Prime Minister Turnover and Distributive Policy Making:
An Interrupted Time Series Analysis

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Government allocates billons of dollars every year to individuals, private and nonprofit organizations, as well as state and local governments. General resources are directed or manipulated to specific purposes, individuals and areas subjectively. Provinces obtaining representation on the prime ministry level evidence an increased amount of budgetary allocation, whereas provinces losing representation evidence a decreased amount of such allocation to his/her election region. To test this provinces benefit hypothesis, the data on the distribution of public investment expenditures (PIE) among provinces represented by the prime minister (PM) were gathered for 35 years. The interrupted time series method was employed to test the hypothesis. The research design measured time (general trend) and intervention effect on the distribution of public investment expenditures since being represented by PM.

Keywords: prime minister turnover in Turkey, distributive policy making, interrupted time series analysis

Distributive Politics

In recent years, studies on distributive policies have increased in various areas, since these policies are evaluated as one of the inefficiency factors in allocating limited governmental resources. Governments allocate billions of dollars every year to the individuals, private and nonprofit organizations, state and local governments and certain geographic areas. The form of these benefits might be different including grants like food stamps, housing vouchers, tax credit for investments, and similar other allocations. General resources are directed or manipulated for specific purposes, individuals and areas.

The distributive policy can be defined as "a political decision that concentrates benefits in a specific geographic constituency and finance expenditure through generalized taxation" (Feiock, 1999). Geographic consideration may need to be enlarged to include some other factors such as time, certain groups or areas. Various factors have been proposed to explain distributive policy making. Political business cycle theory developed by Nordhaus (1975, p. 169) has two major implications for distributive policies. Politicians stimulate the economy before each election and the electorates reward the incumbent if the economy is doing well in the period immediately preceding the election.

Frant (1996, p. 365) used the concept of high-low powered incentives for managers to explain motivation behind this type of policy. The concept of high power incentives works in the public sector to produce allocative efficiency, because politicians' desire of reelection leads them to direct government to produce

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government output that more or less reflects the wishes of constituencies. The politicians with an intense desire of reelection resulting in opportunistic behavior like spending public monies to highly visible areas, engage in distributive policies.

Weingast, Shepsle and Johansen (1981, p. 86) suggested three relevant mechanisms in realm of distributive policies as political cost accounting system, districting mechanism and taxation mechanism. The policy makers using these mechanisms transform economic benefits to their supporters and economic costs to all taxpayers. Distributive programs are assumed to play a reelection instruments because they confer visible, concentrated benefits, which therefore electorally valuable (Bickers & Stein, 1996, p. 1326), but the cost are distributed invisibly across the entire taxpaying public.

Bickers and Stein (1996, p. 1324) mentioned several factors that have a high impact on the degree or the extent of distributive policies. They argued that legislators use resources of incumbency to reduce the probability that they will lose future elections. The major factors affecting the incumbent to make distributive policy are the decline of partisan behavior, resource availability, existence of strong challengers and local political environment. Legislators performing their duties in front of public eye have to address and persuade the mass public and attentive publics including community elite, interest groups, local business elite and professionals. The evidences (Bickers & Stein, 1996, pp. 1326-1331) illustrated that attentive publics are more likely to be aware of new distributive benefits and consequently support their representatives.

When reelection is threatened by party competition and political turmoil generally, policymakers may be more willing to pursue policies that offer some special benefits to their constituencies more than usual. Therefore policies that offer short-run targeted benefits may be more attractive even if they cause substantial long-term costs for future taxpayers.

Rodrick and Alesina (1991) studied distributive policies in terms of political and economic growth relation. In their model, there was a converse relation between political conflict and economic growth, and they observed continuous struggle for distribution of agents between two classes, workers and capitalists. They argued that in a democracy where a median voter theorem applies, the higher the rate of taxation is and the lower the rate of growth is, the more unequal the distribution of wealth is. However, Clingermayer and Feiock (1995) found that distributive politics help local development and ultimately will provide benefits to all society.

The legislators seek both campaign contributions and votes to obtain reelection. Denzau and Munger (1986) argued that supply-side of public policy is more influential than those competing interest groups and so they focus on supply of service than demand. The voters are largely uninformed and can be affected easily by advertising. Elected officials might not care solely about winning but may be reputation and stewardship. They stated that most others focus on demand-oriented categorization of distributive policy. Rich (1989, p. 193) criticized top-down view of policy distribution hypothesis. He argued that recipients played key roles in affecting allocation of public resources. Local participants decide to a considerable extent when, how much and what they want with elections.

For Hamman and Cohen (1997, pp. 57-59), the traditional theory of distributive policy is incomplete since it ignores the significance of presidency. Presidents may have impact on distributive policies either positively by enhancing them or negatively by preventing or delaying them in the legislative and/or the implementation process.

Some scholars have studied leadership turnover which may make or give priority to the distributive policies. Clingermayer and Feiock (1999, pp. 5-12) found that turnover in office of mayor, chief administrative office, and city council member increase the long-term borrowing. Transferring the cost from this generation to

the next generation should also be evaluated in the context of distributive policies. Wolman, Starite and Melchior (1996) suggested that the policy changes regarding expenditure level and priorities from previous mayor's term will be greater in cities where a new mayor has taken office than in cities where an incumbent has been reelected. This means that these new mayors changing policies with different priorities are more likely engage in distributive policies.

The researches up to now have concentrated on distributive policy making either in the context of legislative and executive bodies separately in terms of turnover. In this study, prime minister of parliamentary regime will be studied in the context that how he/she allocates general revenues to his/her own election region. We intend to integrate these two separate approaches in the body of prime minister. Prime minister is the most powerful person in the executive since he/she is the head of executive and determines all members of cabinet etc. He/she is also powerful in legislation since he/she is the head of party in power, and party discipline is very strict. Legislative and executive powers support each other and prime minister is influential in both branches.

Lee (1998, pp. 34-37) remarked that coalition building in senate produce distribution of federal funds to states reflecting the enhanced representation of small states in senates. He argued that overrepresented states tend to receive higher allocation of federal funds per capita. When power of prime minister is considered, the cities represented by prime minister can be evaluated in the context of overrepresentation.

Research Design

The question is "can provinces get more allocation from general resources if they are represented by prime minister (PM)?" To seek answer for the question, the paper formed hypotheses and interrupted time series model to test these hypotheses.

Hypothesis: Provinces obtaining representation on prime ministry level are more likely to evidence an increased amount of allocation, whereas provinces losing representation evidence a decreased amount of such allocation. The provinces benefit hypothesis was derived from the distributive politics theories. It is expected that provinces represented by PM are more likely to benefit more from nation's general resources in some way. Elected officials in order to obtain support to be reelected allocate more resources to their constituencies than usual. If the elected officials have both legislative and executive power as in the case of PM, this impact is more likely to increase.

Conceptualizing and measuring province benefit constitute a major problem. Geographic structure, commercial conditions, population movements, social and cultural problems and opportunities of the province or other provinces can have considerable influence on the allocation of governmental resources among the provinces. These are common problem in any cross-sectional data and analysis.

This study aims to test whether PM provinces benefit from the distribution of general resources as public investment expenditures (PIE) received before and after representation by PM. We will also check whether these provinces losing representation by PM suffer a cut in their share of PIE. Figure 1 illustrates the expected regression trends for PM provinces before, during and after being represented by PM.

The interrupted time series method seems to be the most convenient method to analyze the data gathered for this model. This method will measure time (general trend) and intervention effect. Having been represented by PM is an intervention to the usual allocation of PIE. The impact of being represented by PM can be measured in terms of no impact, short and long term impact. We will test the hypothesis by using time and short time impact with the following equation:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + e$$

Where:

Y is percent or real PIE;

X_1 is the time variable coded 1, 2, 3, … n;

X_2, X_3, … illustrate intervention/s which equal/s to 0 before the representation by PM and 1 after it;

a is a constant;

e is an error term;

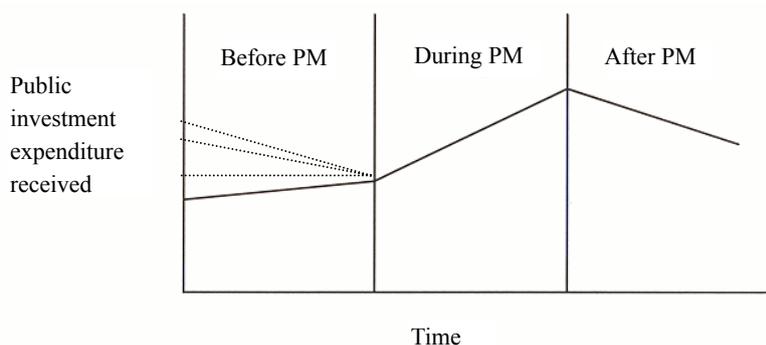b_1, b_2, b_3 weight estimated by multiple regressions.

Figure 1. The expected regression trends PM provinces before, during and after being represented by PM.

There are two common problems in the application of time series analysis: autocorrelation and history effect as a threat to the validity. After regression analysis, Durbin Watson test was applied to see if there is major autocorrelation problem. Durbin Watson test results showed that autocorrelation did not distorted the correlation. To reduce history effect, the percentages of expenditures and compare PIE of other similar size provinces of the time were used.

The data about the distribution of PIE among provinces represented by PM before and after PM turnover are obtained from the State Planning Organization (SPO)[1]. Units of analysis are the provinces that gained or lost representation by PM between 1963 and 1998.[2] The independent variable is the representation by PM or not. The dependent variable is the amount of PIE[3] received by the provinces. This was operationalized in two ways. First one is the percentage of total PIE each year received by each province. It is aimed to eliminate the sensitivity for year to year fluctuations in the overall PIE. Second, real values of PIE[4] were used to capture general trend.

The study used the data from the planned public investment programs, although the actual realization of programs sometimes may be different than the planned programs, since the current data regarding realization of those programs were not reliable and available for every year.

In Turkey, the cabinet changed 28 times in 35 years period. Few prime ministers stayed in power for a very short period of time, and they did not have enough time to be influential in budget preparation. Nine of 28

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[1] State Planning Organization (SPO) is Devlet Planlama Teşkilatı (DPT) in Turkish.

[2] Istanbul was not included in the model because of metropolitan character of the city, and Istabul was represented by Erdogan after 2000, and so it is not under the considearion of our analysis.

[3] Projects which can not be shared among provinces and involve more than one province which is shown in "Multi Provincial" entry, the investments of local administration and funds are not included to amount of PIE used in this study.

[4] To control for inflation, all Turkish Lira (TL) amounts were converted to constant TL's (1963-base) using an index for wholesale price indices of Istanbul Chamber of Commerce.

cabinets were not considered, since they continued less than one year and they did not participate budget making. Although some cabinets were less than one year, we took them into consideration since former PM did not change, and continued keep his post despite some minor changes among the cabinet members. The budget preparation starts in July and completed around October and November for next year. Therefore, if the cabinet persisted less than one year, it was excluded from analysis. The budget preparation time was basic consideration for coding interventions.

Findings

The study runs the model with an ordinal least squared (OLS) multiple regression method on time series data to estimate intervention effect on distribution of PIE among provinces. We found that there is statistically significant relation between the prime minister turnover and distributive allocation of PIE to their election regions. The findings regarding these eight provinces were examined and analyzed separately.

Erzincan

Erzincan was represented by PM once in its history for about one and a half years. In the first year, PIE for Erzincan increased by 14%, and after losing representation at prime minister level, it continued to decrease but this increase was not found statistically significant. The PM Akbulut, after powerful PM Ozal became the president, was seen as a puppet of Ozal, and also was not very influential in the party. His party leadership was continuously questioned, within one year party changed its leader, and so PM changed. Very short time period, which prevented him getting used to the post, and his weak leadership did not bring drastic increase in PIE to his province.

The highest PIE for Erzincan was in 1993, since there was a terribly destructive earthquake that destroyed almost all-public buildings. The PIE for that year and three consecutive years increased more than 10 times according to previous years. However, this unexpected natural disaster would not be evaluated in terms of distributive politics.

Isparta

Isparta is the province most often represented by PM in Turkish political life. Even though Isparta was represented by PM more than three times, the study evaluated Isparta in three main stages since these years was consecutive (see Figure 2). Demirel became PM for the first time in 1965 as a follower of Menderes[5]. Between 1965 and 1971, while percentage of PIE was generally decreasing, Isparta had dramatic increase in PIE in Demirel's time. After four years, Demirel became PM between 1976-1978, and again Isparta had increasing trend in PIE.[6]

Isparta had suffered from a big decline in PIE after Demirel lost prime ministry position. However, after Demirel became PM again for the 7th time in 1991, the province again started to experience considerable increase in the share. In 1993, he became the president of the country after Ozal's death. The president was also very powerful as a head of country and approved the budget. Therefore, Isparta continued to experience getting increasing amount of the PIE until he left this position in 2000. Figure 2 illustrates how Isparta Province

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[5] Menderes was the president of the Democrat Party, powerful, famous PM between 1950 and 1960, and hanged up in 1960 Coup Detat by Military Juntas.

[6] This is statistically significant within 10 years (1972-1981). The study preferred to limit the time to 10 years for this mid period since the regression line in mid period was affected by the beginning and ending period also illustrates the representation by Demirel.

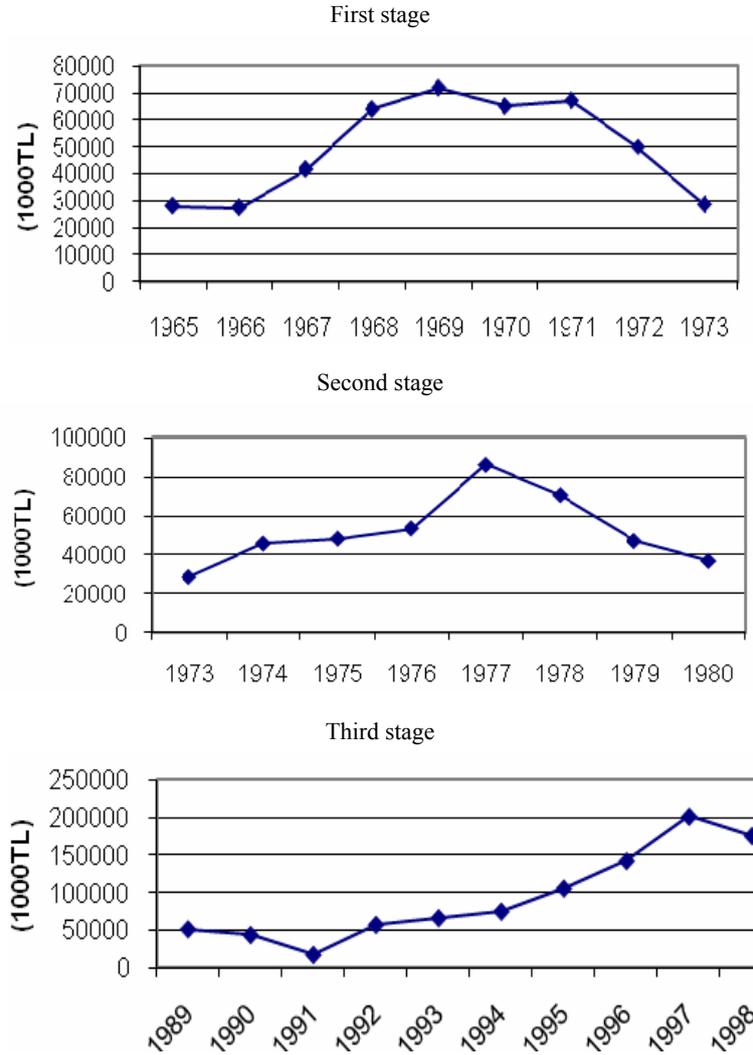experienced PIE allocation before, during and after representation.[7]

First stage

Second stage

Third stage

Figure 2. Distribution of real public investment expenditures for Isparta.

Istanbul

The representation of Istanbul can be evaluated in two main stages.[8] While Ozal was representative from Istanbul between 1984 and 1989, the province got increasing amount of PIE. Although there were some fluctuations, the same increase can be argued for the time of Ciller who became PM between 1994 and 1996. However, the increase in PIE for Istanbul is questionable since the growth of population because of internal migration[9], and metropolitan structure of the city. Istanbul is the largest city in Europe and third in the world with 15 billion population, and represented by 50 representatives, PM is only one of these representatives.

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[7] Isparta is the city that overrepresented time wise in Turkish Republic political history relative to other cities.

[8] Istanbul is the city of birth of PM Ulusu. However, the study didn't evaluate the period of Ulusu, since he was appointed PM by military juntas together with 1980 Coup Detat, and he was not elected by citizens, he was not expected to behave with the reelection motive.

[9] The governor of Istanbul states that 200-300 thousand people migrate to the city every year excluding the natural population growth.

Kocaeli

Kocaeli elected PM once in its history. The PIE had been declining before PM Erim. Together with Erim the province had increasing trend in PIE. And after his gone, the PIE for city declined rapidly again. In 1990s, Kocaeli started to have increasing amount of PIE since regional industrial development and being very close to Istanbul, and attracted the internal migration.

Konya

Erbakan, representative of Konya, became president in 1996 for only one year and four day. Actually, he was forced by the military to resign from his duty. Before Erbakan, the province had a declining trend either in percentage or real amount of expenditures. Together with Erbakan, the city increased its PIE by about 50%.

Malatya

The representation of Malatya by PMs can be examined in two main stages. Between 1963 and 1965, when Inonu was PM and represented Malatya, even though the allocation the province received seemed to be increasing, it is not statistically. Inonu, even though was not from Malatya, was elected by Malatya. Why city did not get higher amount of PIE in his time should be analyzed in a historical perspective. Inonu was one of the founders of modern Turkey, well-known person in Turkish political history in the period of single authoritarian party system when opponents were eliminated coercively in the name of, but against the democracy. People would elect any candidate as a representative, because there was no any other alternative. The similar thing happened after 1960s in case of Inonu after 1960 Coup detat. Therefore, he did not consider that people elected him or not, so he did not try to increase the PIE for Malatya.

The time period between 1985 and 1993 is the second stage when Ozal was PM and the president. Although Ozal was not elected by Malatya, he was born and grew up there. And hometown plays a very important role in Turkish political culture. Up to his death in 1993, the province experienced huge and increasing amount of PIE. For example, the city had the largest medical center in his name in East Anatolia during this period. Furthermore, the province has been receiving the PIE in drastically declining trend since his death.

Rize

Rize was represented by PM three times, but first two of them were very short period of time: 3-5 months. The third one took about 15 months in 1997 and 1998. In this period, even though the city had declining trend both in percentage and real PIE, the allocation to city increased.

Zonguldak

Zonguldak was represented by PM Ecevit several times in 1970s, but for a very short period of time, such as one month. In 1979 and 1980, PIE Zonguldak received did not change after PM. The most important problem in Turkish political life in 1970s was that there was instability in cabinets; in 10 years cabinet changed 14 times, and two military coups took place. In addition to this, that Ecevit was not from Zonguldak might have affected this situation.

Conclusion

This study has examined the relationship between representation by PM and the PIE allocation to the PM provinces. Of 12 provinces studied, 8 cases showed statistically significant short-term increase in the allocation of PIE to PM provinces. None of the cases showed statistically significant decline to the contrary of the hypotheses in the allocation of PIE to the PM provinces, when intervention occurred While the percentage of

PIE was decreasing at the time of intervention they increased suddenly (see Table 1 and Table 2).

Table 1

Changes in Real PIE of PM Provinces Annually and After Representation by PM

Degree of change	Annual change	Representation by PM
Significant increase	Erzincan Istanbul Kocaeli Malatya	Isparta (1966-1971)* Isparta (1976-1978)* Isparta (1994-1998) Istanbul (1985-1993) Kocaeli (1971-1972) Konya (1997)** Malatya (1985-1993) Rize (1998)**
Significant decrease	Rize*	
Not significant	Isparta Konya Zonguldak	Erzincan (1991) Istanbul (1994-1996) Malatya (1963-1965) Zonguldak (1979-1980)

Notes. * $P > 0.05$; ** $P > 0.10$; Rize within last 20 years, Konya within last 10 years.

Table 2

Changes in the Percentage of PIE of PM Provinces Annually and After Representation by PM

Degree of change	Annual change	Representation by PM
Significant increase		Isparta (1966-1971) Isparta (1976-1978)* Istanbul (1994-1996) Isparta (1994-1998) Istanbul (1985-1993) Kocaeli (1971-1972) Malatya (1985-1993) Rize (1998)*
Significant decrease	Malatya Rize Isparta Konya Zonguldak	
Not significant	Erzincan Istanbul Kocaeli	Erzincan (1991) Malatya (1963-1965) Zonguldak (1979-1980) Konya (1997)

Notes. $P > 0.05$; * Isparta (1976-1978) within 10 years, Rize within last 20 years.

These findings are consistent with the findings of earlier studies that constituencies benefit from being represented at the PM level. All these observations regarding allocations of the PIEs showed that elected officials to get reelected allocate governmental resources to their own provinces. Further researches are needed to put forward comprehensive impacts of the representation by PM. Because PM may canalize general resources to local areas via other ways, such as by bringing tax reductions and exemptions, credits, special funds, realization of programs. In addition to these, other independent factors such as economic, political, social and demographic should be considered to examine this comprehensive impact of distributive policy-making.

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