000
rgdppc	−2.169 (0.003)	−2.286 (0.438)	*Δrgdppc*	−3.229 (0.000)	−3.288 (0.000)	256.9609	.000	255.1276	.000
pressure	−2.043 (0.025)	−2.236 (0.558)	*Δpressure*	−3.042 (0.000)	−3.628 (0.000)	255.1970	.000	221.8704	.000
Developed Regions									
Variables	Constant	Trend	Variables	Constant	Trend	CDLM		$CDLM_{adj}$	
						Statistics	*p*-value	Statistics	*p*-value
rpexppc	−2.188 (0.005)	−2.375 (0.265)	*Δrpexppc*	−3.184 (0.000)	−3.096 (0.000)	214.9092	.000	213.3675	.000
rgdppc	−2.008 (0.054)	−2.275 (0.467)	*Δrgdppc*	−3.243 (0.000)	−3.408 (0.000)	216.2676	.000	214.7260	.000
pressure	−2.098 (0.018)	−1.776 (0.996)	*Δpressure*	−2.826 (0.000)	−3.436 (0.000)	195.4920	.000	193.9503	.000

Note. Significance level $p < 01$.

As the variables became stationary in their first differences, the cointegration phase of the analysis was initiated. Cointegration tests selections depend on the cross-sectional dependency and homogeneity among the variables in the empirical analysis. The test results showing the models have cross-sectional dependence and the slope coefficients are heterogeneously summarized in Table 3. In the next part of the analysis, it is necessary to choose the cointegration test, considering the heterogeneity in the cross-section dependence and slope coefficients. Therefore, in addition to considering the cross-sectional dependency, cointegration was estimated with Durbin-Hausman Cointegration Test used where the variables' slope coefficients were both homogeneous and heterogeneous (Westerlund, 2008). Cointegration test results are also summarized in Table 3. Since there was a cross-sectional dependency in the model, the bootstrap probability value in the cointegration test was interpreted. Besides, since the slope coefficients of the model were heterogeneous, G*t* and G*a* statistical values have been taken into consideration. Cointegration test

results showed a cointegration relationship between the variables. Cointegration test results showed a long-term relationship between the interests and pressure groups' volume and public expenditures in Turkey in developed regions and less developed regions.

Table 3
Cross-sectional Dependence, Homogeneity and Cointegration Test Results

		Statistics	p-value
Less Developed Regions			
		Statistics	p-value
Homogeneity	Delta Tilde	4.645	.000
	Delta Tilde$_{adj}$	5.296	.000
Cross Section Dependency	CDLM$_{adj}$	44.142	.000
Developed Regions			
		Statistics	p-value
Homogeneity	Delta Tilde	3.593	.000
	Delta Tilde$_{adj}$	4.097	.000
Cross-Section Dependency	CDLM$_{adj}$	43.392	.000

Cointegration Test Results

	Statistics	z-value	p-value	p-value (Bootstrap)
Less Developed Regions				
Gt	−1.761	−2.401	.008	.000
Ga	−7.317	−1.811	.035	.000
Developed Regions				
Gt	−1.242	0.808	.790	.000
Ga	−6.639	−0.907	.182	.000

Note. Significance level $p < .01$

After determining the long-term cointegration relationship between the series, the cointegration coefficients were estimated. In this study, the AMG estimator developed by Eberhardt and Bond (2009), which considers the cross-sectional dependence and heterogeneity and also can calculate both the panel's overall and country-based coefficients, was used. Table 4 summarizes the AMG coefficient results across the panel for developed and less developed regions.

Table 4
Long-run cointegrating coefficients (AMG)

Variables	Coefficient	Standard error	t-statistics	Obs.	Provinces
Less Developed Regions					
rgdppc	0.1336***	0.0436	3.06	572	44
pressure	0.1330**	0.0753	1.77		
Developed Regions					
rgdppc	0.1198**	0.0555	2.16	481	37
pressure	−0.054	0.1115	−0.49		

Note. The symbols *, **, and *** indicate significance at the 10%, 5%, 1% respectively; Obs. = Observation.

Augmented mean group model estimation results have shown that pressure groups positively affect public expenditures in less developed regions at the 5% significance level. As noted in the earlier distribution maps, there are considerable differences in public expenditures and other economic variables at the regional level in Turkey. The same result could not be obtained for

developed regions. Moreover, it is seen that pressure groups in developed regions have a negative, but statistically insignificant, effect on public expenditures. This result is consistent with the results obtained in the study of Mueller and Murrell (1986), which is a pioneering study in the literature. The main feature distinguishing this study from other studies in the literature is that this is the first study measuring the effects on developed and less developed regions of Turkey. The results obtained in this study are also consistent with the study aims. In terms of public choice theory, interest and pressure groups can be stated to operate in their favor and strive to gain rents, especially in the less developed regions. These results also overlap with the theoretical background. Parallel to the results obtained by the same authors (1986), this study in Turkey has also revealed that interest and pressure groups impact the state's economic activity. The results obtained in the study outline that future literature studies should be carried out by considering the regional development levels. On the other hand, it is seen that the *rgdppc* variable included in the model as a control variable has a positive effect on public expenditures in both less developed and developed regions.

Conclusion

Public choice theory has become popular after 1950s and it is an approach showing state activities as inefficient. Economic activities of the states have been discussed for centuries, both theoretically and empirically. In today's world, developed economic systems prefer the economic activities based on free market. However, it can be stated that maintaining neutral state approach suggested by classical economic theory is difficult to be used today. The reason is that most of the states are engaged in economic activities in miscellaneous areas by accepting the importance of welfare and development indicators. For instance, states do not prefer to stay not only as regulatory, but they also want to be a producer in education and health sector due to their positive externalities. Despite these situations, according to public choice theory, the view that economic activities of states are inefficient is prevalent. This theory attributes the inefficiency to the maximization motives of voters, political parties, interest groups, or bureaucracy. Similar results have been achieved in most of the studies in the literature. Within this mechanism, interest groups affect the economic activities directly and indirectly. Besides this, some studies show that interest groups try to rent seeking activities and thus affect economic activities. According to government failure theory developed within the scope of public choice theory, various factors cause inefficiency in the political process, and hence, the government failure emerges. The factors such as special interest motivation of politicians, political myopia of political power, pork-barreling, failure in political competition, the inability of intra-party democracy, bureaucratic inefficiency, the problem of political ethics, median voter theorem, the inability in eradication of market failure, the difficulties in efficiency evaluation of public goods and services supply, imperfect information of voters, the inattention of voters, political myopia of voters, nondisclosure in voters' demand, fiscal illusion, and rent-seeking activities of interest groups trigger the government to fail. The interests that interest groups as one of the fundamental actors in political processes have, as well as the economic efficiency these interests affect, are the subject of lots of scientists' studies. In this study, the aim is to show whether interest groups increase public sector size or not. From this perspective, the effect of interest groups on public expenditures in the period 2006–2018 in Turkey is tested on the regional level (81 provinces) by using panel data method. This way, whether interest groups do rent-seeking activities or not is determined at the regional level.

Stationary levels and cross-sectional dependence of variables used in the study have been determined in this study for the first time. Since income and other variables at the regional level are concentrated in some areas, the areas are added to the analysis by dividing them into two parts as developed and less developed regions. While long-term relationship between variables is determined with Durbin-Hausman Cointegration Test, the direction of long-term coefficients is determined with AMG method developed by Eberhardt and Bond (2009). The analysis has determined that there is a long-term relationship between the number of interest groups and public expenditures at the regional level in Turkey. The data obtained for the developed areas are not significant. The analysis results are compatible with the various studies in the literature. This study is also compatible with the pioneer study of Mueller and Murrell (1986) and shows differences from other studies in the literature for two reasons—it has been considered in Turkey for the first time and it was conducted at the regional level.

Public choice theory states that the aim of interest groups is to maximize their interests and this creates inefficiency in state activities. Similar results have been achieved for Turkey in the study. Especially in less developed areas, interest groups in Turkey have a positive effect on public expenditures. It can be implied that the increasing effect of interest groups on public expenditures can decrease the regional disadvantages. Since this situation increases the rent-seeking activities, the use of public resources becomes inefficient. According to public choice theory, the main reason for this is that the activities such as rent-seeking, pork-barreling, lobbying, and absence of meritocracy cause waste of public resources. This situation negatively affects the efficient distribution of scarce resources. The thing that governments ought to do is to eradicate regional differences and provide resources and investments in a fair manner. The results achieved in this study show that a similar situation is in Turkey as well.

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