ABSTRACT

Political Business Cycles, and Power Dispersion in Turkey: Can the Coalitions Be Successful?
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This study tests the existence of political business cycles and the effects of various instituitonal factors on budget deficits in Turkey. For this purpose, the annual (1960-2001 and 1985-2001), quarterly (1985:QI-2001:QIV) and the monthly (1985:01-2001:12) data set are used. Although the analyses with the annual data might disguise the effects of elections, the analyses with quarterly and monthly data reveal the existence of political business cycles clearly.. Especially the transfer payments are increase significantly before the elections and decrease after them. The coefficients of the new power dispersion index in the annual models are not significantly different from zero and they have unexpected signs. The data show that non-interest expenditures decline during the coalitions. However, detailed analyses show that coalitions and power dispersion cause increases in real interest rates on government debt and thus interest payments of government. This leaves smaller room for other expenditures in the budget causing an unavoidable success in reducing the other expenditures such as personnel payments, investments, non-interest transfers and other current expenditures. Monthly data reveal that the power dispersion increases the transfers and other current expenditures. This implies the validity of the prisoner's dilemma during the times of fragmented fiscal authorities. Another finding is that for the sustainability of the budget deficit, stable GNP growth is more important than stopping the inflation.

Political Business Cycles, and Power Dispersion in Turkey: Can the Coalitions Be Successful?∗

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I.   Introduction

In developing countries, in particular, not only are the governments the largest employers but also the government budgets constitute the most important resource allocation mechanism. In these countries, on average, 30 percent of the gross domestic product (GDP) is allocated by the government budgets. The governments control a major part of the money circulation by means of appropriation, salaries, and taxes and the prices of the products of state owned enterprises. At the same time budget deficits are seen as one of the major reasons of inflation. Therefore, budgets contain very important policy tools as well as being a serious problem for the policy makers.

The purpose of this paper is to investigate the government budgets in relation to a number of political events and institutional factors in Turkey. In this regard, we will consider elections, military-backed governments, and institutional factors as political events. The institutional factors that will be considered include organizational fragmentation of the budgetary institutions and the coalition governments. Examining the effects of the elections on budget deficits might give an indication of the existence of political business cycles in Turkey[1].

The novelty in our approach is the joint examination of the elections and coalition governments. Further, we introduced a new power dispersion index which is suitable for the conditions of Turkey. In Turkey, since 1983, there are three separate organizations that are responsible for the preparation and implementation of the budget. They are the State Planning Organisation (SPO), the Treasury and the Ministry of Finance. We claim that the power division among these three organizations exacerbates the political power dispersion of coalitions. In order to test this claim, we introduced an index that takes the interaction between these organizations and the number of parties in the coalitions into account. In addition, attempt to find out which components of the government expenditures are most sensitive to political considerations. This will be helpful in understanding the target constituencies that will benefit from that component of the budget. It will also indicate the level of sensitivity of the politicians to those constituencies. Analyses in this paper will contribute to an understanding of why budget deficits arise in Turkey. This will shed light on the necessary fiscal reforms and fiscal policies required to reduce budget deficits[2].

This paper is organized as follows. Section II reviews the literature and explains the model used. The historical background of main economic events in Turkey and the data used in the analysis are explained in Section III. Empirical results are provided in Section IV. Policy implications are discussed in Section V. Section VI gives the conclusions.

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[1] As Schuknecht (1996, p.158) states, in order to analyze the political business cycles in developing countries, fiscal variables are more appropriate than monetary variables because in these countries the economy is not highly monetized. Since we think that this is alsothe case in Turkey, we will deal only with fiscal variables.

[2] The budget deficits are not the only variable that may be affected by the elections. The number of public sector employees and the prices of goods and services produced by the public sector may also exhibit a pattern concurrent with the elections. The effects of these variables on current budget deficits may not be important in the short run but their long lasting effects may be serious. These issues are important and should be dealt with separately. These are left for future research.

II.   Review of Literature and the Model

The topic of how political and institutional considerations affect the national fiscal policy formation attracted the attention of many researchers recently. This line of argument starts with Roubini and Sachs' (1989a) which is based on a cross-section data of 14 OECD countries. They show that the tax smoothing hypothesis cannot fully account for the differing magnitude of the budget deficits in the sample countries, because tax smoothing hypothesis does not take the various institutional arrangements in the political processes into account. They stress that governments are not the monolithic entities of standard economic models that show governance according to well defined objective functions. Roubini and Sachs preferred to test a semi-reduced form equation to see the effects of the political power dispersion on the budget deficits. This model is not derived from a structural model but is consistent with both the tax smoothing model that is championed by Barro(1979) and the traditional Keynesian models of fiscal deficit discussed by Haan et al (1999, p.166). The Roubini and Sachs model is as follows:

$$DBY_t = a_0 + a_1 DBYL_t + a_2 DUB_t + a_3 DRB_t + a_4 DN_t + a_5 POL_t + v_t \qquad (1)$$

where the dependent variable(DBY) is the net public debt/GDP ratio. DBYL is the lagged dependent variable, DUB is the change in the unemployment rate, DRB is the change in debt servicing costs, DN is the change in real GDP growth rate, P is the political-institutional variable and v denotes the error term. This study showed that public debt increases as the number of parties in a coalition government increases. As suggested by the game theory, coalition governments with large number of parties find it difficult to cooperate. This is referred to as Prisoner's Dilemma. Since coalition partners have different constituencies, each party will veto spending cuts that interfere with the interests of their respective constituencies.

Although researchers agree that political factors in determining the budget deficits should be taken into account there is no consensus on how to measure the effect of these factors. Edin and Ohlsson (1991) rightly object to the way the political power dispersion index is constructed by Roubini and Sachs[3]. Roubini and Sachs index (POL) implicitly assumes that the increase of public debt under a

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[3] Roubini and Sachs test the proposition that multi-party coalition governments have a bias towards larger budget deficits by creating an index, POL_t. This index measures political structure (e.g. degree of cohesion) of the national government. POL (P_t) is defined as follows:

$$POLt = \begin{cases} 0 & n = 1 \\ 1 & if \quad n = 2 \\ 2 & n \geq 3 \\ 3 & minority \quad government \end{cases}$$

where n is the number of the parties in the government . Roubini and Sachs also use the variable ($POL_t . D_t$) , where D_t is a dummy variable which is equal to zero for high growth periods and equal to one for adverse economic circumstances. The variable ($POL_t . D_t$) gives more significant results than POL_t itself. On the other hand, Roubini (1991) uses frequency of government change- including both regular and irregular changes as a proxy for the degree of political instability. He finds that the greater the frequency of government changes the larger will be the budget deficits. This verifies the proposition of Alesina and

minority government is three times as large as that under a two-party majority coalition. According to Edin and Ohlsson, political index should have a non-linear form with which every class of government's political cohesion could be tested separately. For this reason, they constructed separate indices, namely POL1, POL2, and POL3, which account for the cohesion of the two- party governments, and three- and more party governments and the minority governments, respectively. Using separate dummy variables for each category of the political power dispersion index, Edin and Ohlsson find that the estimated significant political effect which is interpreted by Roubini and Sachs as the coalition effect is in fact, entirely due to the effect of the minority governments. Edin and Ohlsson estimated an equation similar to the model (1) above. They find that none of the POL variables were significant for the member countries of the European Community. They conclude that government debt accumulation is positively associated with the frequency of government changes.

Haan and Sturm(1997) reviewed the findings of Roubini and Sachs (1989a) and Edin and Ohlsson (1991). Their study differs from Haan and Sturm (1994) in three aspects. First, they use gross debt/GDP figures as the dependent variable instead of net debt/GDP ratio. Second, they consider the data of 21 OECD countries instead of 14. Third, their sample period (1982-1992) differs from the 1960-1985 period on which the previous studies were based upon. In addition to these, Haan and Sturm correct some observations of the sample data used for the power dispersion index. They use the same class of political variables like POL1, POL2 and POL3 and estimate a model similar to the equation (1) with weighted least square method. Their results show that neither of these dummy variables are significant in explaining the increases in gross and net debt to GDP ratios and changes in the government consumption and investment spending in GDP. They produce the same estimation for the same set of countries with the same time period (i.e. 1960-1985) of Roubini and Sachs data set by correcting the data for power dispersion index. But, again they could not find a supporting evidence in favour of effects of power dispersion index. They conclude that the results of all previous studies are not robust with respect to the pooled data.

The most recent research on fragmented governments and dispersion of political power are done by Perotti and Kontopoulos (1998), Kontopoulos and Perotti (1999), Haan, et al. (1999), Volkerink and Haan (2000), Franzese (2002), and Ricciuti (2002). Perotti and Kontopoulos (1998) based their research on 1960-1985 data of 20 OECD countries. Their contribution is based on the precise definition of the fragmentation. They defined fragmentation as the number of the decision-makers (size fregmantation) and the dispersion of the structure of the process in which decision-makers interact (procedural fregmantation). They use the number of the parties in the coalition and the number of the spending ministers to measure two forms of fragmentation. They use the central government expenditures and deficits as the dependent variable. Their results show that fragmentation does matter especially for transfers, and personnel payments. Kontopoulos and Perotti (1999) stress that spending has a public-good-effect while the burden of this spending is a public bad. Effects of the

Tabellini (1990) who assert that alternative governments after elections strategically influence the choice of their successors. Roubini and Sachs also conclude that military regimes are more successful than democratic ones in stabilization.

spending are internalized by the decision-makers while the (tax) burden of it is born by the whole economy. They also stress the role of the fragmentation in the government, which is defined as the number of spending ministiries, and degree of the procedural fragmentation, which defines the rules under which the aggregate budget is allocated among the spending ministiries.

Haan, et al. (1999) base their research on the data of 20 European countries for the period 1979-1995. Their model is a variant of the model (1) above. Their dependent variables are growth of gross and net debt for both central and general government. In contrast to Roubini and Sachs (1989a) and Edin and Ohlsson (1991), they do not find supporting evidence in favour of POL or POL1, POL2 and POL3 type of variables. They then tested the model by directly including the number of parties as an explanatory variable instead of as dummy variables. They find no supporting evidence for this model also. They also tested the same model by classifying the countries as presidential, stable and unstable democracies. But, their conclusion did not change. They then employed the growth of central government as the dependent variable and found that the number of parties has significant effects on the growth of central government debt. Accordingly they concluded that it is the number of parties in a government that matters for the debt/GDP ratio but not whether the government has majority in the parliament or not.

Volkerink and Haan (2000) use a panel of 22 OECD countries over the 1971-1996 period. They use central government expenditures and deficit as the dependent variable in the model (1) above.

They propose new variables such as the government's position with respect to the parliament, ideological complexion of the government and political fragmentation of the government. They exclude the finance and the treasury as the spending ministeries because these two ministeries take public interest into account in a wider perspective. They conclude that the impact of the ministers is stronger and more robust than the effective number of parties in government and political fragmentation does not seem to affect the deficit.

Ricciuti (2002) uses data of the 19 OECD countries for the period 1975-1995. He defines the fragmentation in three ways. The first one is the size fragmentation. It covers not only the fragmentation in the size of the government but also the size of the opposition parties. According to him, a large number of opposition parties can affect the expenditures because some of them might engage in the spending process by sometimes supporting the policies of the government. He also uses the ratio of the seats held by the government parties in the parliament for the size fragmentation. The other concept, which has been overlooked in the previous studies, is the control fragmentation. He measures the number of the chambers (i.e. sub-committees or commissions) to quantify the degree of the difficulty to pass a bill in the parliament. As institutional fregmantation, in addition Roubini ans Sachs (1989)'s POL index, Ricciuti also uses the number of the veto players and their orientation in the decision making procedures. Moreover, he uses roles of the house and the senate and the threshold values for the representation to measure the political cohesion. Ricciuti also emphasizes the over time characteristics of a government by using a dummy that captures changes in the goverment and the percentage of veto players dropping from government given the changes in the senate. For the first time, Ricciuti uses the elections as an explanatory variable in order to see the changes taking place

between one election and the next one as they provide evidences for a short-sighted goverment. and finds that the number of spending ministers, rising number of representatives per district (institutional fregmantation), elections, electoral years and a mandatory limit on a re-election have significant effects on goverment expenditures.

The other topic dealt in this article is the political business cycles. In addition to the effects of number of parties in a government (i.e. coalitions), several researchers examined also the effects of elections on budget deficits. Assuming that governments are able to move the economy according to their desires and voters behave in a myopic manner, models developed for this purpose show that politicians are inclined to run budget deficits (decrease unemployment) before the elections and follow contractionary budget policies (decrease inflation) after the elections (Nordhaus, 1975, 1989). However, the contraction after the elections is usually postponed and the expected austerity never happens. These models are called political business cycle models. The macroeconomic fluctuations may also be explained by the partisanship attitudes of the governments. For example Hibbs (1977) shows that governments broadly act in accordance with their parties' economic and social objectives and their class-defined political constituencies. Schuknecht (1996) examines political business cycles and partisanship behaviors for a set of developing countries. He finds that governments of developing countries engage in expansionary fiscal policies before the elections in order to enhance their re-election prospects and contractionary policies after the elections.

As the detailed survey of Franzese (2002) on electoral and partisan cycles states that incumbents seem more prone to manipulate direct transfers than macroeconomic policies, at least for electoral purposes and perhaps more prone to manipulate the timing of policy implementation than policies themselves. Also, veto players do not change the tax and spending policies but they affect the adjustments of them. In other words, they create retards in implementations. In a sense, Franzese implies the importance of the timing of the spending and the need for use of the monthly and quarterly time series instead of annual data.

The number of researches on Turkey is quite small. Özatay (1999) shows that elections have significant effects on economic policies before elections using quarterly data for the period of 1985-1995. He also finds some evidence of inflationary effects of these populist policies since the prices of the goods and services of the public sector. increase the elections. The dependent variables that he uses are some monetary variables such as money base and net assets of the central bank, fiscal variables such as government expenditures, and the public sector prices. He stresses that stabilisation programs should be accompanied by institutional changes such as the independence of the central bank. Ergun (2000) investigates the electoral cycles during the period of 1985-1999. She uses extentive series of monthly data to test the existence of political business cycles from monetary, fiscal and pricing policy perspectives. She finds that fiscal expenditures especially the transfer payments and the monetary aggregates increase, tax revenues decrease and the prices of the public goods and services are repressed before the elections. Özatay's and Ergun's findings clearly indicate that the Turkish experience in recent decades is compatible with the foresights of political business cycle theories.

III.   Economic Background and the Data

In this study we analyzed the period 1960-2001 in Turkey. This period covers a number of important political and economic events. The period 1960-1980 was characterized by import substitution policies. On January 24, 1980 the Structural Adjustment and Stabilization program was implemented. This date marks the beginning of a period during which major policy switches occurred. Some of these changes are as follows. In July 1980, interest rate ceilings were abolished. In May 1981, the exchange rate began to float. In 1983, foreign trade regime was liberalized and export led growth policies were adopted. The Undersecretariat of the Treasury was separated from the Ministry of the Finance. Eventually, Treasury became a powerful government body managing the debt and cash-flow policies. The Treasury included the Undersecretariat of the Foreign Trade until 1994 at which time it was separated from the Treasury. This increased the number of fiscal authorities responsible for the economic and fiscal policies. The so called, institutional fragmentation occurred during this period (i.e. in 1983). In addition to the Ministry of Finance, and Treasury, the State Planning Organization (SPO) was also involved in economic decisions. SPO continued to draft five-year plans and annual investment programs. Treasury began to implement the internal debt policy in 1986.

There have been a number of important political events during the 1960-2001 period. The early 1960s, 1970s and also the 1980s witnessed the military backed governments. The early 1960s, late 1970s and the 1990s were characterized by coalition governments. The Cyprus War took place in 1974, Petroleum shocks occurred in 1974 and 1979.

In this study we propose to examine the effects of these economic and political events such as the effects of power dispersion among the political and fiscal authorities on the budget deficit. Thus, the dependent variables are the ratio of budget deficit to GNP, primary surplus to GNP and budget expenditures to GNP or sub-totals of the budgetary expenditures. The explanatory variables are GNP growth rate (or industrial production index), inflation , volume of trade over GNP ratio as an index the openness of the economy and a number of dummy variables representing the economic and political events referred to above. Our basic model follows the Roubini and Sachs model given in Section II except that we cannot include the unemployment rate among our explanatory variables since no reliable series exist for Turkey for the whole period under consideration. Instead we use the GNP growth rate and opennes index to capture the income effects.

Table 1 shows the dates of the elections, the types and the duration of the governments in Turkey. We can observe from this Table that Turkey has been governed by coalition governments for several periods of time during the 1960-2001. Table 2 gives the dummy variables used in this study. Table 2 was derived from Table 1. Table 3 shows the average deficit to GNP ratio, growth rate and the inflation rate. We first observe that the inflation and the budget deficits are worst during 1984-2001 period. The best period among all is the period of 1962-1970. Second, during the military or military backed governments (1960-61, 1971-1973 and 1981-1983). The budget deficits and inflation were greater than the elect government for the (1962-1974) period but smaller than for the elect governments of 1974-2001 period. Third, despite the higher budget deficits and inflation rates, the period of 1984-2001 has witnessed to the lower average growth rate compared to the average growth rate of 1960-2001 period.

However if we compare the extraordinary government periods, with the elect governments of the 1960-2001 period, we observe that the average deficit/GNP ratio for the extraordinary government period is about one-third of the average of the elect governments. In fact, it seems that the extraordinary governments are successful with respect to the average for the 1960-2001 period, but unsuccessful compared to the average of only 1962-1980 period. The extraordinary governments seem to be successful on average of the whole period in reducing budget deficits.

Figure 1 shows that the Deficit/GNP ratio was always negative after 1976. 1976 was the beginning of a high inflationary period. The ratio increased continuously after 1984. On the other hand, both Primary Surplus (PS)/GNP and Budget Deficits (BD)/GNP ratios increased negatively after 1976.

FIGURE-1:The GNP Growth (GR), and the Ratio of the Budget Deficit to GNP (BD/GNP), 1960-2001, Turkey
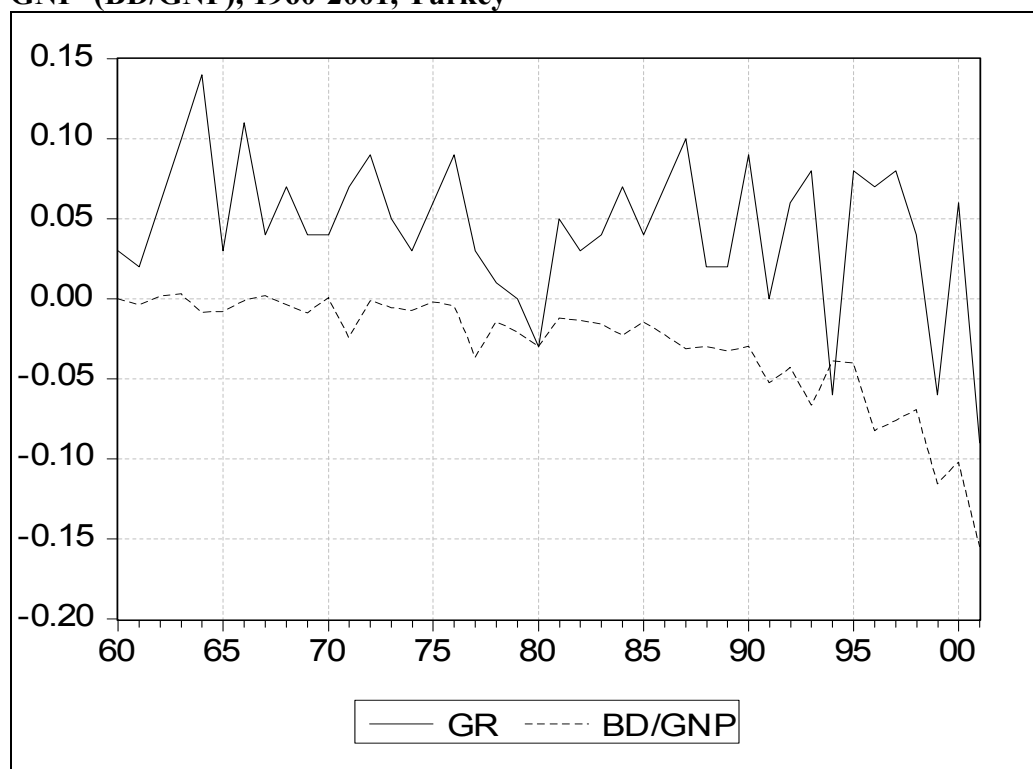

Figure 2 exhibits the relationship between inflation and the number of parties in the government. It shows that there are three main coalition periods between 1960-2001. The first is during 1961-1969 just after the first extra ordinary government. The second is during 1973-1979 just before the third extra ordinary government. The third coalition period is during 1991-November 2002.

FIGURE-2:The Relationship Between Inflation (WPI) and Number of Parties (NP) in the Government, 1960-2001, Turkey
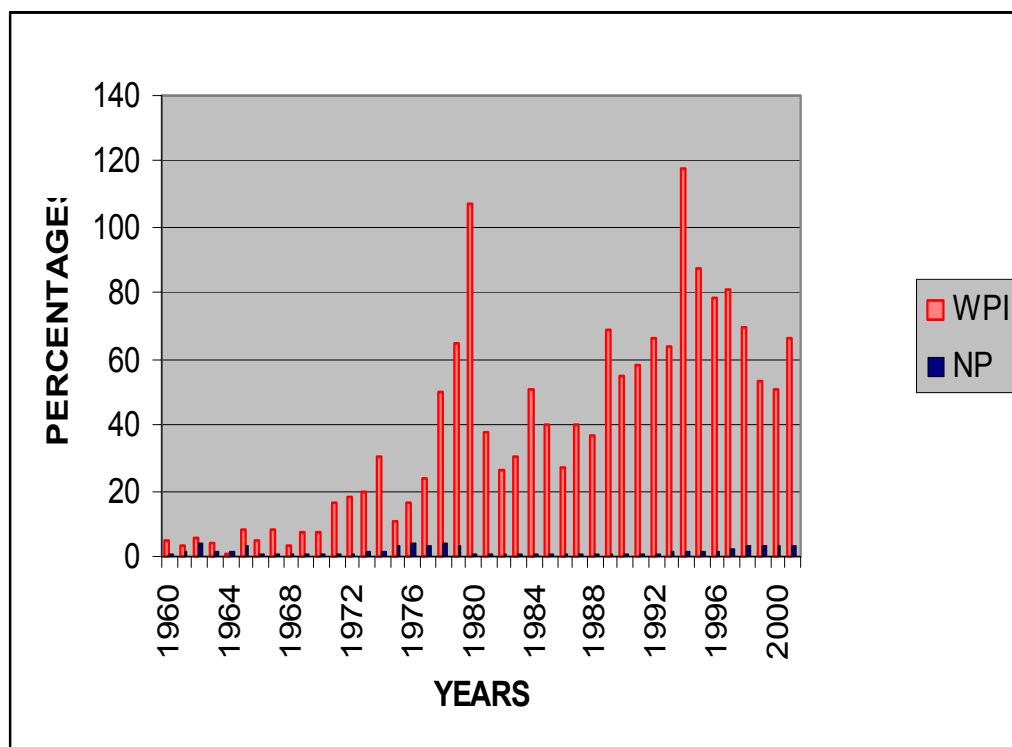

Table 1 together with the Figures 1 and 2 show that there might be a correlation between the type of the governments and the economic instability yet the direction of the causality is not clear. However, it is usually accepted that the causality runs from political instability to the economic one. The allocation of most of the resources in Turkey is done by the state and the politicians. The burden of this allocation depends on the high growth performance and the 'soft budget constraint' of the state (Önis and Riedel, p.91-104). In other words, in order to satisfy the majority of the voters, regardless of the cost of the resources, the governments should provide a positive growth rate[4] and, at the same time, should increase the budget transfers. Atiyas (1996) makes a similar argument. He observes that economic disequilibria mostly stems from the sensitivity of the uncooperative and competitive politicians to the demands of their constituencies. Atiyas and Sayin (1997) propose a principal-agent model in order to understand the budgetary allocation issue in Turkey. They consider the voters as the principals during the elections but, after the elections, the politicians become the principals and bureaucrats become the agents. It is a very difficult task for principals to manage the agents because of the loose and discretionary legislation. This increases the mismanagement of public resources. They assert that the party structures in Turkey are not sufficient to reduce the principal agent problem and to convert the voters' interests into cooperative and collective macroeconomic equilibrium (Atiyas and

[4] Gazioglu (1986) found that if growth rate in Turkey falls, then the size of the sustainable budget deficit is reduced thereby increasing the inflation.

Sayin, 1997, p. 34). However, Atiyas and Sayin do not test their observations. Thus most researchers claim that there is a negative relationship between stability in politics and the economy in Turkey.

IV. Empirical Results

The political business cycle models assume that the incumbents follow expansionary policies just before the elections and reverse the trend after the elections in order to smooth the negative effects of pre-election budget deficits. In such models the elections are assumed to be exogenous and the deficits are endogenous. However, the election time can be endogenous. Incumbents can prefer to make elections when the social and economic conditions are in their own favor[5]. In order to test whether opportunistic election time hypothesis is valid for Turkey, Tutar and Tansel(2000) performed a Hausman-Wu test and found that there is no problem of endogeneity of the election time in Turkey. In this section we will present the analysis with the annual, quarterly and the monthly data separately. The data set essentially covers the period 1985-2001. However, for the annual data analysis we will extend the data set back to 1960. In using 1960-2001 data set, we aim to see the effect of the power dispersion clearly obviously as the fiscal authority was only two (i.e. the Ministry of Finance and State Planning Organisation) before 1984[6]. The variables included in the models with annual and quarterly data are the same but differs with the monthly data. The annual and quarterly models include growth rate of GNP but monthly data does not. Instead we used industrial production index. For the period 1960-2001 we used openness index (i.e. volume of trade/ GNP) in order to capture the structural policy switches that happened after 1983. However, since the whole period of 1985-2001 is governed under the same structure of export promotion policies and since the openness index was always found to be insignificant, we didn't use it in quarterly and monthly models.

The explanatory variables are lagged values of the dependent variable, inflation (i.e. wholesale price index), the openness index[7], growth rate of GNP[8], and some electoral and political dummies[9]. The definition of the dummy variables are as follows.

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[5] Heckelman and Berument(1998) investigated such an issue. By using Hausman procedure with instrumental variable technique, they found some evidence for endogenous elections in Japan but not in England.

[6] In order to apply the Hausman-Wu test, Tutar and Tansel have estimated a predicted value of elections with the following equation: Elections = f (Deficit/GNP$_t$, Deficit/GNP$_{t-1}$, real budget expenditures, real supplementary budgets), then we used the predicted values of 'elections' and its original data series in the following equation: Deficit/GNP= f (wars-terrorism, number of parties * number of fiscal authorities, elections, predicted elections) and found residual sum of squares (RSS$_0$) and standard error of regression (SER). We also estimated : Deficit/GNP= f (wars-terrorism, number of parties * number of fiscal authorities, elections) and found RSS$_1$. Then, we find X^2(E) = (RSS$_0$- RSS$_1$)/SER where critical value of X^2(E) is approximately F(1,37)=4.10. If the X^2(E) is less than F value, then it means there is no endogeneity problem and OLS gives consistent estimates. Since we found that X^2(E)=0.0035, there is no endogeneity problem of elections for the period 1960-1996. See Stewart (1991, p.144-145) and Heckelman and Berument(1998) for more details of the Hausman-Wu test in this context.

[6] The Treasury was a general directorate of the Ministry of Finance until December 31, 1983.

[7] The Openness Index (VT/GNP) is the volume of trade over gross national product. The volume of trade is defined as the sum of the export and import values.

[8] Two period lagged growth rate is used for two reasons. First, current (t period) the macroeconomic

Military Backed Governments: Dummy variable for extraordinary (military backed) governments. Extraordinary governments were in office three times: First, in the period of 30 May 1960-28 October 1961 due to a military coup; second, in the period of 26 March 1971-16 December 1973 due to a military warning; third, in the period of 12 September 1980-24 November 1983 again due to a military coup. This variable takes the value of 1 during the extraordinary years, zero otherwise. Then, we multiplied these by the number of the months in which extraordinary governments are in office. If the number of the days in any months exceeded fifteen we rounded this month to one.

Election: Dummy variable for elections. Created by using the Schuknecht(1996)'s definition as follows. We expect economic expansion in this year (t) if the election is held within January-April in the next year (t+1); and the contraction in the same year (t) if the election is held in January or February in that year (t); and contraction in the next year(t+1) if it is held between March and December of the year (t). We use the values of 1, -1, 0 for next , previous and current years, respectively, for the election dummy. We took both the nationwide general local and the central elections into account. In the analysis with the quarterly and the monthly data, we followed the same idea. For example if the election is held in June (t), then, we assigned 1 for the period February-June (i.e. from 't-5' to the end of 't'), and assigned -1 from July to December (i.e. from 't+1' to the end of the 't+6'), otherwise 0.

Number of Authorities: This is the number of fiscal authorities. There was two organisations during the period 1960-1983. They were the Ministry of Finance (MOF) and State Planning Organisation (SPO) which have prepared and implemented the budgets. The number of fiscal authorities was three after 1983. The Undersecretariat of Treasury was separated from the MOF and began planning and implementing the budget's cash flow and transfer policies (including debts) of the budgets. Therefore, the implementation of fiscal policies was dispersed between MOF, SPO and the Treasury after 1983. This variable takes the value of '2' before 1984, and '3' for 1984 onwards.

Number of Parties: The number of parties in the government. If the number of parties (P) is greater than or equal to two, then it means a coalition. In order to find P, we took the number of months into account by multiplying P by the monthly duration of a cabinet in force within a year. In other words,. Therefore, we used 1 when referring to whole year while we use the number of months if the governance is less than a year. In the analysis with quarterly and monthly data, we followed the same idea.

Number of Parties * Number of Authorities (PDI): This is our new power dispersion index. This dummy variable covers the interaction between the power of coalition parties and the fiscal authorities, which was overlooked by the previous studies. This variable is obtained by multiplying the number of parties by the number of authorities. The motivation behind this idea is as follows. The annual budget laws are prepared by the bureaucrats of the MOF and Treasury with some input from the State Planning Organization. They are then proposed by the government cabinet and

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budget figures are projected with respect to the (t-2) period GNP figures which is latest GNP figure during the budget preparation in (t-1) period. Second, two period-lagged growth rate is the only growth rate that is significantly different from zero.

[9] See Appendix for the data source.

discussed and approved by the Plan and Budget Committee and grand assembly of the parliament after a 75-day deliberation. During the implementation process, since the budget law is highly technical and complicated, the interpretation of the bureaucrats becomes as crucial as the projections of the politicians. The politicians depend on the support of the bureaucrats especially during the coalitions in order to play the prisoners' dilemma game against the coalition partners. Therefore, the number of authorities is of relevance for the impact of the number of parties since the bureaucrats have a special position in the budget preparation and implementation.

Roubini-Sachs Index (POL) : This index is the political dispersion index constructed in an identical way to that of the Roubini and Sachs (1989).

POL1, POL2 and **POL3** are political dummy variables used by Edin and Ohlsson (1991). POL1 assumes a value of 1 for two-party coalitions and zero otherwise. POL2 assumes a value of 1 for three or more party coalitions and zero otherwise. POL3 assumes a value of 1 for minority governments and zero otherwise.

IPI: Industrial Production Index. Since there is no monthly GNP series, we used IPI instead as a proxy. Also, since there is no quarterly GNP series before 1987, we derived quarterly GNP series by using IPI for the period before 1987.

Analyses with Annual Data (1960 – 2001) and (1985-2001)

The dependent variable is the budget expenditures, budget deficits and primary surplus[10] over gross national product and sub-totals of the budget. These dependent variables refer to the consolidated budget which includes the central (ministries) and annexed (universities, and state water affairs directorate, state highways directorate, state rural affairs directorate, etc.) budgets and excludes the budgets of state economic enterprises and the municipalities. In fact some authors use either debt/GNP or the quantity of money/GNP as the dependent variable. We couldn't use the debt/GNP because we have problems in unification of external and internal debt as well as their interest rates. The maturity of the debt was usually more important than the amount of debt itself in the 1990s. On the other hand, since the financial deepening was not stable during the most of the data period, we also didn't use quantity of money/GNP as a dependent variable. We prefer to use primary surplus/GNP as the dependent variable because this variable does not include interest payments which became non-stationary in the 1990s due to the increasing positive interest rates and instable political environment. Moreover, the timing of the causality between the political variables and the interest payments is very much different than that of the political variables and non-interest budget expenditures for two reasons. Firstly, the interest payments are included in the budget expenditures whenever they are paid. This means that budget expenditures include the interest payments but not the principal. Thus, the political variables affect not only the amount of the debt but also the maturity term and the interest burden of the debt. Secondly, the variables that are affecting the interest rates of the government debt are various and they are mostly out of the control of the governments compared to the other expenditures. Overall, both because of the timing of the causality and the circumstances that are affecting the interest and

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[10] Primary surplus is equal to the consolidated budget balance minus interest payments.

non-interest expenditures are very much different from each other, we prefer to use primary surplus as the dependent variable. As Figure 3 shows that this is the right approach to proceed because the ratio of interest payments to budget was 0.1%, 3%, 20%, 33% and 51% in 1960, 1970, 1980, 1990 and 2001, respectively. Therefore, without taking this drastic increase in interest payments into account, one cannot explain the rest of the budget expenditures because the rest is almost the residual of the interest payments. For this reason, we will also try to explain the causality between political stability and the interest payments and rates over the government debt.

FIGURE-3: The Trends in Budget Expenditures/GNP (BE_GNP), Non-Interest Payments/GNP (BE_I_Y), Budget Deficits/GNP (BD/GNP), and Primary Surplus/GNP (PS_GNP), 1960-2001, Turkey
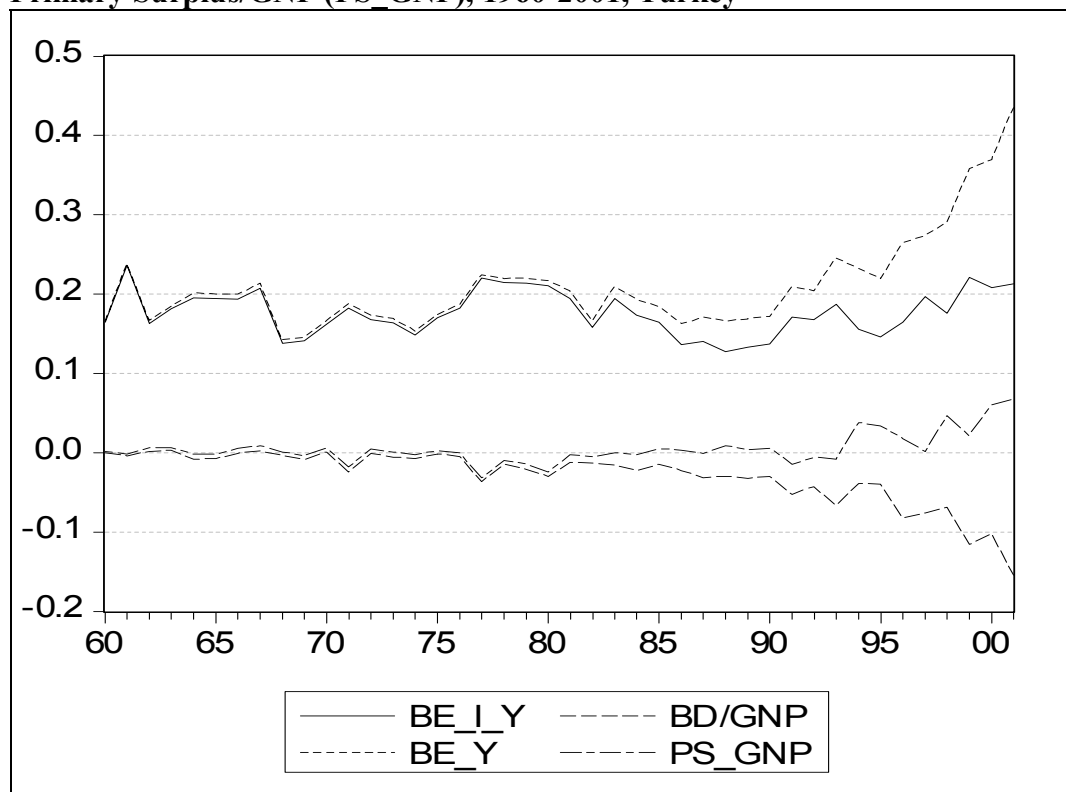
We expect that increases in the number of parties in the coalitions and elections increase the budget deficits thereby having negative coefficients. On the other hand, we expect that the extraordinary governments decrease the budget deficits. The estimation results with annual data are shown in Table 4 and 5 which give the effects of various political factors on budget expenditures,

[11] The Openness Index (VT/GNP) is the volume of trade over gross national product. The volume of trade is defined as the sum of the export and import values.

[12] Two period lagged growth rate is used for two reasons. First, current (t period) the macroeconomic budget figures are projected with respect to the (t-2) period GNP figures which is latest GNP figure during the budget preparation in (t-1) period. Second, two period-lagged growth rate is the only growth rate that is significantly different from zero.

[13] See Appendix for the data source.

budget deficits and primary surplus as a proportion of GNP during the periods of 1960-2001 and 1985-2001.

We estimated several models in order to find the best fitting one for the budget deficit/GNP and primary surplus/GNP. We used Akaike Information Criterion (AIC) in order to determine the number of the lags of the dependent variable. In all of the annual models accept Model 5 in Table 5, the adjusted R-squares are over 50%, which show that explanatory variables can explain more than half of the variation in the dependent variable. F-statistics show that the coefficients in equations are jointly significant. AR(2) and AR(1) statistic show the Breusch-Godfrey auto-correlation test values of order 2 and 1, respectively. Autocorrelation is rejected in all models in Table 4 and 5. The results of the ARCH (Autoregressive Conditional Heteroskedasticity) test show that only the models 1 and 3 in Table 4 might have volatility problem in the estimated dependent variable. Also, Jarque-Bera normality test indicates normality problem only in model 5 of Table 4. However, Ramsey's reset test indicates that models 2, 4, 5 and 6 in Table 4 might have functional misspesification problems.

One period-lagged dependent variable is used as an explanatory variable in 10 models, an two-period-lagged dependent variable is used in one model as the AIC test and economic models suggest. The lagged dependent variable allows slow adjustment of budget deficits and also account for inertial influences (see Schuknecht, 1996, and Haan and Sturm,1997). In estimating the models, two points have been taken into account. First, we include elections, inflation and growth rate into the regressions irrespective of their significance. In all models in Table 4, all election dummies have the expected negative sign but they are not significantly different from zero. Therefore, annual data does not show significantly the existence of political business cycles in Turkey between 1960-2001.

The second point investigated in Table 4 is the effects of the political dummy variables and the power dispersion index. For our purposes we first used new dummies (i.e. POL; POL1, POL2 and POL3) constructed according to the Roubini and Sachs (1989) and Edin and Ohlsson (1991). And then we constructed our own power dispersion index (PDI) to show the combined effects of fragmented governments and political and fiscal authorities. The fragmented governments refer to the coalitions in our study. Our dispersion index differs from that of Roubini and Sachs in three respects: First, the 'number of parties' assumes a value of real number of the parties in force while Roubini and Sachs assign values from 0 to 3 ranging from majority government to minority government. Haan and Sturm (1997, p.745) point out that there is no reason to assign a value of three to a minority government while assigning one to two-to-three party majority coalitions. In order to avoid this arbitrariness, we used only the number of parties for all kind of governments, even for majority, and minority governments. Second, we used monthly fractions for the 'number of parties' and the interaction term 'number of parties * number of authorities' in order to measure the duration of the power dispersion in any given year. Third, Roubini and Sachs, and Haan and Sturm used the changes in gross or net debt/GNP ratio as a dependent variable while we used consolidated budget deficit/GNP[11] or Primary Surplus/GNP ratio. As models 1 and 4 in Table 4 show, POL variable (i.e.

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[11] As Roubini and Sachs, and Haan and Sturm did, we also run various regressions for the ratio of Public Sector Borrowing Requirements to GNP(PSBR/GNP). The PSBR includes the debt requirement of consolidated budget, State Economic Enterprises(SEEs), local administrations, social security

Roubini and Sachs index) was statistically insignificant. In other words, Roubini and Sachs's model does not fit to the Turkish data. In models 2 and 5 it seems that POL1 and POL2 are significantly different from zero but their signs are unexpectedly positive. This means that if the number of the parties in the coalition is three or more or if there is a minority government in the office, then they decrease the budget deficits. The signs of our variable (PDI) in Models 3 and 6 are also positive and statistically significant in the case of model 6. The outcome of these models is suprising. Even Tutar and Tansel (2000) with a different model have shown that PDI has negative effects on the budget deficits[12]

Models 1 and 2 in Table 5 also show that the power dispersion index is insignificant. In model 3, the results show that fragmented fiscal authorities may even increase the budget revenues. In other words, both for 1960-2001 and 1985-2001 period undoubtedly coalitions or power dispersion in the fiscal governance is not a sole reason for not to be successful to reduce the budget deficit as opposed to the usual belief. However, as we go into the details of the annual data analysis in Table 5, our conclusions change. Models 4 and 5 show that as PDI increases, the interest payments and real interest rates on government debt also increase. The coefficient of PDI in Model 5 in Table 5 is significantly different from zero. This means that fragmented governments might be successful in reducing the non-interest expenditures and primary surplus because they cause increases in real interest rates, possibly because of increases in uncertainty premium of interest rates, implying increases in the interest payments from the budget. Therefore, since the public sources (appropriation) are limited even the coalition governments and fragmented fiscal authorities are required to be successful in reducing the budget deficit unavoidably. This is the reason behind the success of the coalition governments in Turkey.

In summary, these results are not consistent with the findings of Roubini and Sachs' (1989) Prisoner's Dilemma case. In normal circumstances, since the coalition partners have different constitutencies, it is expected that each partner will try to cut down the other partner's expenditures. If the number of authorities involved with the preparation and implementation of the budget increases (as it was the case in Turkey after 1983) the effects of the coalitions increase because coalition partners may share these organizations and create different constituencies among the bureaucrats.

During the first coalition after 1990, both the Ministry of Finance and the Treasury were controlled by the True Path Party. But during the coalition which began in March 1996, these organizations were shared amongst the coalition partners. A game theoretical approach can address the

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institutions, funds, revolving funds, and SEEs under privatization administration. In the estimation results, neither of the indices were significantly different from zero.

[14] As Roubini and Sachs, and Haan and Sturm did, we also run various regressions for the ratio of Public Sector Borrowing Requirements to GNP(PSBR/GNP). The PSBR includes the debt requirement of consolidated budget, State Economic Enterprises(SEEs), local administrations, social security institutions, funds, revolving funds, and SEEs under privatization administration. In the estimation results, neither of the indices were significantly different from zero.

[12] We didn't show those results here again but we can provide them upon request.

problems of bureaucrats of those fragmented fiscal administrations as well as the coalition parties. In other words, for the sake of stability, during the preparation and implementation of the budget, the Treasury, State Planning Organization and the Ministry of Finance would like to cut down the appropriation that is under the domain of the other organizations, but for the sake of their own benefit not their own appropriation. The reason for this is that a positive response to the politicians' demands can promise and provide more utility and prestige to any of the bureaucrats of these organizations. In fact, the separation of the Ministry of Finance and the Treasury might be the reason to create a soft budget constraint in order to satisfy constituencies by managing the State Economic Enterprises and off-budget funds without the intervention of the orthodox Ministry of Finance.

Furthermore, if there is no incentive to cut spending and if the authorities do not want to be seen as a scapegoat for economic contraction, spending will increase more than the normal trend. It is also possible that coalition partners cannot provide a consensus on spending cuts. In such cases the coalition either becomes unpopular or ceases. Both cases are the solutions to the prisoner's dilemma: either the highest deficits occur or no more game[13]. Even though the coalition partners know that this is not a one-shot game but will be repeated a fixed number of times, standard logic of the game does not change and coalition partners tend to defect (Varian, 1992, p.270). In fact, this is the reason for the short-tenured governments in Turkey in the 1990's. As Phlips (1988, p.160) points out, a dilemma is a dilemma, and cannot have a solution. However, in real life, collusive agreements have solutions. One of these solutions for firms in oligopoly markets is the pooling of revenues in order to deter cheating. Since, politics is more complicated than industrial relations, it is very difficult to pool political utility for coalition governments. Such issues are not addressed in this paper.

However, contrary to this generally accepted model, Turkey's case has shown to be different because of the repeated crises in 1994, 1998-99 and 2001. All of these crises have shown that Turkey has no way to go other than solving the unsustainability of the budget deficits. The only way to do is to size down the government expenditures and get primary surpluses. In fact, despite the coalitions, the governments were successful for getting positive primary surpluses after 1994 onwards. As Onis (2000) pointed out, even the recent coalition of CHP, MHP and ANAP, whose political perspectives range from left to extreme right, were successful in making some reforms and getting primary surpluses in 1999-2002.

Tables 4 and 5 show that elections have negative effects on budget expenditures and revenues but they are not significantly different from zero. Table 4 shows that military backed governments are not successful in reducing the budget deficits. This may be explained with the fact that the coups in Turkey were not directly related to fiscal deficits. Even though, Ceyhun (1992) conjectured that all three coups (1960, 1971 and 1980) were related to the debt crises which stemmed from Turkey's

[15] This can not be the compulsory spending item. But, for flexible cases such as transfers to the State Economic Enterprises, incentives from budgetary funds to the agricultural sectors, etc., increase in salaries are good examples for the prisoner's dilemma case.

[13] This can not be the compulsory spending item. But, for flexible cases such as transfers to the State Economic Enterprises, incentives from budgetary funds to the agricultural sectors, etc., increase in salaries are good examples for the prisoner's dilemma case.

industrialization policies, the military governments did not enact reforms for budgetary discipline or any kind of restraining or make improvements in budget balances. In the literature, the effects of restraining debts on budgets are inconclusive. Hagen (1991) examined 49 states of the USA and found that fiscal restraints did not prevent excessive borrowing but they led in some states for the records to be hidden while subsequent research found the opposite (Poterba and von Hagen,1999). Nonetheless, in Turkey new concepts were introduced during the military backed governments. For instance in 1961, central planning became a must for the public sector. As Önis and Reidel (1993) pointed out, the lack of any development plan before 1960 was a major indictment against the overthrown government. The coup of September 1980 adhered to the economic strategy of the stabilization program of the former government. Finally, the 1982 Constitution required that proposed appropriations in supplementary budgets are to be financed by predetermined resources. However, this does not work in real life because proposed revenues in supplementary budgets need not be realised by law and supplementary expenditures may be financed with debt. Therefore, the budgetary processes during the military backed governments were no different than those of the others.

Analyses with Quarterly Data

In order to analyze the effects of political power dispersion and political business cycles, we also used the quarterly data. By doing so we will be able to see the sensitivity of the budget deficit and sub totals of the budget expenditures to the elections and political power dispersion. Our quarterly data covers the period 1985:QI-2001:QIV.

The variables for quarterly data have the same meanings as do in the annual data. However, we finetuned the 'election' data, and power dispersion index[14]. As in the previous analysis, the power dispersion index (PDI) is found by multiplying the number of parties in the government by the number of fiscal authorities. The number of fiscal authority is two during the period 1985-2001. For this reason, PDI is equal to 2 times the number of parties in the governments. Our quarterly dummies are derived from Table 1 and 2.

Models in Tables 6 and 7 pass all the diagnostics tests, except the normality test. All models in Table 6 and models 2, 4 and 5 in Table 7 have normality problems. The number of the lags has been determined according to the AIC test. tests and Akaike's information criterion (AIC).

The Election variable has the expected signs and its coefficients are significantly different from zero except in models 3 and 5. According to models 1-5 in Table 6, elections increase the

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[16] The election assumed '1' for two quarters before the elections and zero after the elections. If the time interval left after an election is less than 45 days within a quarter, then we assign the value of 1 for the whole quarter in which an election is held. Otherwise we assign the value of zero to that quarter because we assume that political expenditures in that quarter cannot be a dominant driving force for the budget deficit.

[14] The election assumed '1' for two quarters before the elections and zero after the elections. If the time interval left after an election is less than 45 days within a quarter, then we assign the value of 1 for the whole quarter in which an election is held. Otherwise we assign the value of zero to that quarter because we assume that political expenditures in that quarter cannot be a dominant driving force for the budget deficit.

expenditures and affect the budget deficit and primary surplus negatively. According to Table 7, models 1-3, the transfers, personnel and public investment expenditures increase before the elections and decrease after them, as we hypothesized. However, only the coefficient of the Transfer (logarithmic) is significantly different from zero.

Our power dispersion index (PDI) has the expected and significant coefficients in almost all models in Tables 6 and 7. According to models 1-3, PDI increases budget expenditures and deficit but reduce the negative primary surplus. This means that PDI causes increases in interest payments. Model 5 in Table 7 confirms that PDI significantly increases the real interest rate. Model 5 in Table 6 also confirms that, like in the annual model, 3 or more party-coalitions (i.e. POL2) may be able to reduce the negative primary surplus. According to Table 7, PDI increases transfers, and other currents significantly but decreases personnel payments and investments. This may stem from the fact that coalition partners were not able to reconcile over the personnel spendings and investments, which are very political items and/or there is not enough source for these two items as they are usually treated as residual spending items. Big projects require a decision of the Higher Planning Council, which consists of various representatives from coalition parties. It is possible that during this period, the decision taking process might have been decelerated by the Council. Moreover, investments might not be attractive for politicians just before the elections because big investment projects can be fruitful only in the long-run. Haan, et al. (1996) have also reached the same conclusion by using the data of 22 OECD countries that the myopic and weak governments tend to cut capital expenditures more than other government expenditures.

Overall, the results are compatible with the existence of the political business hypothesis. In other words, except the other current expenditures, the general level of budget expenditures and other sub-totals increase before the elections and decrease after them. The other conclusion is that fragmented authorities and governments contribute negatively to the budget deficit but they may be able to decrease the primary deficit, by either decreasing expenditures or increasing revenues. Another important conclusion is that real interest rate on the government debt significantly increases with the fragmentation.

Analyses with Monthly Data

In order to see the effects of the elections and coalitions on budget expenditures and deficits, we used also monthly data for the period 1985:1-2001:12. However, in comparison of monthly results with others, we should be cautious as the dependent variables are not defined with respect to the GNP.

This period is very interesting in terms of measuring the effects of elections and coalitions because in this period there have been seven nation wide elections, four for members of the parliament (in November 1987, October 1991, December 1995 and April 1999) and three for local administrations (in March 1989, March 1994 and April 1999). For monthly data, the 'election' dummy assumes '1' for six months before and during an election, and '-1' two months after the election; zero otherwise.

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[17] Other current expenditures refer to non-personnel operational payments such as travel allowances, heating and gas and other consumption goods, services, furnitures and equipment and defence spending.

Since the beginning of December 1991 only coalition governments have been in office. There were six coalitions between December 1991 and November 2002. The tenures of these four governments are 19, 27, 3, 12, 18, and 41 months, respectively. In order to see the performance of these coalitions the mean of the real budget deficits or surplus(RBD) and inflation(Wholesale Price Index-WPI) of the coalition governments are given in Table 8. Table 9, which is derived from Table 8, shows that the tenure of the government is negatively correlated with the inflation while it is positively but insignificantly correlated with the real budget deficit (RBD). We believe that monthly data will show the effects of elections and coalitions very well as does the quarterly data because the annual data can cushion the effects of elections which is impossible to hide in the monthly data. Our primary focus in the monthly data is the election dummy and the political power dispersion index.

The diagnostics test in Table 10 show that models have no misspesification problems but they have normality problem. There is autocorrelation in model 5 and heteroscedasticity problem in model 4 in Table 10, which invalidates the standard error formula and associated statistical inferences. In Table 11, all models suffer from normality and misspecification problems. Converting the models into growth or logarthmic forms didn't cure the problems. For this reason, models in Table 11 should be interpreted with caution.

According to Table 10, all models except model 3 show that the coefficients of the 'election' have the expected signs but they are insignificant. Before elections, real budget deficit, primary deficit and real interest rate all increase. Table 11 shows that all of the budget sub-totals increase before the elections but only the coefficient of the real investments is significantly different from zero. Therefore, the monthly data also shows that there is a political business cycle in Turkey. Except the investments, this result supports the annual and quarterly results.

The monthly data analyses in Table 10 and 11 show that the coefficients of the power dispersion index (number of parties * number of fiscal authorities) are significantly different from zero. According to models 4 and 5 in Table 10 and models 1 and 4 in Table 11, power dispersion increases real interest rates for government debt but decreases real personnel payments, primary deficit (i.e. negative primary surplus) and real investments. These signs are appropriate to the quarterly models. Investments are affected negatively while transfers are affected positively by power dispersion, as expected. Especially after 1990 the investment expenditures became a residual item among other expenditures. Governments couldn't avoid serving the debt and its interest payments. Interest payments are accounted for in transfer expenditures. But projected investments are avoided in one way or another. To put it differently, the flexibility of government expenditures has been decreased drastically and this puts pressure on investments and personnel payments.

V. Policy Implications

In this section, we will note the effects of inflation and GNP growth rate on the budget deficit and expenditures. In general, the results indicate that current inflation decreases the budget

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[18] For monthly data, the 'election' dummy assumes '1' for six months before and during an election, and '-1' two months after the election; zero otherwise. 'election1' dummy has '1's for four months before and during the elections; zero otherwise.

expenditures and the budget deficits. The growth rate affects the budget positively. In other words, decreases in GNP growth rises the budget deficits. These results imply that Turkish economy must put more emphasis on growth than inflation for sustainable budget deificits.

Second implication of the models is construction of the power dispersion indices. Previous studies proposed indices for fragmented governments but the one constructed for Turkey covers also the fragmented fiscal authorities. Our results show that the fragmentation does not necessarily causes deficits. If the economic conditions are in the unsustainable path, even the coalition governments and fragmented authorities can act in a determined manner. The other important implication of the analyses is the unification of the MOF, and Treasury. This may also allow the existence of a powerful and single fiscal authority that can resist to dispersion and pressures more easily. This unification is also crucial for the coordination of the separate public bodies. Atiyas and Sayin(1997) recommend cooperation of the MOF and the Treasury. However, as we said earlier, repeated games in the Prisoner's Dilemma case tend to defect. Therefore, combining them for better cash management and debt policy might be more helpful because debt is closely related to the flows of revenues and expenditures that are in the domain of the MOF.

Third implication of the analyses is that quarterly and monthly data are more appropriate than annual data in order to observe the political business cycles because elections usually do not affect the longer run budget deficit. In other words, appropriation can be easily reallocated within a year among the periods and sub items for political purposes. This means that populism rather than the efficiency takes the priority in public expenditures. Politicians and researchers usually deal with budgets on a macro level disregarding its micro efficiency. These analyses draw our attention to two main points: One is the dispersion of the political and administrative power and the other is the inefficiency that might stem from political business cycles. In order to reduce the discretion and increase the budget performance a restructuring of the budgetary cycle is needed. Campos and Pradhan(1996) propose some budgetary principles for fiscal performance. The common ones are transparency, and accountability. For example, in New Zealand after enacting The Fiscal Responsibility Act in 1993, the ministers and public officials were held responsible from projected outputs. This increased the fiscal performance (Campos and Pradhan, 1996, p.14-19.) In order to avoid political business cycles, the discretion of the governments should be reduced. This can be reduced, first, by reducing the contingent appropriation items such as personnel contingencies. The second condition for reducing discretion is that extra spending should be as difficult as imposing an extra tax. In this respect, currently there is an asymmetry in Turkey. Taxes can be imposed only by a new act while most of the transfers (such as duty losses[15] of State Economic Enterprises and all kinds of incentives) can be increased by a cabinet decree.

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[19] In fact, an integrated World Bank project was initiated in 1994 for restructuring the budget but important parts of the project have been abolished and the rest has been decelerated.

[15] If a government assigns a duty to any SEEs such as government banks, to intervene with goods and credit markets in order to favor a sector, then losses accrued from this duty is called duty loss

VI.   CONCLUSION

The existence of political business cycles (PBCs) in Turkey was tested using annual (1960-2001), quarterly (1985:QI-2001:QIV) and monthly data (1985:1-2001:12). The coefficients of the election are significantly different from zero only in quarterly and monthly models. Thus, the quarterly and monthly data show the existence of the political business cycles. According to the results, PBCs in Turkey affect significantly the transfers and investments. This shows that testing PBCs should be done with shorter frequencies of data. This implies that elections might be causing significant increases in the annual ceilings of consolidated budgets but they are possibly causing misallocation and inefficiencies in seasonal expenditures and contingent appropriations.

Estimation results show also that a power dispersion index should cover the interaction between coalition parties and fiscal organizations that are authorized to prepare and implement the budget. The analyses show that a separate Treasury from the Ministry of Finance and the State Planning Organisation under the existence of coalition governments adversely affected the consolidated budget deficits in Turkey. As annual and quarterly results indicate, this adverse effect stems from the fact that coalitions are causing increases in interest rates on government debt and therefore the interest payments from the budget. Moreover, the coalition parties usually shared the fiscal authorities and controlled the different areas of government expenditures in recent years. These results may also imply that the Prisoner's Dilemma case might exist in budget expenditures. However, monthly data shows that except for the transfer items, power dispersion index (PDI) does not cause increases in other sub-totals of budget expenditures. These results indicate that after all crises in Turkey, the coalitions have to be successful in reducing budget deficits because there is no room for other kind of actions. Coalitions are not successful in reducing interest payments (and budget deficits) but successful in reducing primary deficits. This verifies the assertion that the higher the number of fiscal authorities and number of parties in coalition governments, the larger will be the budget deficits.

The results indicate that current inflation decreases the budget expenditures and the budget deficits. The growth rate affects the budget balances positively. In other words, decreases in GNP growth rate rise the budget deficits. These results imply that Turkish economy must put more emphasis on growth than inflation for sustainable budget deficits. The effects of coups were usually negative but the coefficients were not significant. Sound fiscal policies should begin with canceling all off-budget expenditures and unification of Treasury with the Ministry of Finance in order to decrease effects of political power dispersion (i.e. a case of the Prisoner's Dilemma).

For the future research, inefficiencies that can stem from elections should be considered. The effects of elections on prices of public goods, and public sector employment should also be researched for complete coverage of political business cycles.

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[20] If a government assigns a duty to any SEEs such as government banks, to intervene with goods and credit markets in order to favor a sector, then losses accrued from this duty is called duty loss.

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TABLE-1: **Elections** **and**
Governments in 1960-2001, Turkey.

Date of the Elections	Duration of the Government	Parties in The Government
...	25.11.1957-27.5.1960	DP
15.10.1961(CE)	30.5.1960-28.10.1961	Extraordinary
...	20.11.1961-1.6.1962	CHP+AP
17.11.1963(LO)	25.6.1962-2.12.1963	CHP+YTP+CKMP+BG
...	25.12.1963-13.2.1965	CHP+BG
10.10.1965(CE)	20.2.1965-22.10.1965	AP+CKMP+MP+YTP
(2.6.1968(LO)	27.10.1965-27.10.1969	AP+CKMP+MP+YTP
12.10.1969(CE)	3.11.1969-14.2.1970	AP
...	6.3.1970-12.3.1971	AP

...	26.3.1971-3.12.1971	Extraordinary
...	11.12.1971-17.4.1972	Extraordinary
...	22.5.1972-10.4.1973	Extraordinary
14.10.1973 (CE); 9.12.1973(LO)	15.4.1973-16.12.1973	AP+CGP
...	26.1.1974-16.9.1974	CHP+MSP
...	16.11.1974-31.3.1975	Temporary (N)
5.6.1977(CE)	31.3.1975-21.6.1977	AP+MSP+MHP+CGP
...	21.6.1977-3.7.1977	CHP(N)
11.12.1977(LO)	21.7.1977-31.12.1977	AP+MSP+MHP
...	5.1.1978-17.10.1979	CHP+BG+CGP+DP
...	12.11.1979-12.9.1980	AP(minority)
...	22.9.1980-24.11.1983	Extraordinary
6.11.1983(CE); 25.3.1984 (LO)	1.3.1983-21.12.1987	ANAP
29.11.1987 (CE)	21.12.1987-09.11.1989	ANAP
26.03.1989 (LO)	09.11.1989-23.06.1991	ANAP
20.10.1991(CE)	23.06.1991-20.11.1991	ANAP
...	21.11.1991-25.06.1993	DYP+SHP
27.03.1994(LO)	25.06.1993-05.10.1995	DYP+SHP/CHP
24.12.1995(CE)	05.10.1995-30.10.1995	DYP+SHP/CHP
...	30.10.1995-06.03.1996	DYP+SHP/CHP
...	06.03.1996-28.06.1996	ANAP+DYP
...	28.06.1996-30.06.1997	RP+DYP
...	30.06.1997-11.01.1999	DSP+ANAP+DTP
18.04.1999(CE and LO)	11.01.1999-28.05.1999	DSP(Minority)
...	28.05.1999-4.11.2002	DSP+MHP+ANAP

Notes: 1)CE shows the central elections; LO, the local ones. 2) Extraordinary governments shows the governments that came to the office after a military intervention. 3) N shows the non-qualified governments.

Source: Sanal, Turker (1995), Turkiye Cumhuriyeti ve 50 Hukumeti (Turkish Republic and its 50 Governments), Sim Matbacılık, 390 p. and The Website of the Turkish Grand Assembly (www.tbmm.gov.tr).

TABLE-2 : Dummy Variables for Political Business Cycle and Power Dispersion Models, 1983-2001,Turkey.

Years	Military Backed Government	Election	Number of Coalition Parties	Number of Authorities	Roubini-Sachs Index (POL)	New Power Dispersion Index (PDI)	POL1	POL2	POL3
1983	1	1	1	3	0	3	0	0	0
1984	0	1	1	2	0	2	0	0	0
1985	0	-1	1	2	0	2	0	0	0
1986	0	0	1	2	0	2	0	0	0
1987	0	1	1	2	0	2	0	0	0

1988	0	0	1	2	0	2	0	0	0
1989	0	1	1	2	0	2	0	0	0
1990	0	-1	1	2	0	2	0	0	0
1991	0	1	1	2	0	2	0	0	0
1992	0	-1	1	2	0	2	0	0	0
1993	0	0	1.5	2	0	3	0	0	0
1994	0	1	2	2	1	4	1	0	0
1995	0	1	2	2	1	4	1	0	0
1996	0	-1	2	2	1	4	1	0	0
1997	0	0	2.5	2	1	5	1	0	0
1998	0	0	3	2	2	6	0	1	0
1999	0	1	3	2	2	6	0	0	1
2000	0	-1	3	2	2	6	0	1	0
2001	0	0	3	2	2	6	0	1	0

TABLE-3: The GNP Growth Rate, Inflation and Budget Deficit/GNP during the period 1960-2001, Turkey

	Growth	Inflation	Deficit/GNP
Extraordinary Gov.(1960-61; 1971-73;1981-83)	0.05	18%	-0.010
Elect Government(1962-1970)	0.07	5%	-0.009
Elect Government(1974-1980)	0.03	43%	-0.016
Elect Government(1984-2001)	0.04	62%	-0.057
Elect Government(1960-2001)	0.05	37%	-0.033

TABLE-4: OLS ESTIMATION: The Effects of Various Political Factors on Budget Deficit(BD)/GNP and Primary Surplus(PS)/GNP, 1960-2001, Turkey

No.	MO	M	M	MO	MO	MO
Dependent Variable	BD/GNP	BD/GNP	BD/GNP	PS/GNP	PS/GNP	PS/GNP
Con,	-0.0	-0.	-0.	-0.0	-0.0	-0.0

stant	07(3.09)*	09(3.46)*	09(3.54)*	1(1.68)	2(2.88)	2(2.24)
DEPVAR(-1)	0.635(25.9)*	0.645(26.2)*	0.645(24.9)*	0.22(1.12)	0.22(1.31)	0.20(1.10)
Growth	0.070(4.15)*	0.060(3.59)*	0.073(4.51)*	-0.05(0.92)	-0.05(0.98)	-
Growth(-1)	-	-	-	-	-	-0.06(0.98)
Election	-0.0004(0.53)	-0.00003(0.0004)	-0.00004(0.49)	-0.0003(1.13)	-0.0004(1.65)***	-0.0002(0.68)
Military Backed Government	-0.0001(0.55)	0.002(0.09)	-0.00005(0.25)	-0.0005(0.74)	0.001(0.23)	-0.0002(0.33)
Inflation	0.0002(5.80)*	0.0002(5.83)	0.0002(5.89)	-0.00002(1.4)	-0.00002(1.56)	-0.00002(1.4

		)*	)*	9)		8)
Volume of Trade/GNP	-0.005 (0.36)	0.001 ((0.08)	-0.0004 (0.36)	0.13 (3.23)*	0.14 (4.07)*	0.10 (2.61)*
Power Dispersion Index (PDI)	-	-	0.0004 (0.70)	-	-	0.003 (1.75)***
POL	-0.00001 (0.16)		-	0.002 (0.64)	-	-
POL1		0.003 (1.78)***	-	-	-0.004 (0.70)	-
POL2		0.001 (0.90)	-	-	0.02 (3.66)*	-
POL3		-0.0002 (0.62)	-	-	-0.009 (0.98)	-
R^2	0.99	0.99	0.99	0.59	0.74	0.61
Adjusted	0.99	0.99	0.99	0.50	0.66	0.53

R^2						
Durbin Watson	1.30	1.52	1.33	2.04	1.76	1.95
F-Statistics	438.9 (0.00)	363.9 (0.000)	445.3 (0.000)	6.65 (0.000)	9.60 (0.00)	7.37
AR(2)	1.86 (0.17)	1.27 (0.30)	1.67 (0.20)	0.11 (0.889)	0.84 (0.4)	0.13 (0.88)
AR(1)	3.24 (0.08)***	0.94 (0.34)	3.08 (0.09)***	0.18 (0.68)	1.07 (0.31)	0.0007 (0.999)*
ARCH(2)	2.90 (0.07)***	2.84 (0.07)***	2.92 (0.07)***	0.32 (0.73)	0.35 (0.71)	0.11 (0.89)
ARCH(1)	3.67 (0.06)***	1.09 (0.30)	2.99 (0.09)***	0.78 (0.38)	0.05 (0.83)	0.17 (0.68)
Normality (Jarque-Bera)	1.05 (0.59)	0.77 (0.68)	2.45 (0.13)	0.97 (0.62)	4.84 (0.09)***	1.53 (0.46)
Ramsey's Reset (1) (F-form)	2.20 (0.15)	5.11 (0.03)**	1.15 (0.56)	3.12 (0.09)**	3.81 (0.06)***	5.42 (0.03)

Note: The numbers in parentheses are absolute value of t statistics. * and ** show the significant coefficients at 5% and 10% significance level, respectively. The number in parentheses nearby the tests show the probability of not rejecting the null hypotheses of the corresponding tests. Ramsey's Reset test shows that the models with (*), (**) and (***) have misspecification problems at 1, 5 and 10% significance level, respectively, which we couldn't get rid of with existing data and the model. The number in parenthesis nearby Ramsey's reset test shows the number of fitted terms.

TABLE-5: OLS ESTIMATION: The Effects of Various Political Factors on Budgetary Aggregates-to-GNP, 1985-2001, Turkey

No.	MO	MO	MO	MO	MO
Dependent Variable	Primary Surplus/ GNP	(Budget Expenditures-Interest payments)/GNP	Revenues/ GNP	Interest Payments/GNP	Real Interest Rates
Constant	-0.05 (1.49)	0.13 (2.05)***	0.04 (1.50)	-0.002 (0.08)	-0.068 (0.53)
Dep var(-1)	-0.07 (0.21)	0.19 (0.56)	0.69 (3.36)*	0.30 (0.96)	-0.39 (1.14)
Dep var (-2)	-	-	-	0.92 (2.82)**	-
Growth	-0.07 (0.88)	-0.08 (0.6	-0.09 (1.3	-0.19 (2.7	-0.80 (0.8

		6)	9)	8) **	2)
Election	-0.003 (0.48)	-0.002 (0.22)	-0.005 (1.28)	0.005 (0.10)	0.05 (1.03)
Inflation	0.0004 (0.19)	-0.0002 (0.80)	0.0002 (0.10)	-0.0001 (0.84)	-
VT/GNP	0.16 (1.03)	-0.08 (0.48)	-0.08 (0.81)	0.07 (0.54)	-
Power Dispersion Index (PDI)	0.005 (0.84)	0.015 (1.69)	0.01 (2.85) **	0.006 (0.11)	0.05 (1.77) ***
R^2	0.71	0.68	0.96	0.97	0.55
Adjusted R^2	0.54	0.50	0.94	0.95	0.40
Durbin Watson	2.29	2.18	2.29	1.65	1.88
F-Statistics	4.05 (0.02)	3.55 (0.04)	41.5 (0.00)	43.5 (0.00)	3.64 (0.04)
AR(2)	2.13 (0.18)	0.20 (0.82)	0.37 (0.70)	0.79 (0.49)	0.05 (0.96)
AR(1)	1.93 (0.20)	0.45 (0.52)	0.67 (0.44)	0.86 (0.38)	0.08 (0.78)
ARCH(2)	0.79 (0.48)	0.32 (0.73)	0.20 (0.82)	0.44 (0.65)	0.75 (0.49)
ARCH(1)	0.03 (0.86)	0.13 (0.72)	0.54 (0.48)	0.36 (0.56)	0.33 (0.58)
Normality (Jarque-Bera)	1.66 (0.44)	1.11 (0.58)	0.56 (0.76)	0.12 (0.94)	2.66 (0.26)
Ramsey's	0.69 (0.	0.16 (0	3.36 (0	3.06 (0.1	2.57 (0

R^2	0.78	0.95	0.58	0.57	0.62
Adjusted R^2	0.76	0.94	0.55	0.54	0.57
F-Statistics	43.5 (0.00)	176. 1(0.00)	16.6 (0.00)	16.1 (0.00)	13.5 (0.00)
Durbin-Watson	2.19	1.81	1.99	1.92	2.14
AR(2)	1.68 (0.20)	4.29 (0.02)**	1.46 (0.24)	1.47 (0.24)	2.82 (0.07)*
AR(1)	1.79 (0.19)	0.08 (0.78)	0.01 (0.91)	0.04 (0.85)	0.49 (0.49)
ARCH(2)	0.02 (0.98)	1.47 (0.23)	0.01 (0.99)	0.005 (0.99)	0.0001 (0.99)
ARCH(1)	0.006 (0.94)	2.19 (0.19)	0.02 (0.89)	0.01 (0.92)	0.0004 (0.99)
Normality (Jarque-Bera)	10.2 (0.006)*	50.0 (0.00)*	68.0 (0.00)*	68.2 (0.00)*	86.2 (0.00)*
Ramsey's Reset Test (3) F Form	0.12 (0.74)	1.70 (0.20)	1.55 (0.22)	1.08 (0.30)	2.70 (0.11)

Note: Numbers in parentheses are t statistics.(*), (**) and (***) show the significant coefficients at the 1%, 5% and 10% critical levels, respectively. For both tests, numbers in parentheses near the F, AR, ARCH, Normality and Reset tests show the probability of not rejecting null hypotheses. The number in parenthesis nearby Ramsey's reset test shows the number of fitted terms.

TABLE-7 : OLS ESTIMATION: The Effects of Various Political Factors on Budget Expenditures with Quarterly Data, 1985:QI-2001:QIV, Turkey

	MODEL 1:	MODEL 2:	MODEL 3:	MODEL 4:	MODEL 5:
Dependent Variable	Log Transfer /GNP	Personnel Payments /GNP	Investments /GNP	Other currents /GNP	Real Interest Rate
Constant	-1.47 (3.16)*	0.01 (2.46)*	0.008 (2.89)*	-0.001 (0.87)	-0.004 (0.21)
DEPVAR(-1)	-0.05 (0.38)	0.40 (4.15)*	-	-	0.75 (7.72)*
DEPVAR (-2)	-	-	0.35 (3.91)*	-	-
DEPVAR (-4)	0.51 (4.85)*	0.54 (4.62)*	0.41 (4.02)*	0.98 (23.4)*	-0.22 (2.27)**
INFLATION	0.0004 (2.86)*	.000003 (0.81)	0.000004 (2.40)*	-0.0000002 (0.15)	0.00001 (0.39)
GROWTH	-	-0.02 (3.67)*	-	-0.0005 (0.29)	-
GROWTH(-1)	-0.31 (1.96)***	-	0.02 (4.61)*		-0.053 (1.79)***
ELECTION	0.10 (1.65)***	0.002 (0.76)	0.0006 (0.60)	-0.0008 (1.08)	-0.01 (0.85)
Power Dispersion Index (PDI)	0.07 (2.29)**	-0.001 (1.11)	-0.001 (2.84)*	0.0005 (1.67)***	0.01 (1.89)***
POL	-	-	-	-	-

POL1	-	-	-	-	-
POL2	-	-	-	-	-
POL3	-	-	-	-	-
R^2	0.76	0.81	0.83	0.92	0.56
Adjusted R^2	0.74	0.79	0.82	0.91	0.52
F-Statistics	30.5 (0.00)	40.1 (0.00)	47.3 (0.00)	140.2	12.9 (0.00)
Durbin-Watson	1.94	1.90	1.63	2.34	2.45
AR(2)	0.14 (0.87)	2.41 (0.10)	1.22 (0.30)	1.17 (0.32)	4.51 (0.02)**
AR(1)	0.14 (0.71)	0.18 (0.68)	1.57 (0.22)	1.89 (0.17)	8.21 (0.006)*
ARCH(2)	0.03 (0.97)	0.38 (0.69)	2.71 (0.07)***	0.19 (0.83)	0.07 (0.93)
ARCH(1)	0.09 (0.76)	0.74 (0.39)	0.01 (0.92)	0.15 (0.70)	0.003 (0.96)
Normality (Jarque-Bera)	0.28 (0.87)	5.87 (0.05)**	2.95 (0.23)	116.1 (0.00)*	20.3 (0.00)*
Ramsey's Reset Test (3) F Form	2.70 (0.11)	1.29 (0.26)	0.01 (0.91)	2.40 (0.13)	0.006 (0.94)

Note: Numbers in parentheses are t statistics.(*), (**) and (***) show the significant coefficients at the 1%, 5% and 10% critical levels, respectively. For both tests, numbers in parentheses near the F, AR, ARCH, Normality and Reset tests show the probability of not rejecting null hypotheses. The number in parenthesis nearby Ramsey's reset test shows the number of fitted terms.

TABLE-8: Government Tenure versus Inflation and Deficits, 1985-2001, Turkey

Parties in the Government	Period Covered	Length of The Service (in Months)	Monthly Real Budget Deficit Average	Monthly Inflation (WPI) Average
ANAP	83/3-87/12	58	-100	2.8
ANAP	87/12-89/11	23	-163	4.3
ANAP	89/11-91/6	18	-255	3.8
ANAP	91/6-91/11	5	-395	3.4
DYP+SHP	91/12-93/5	19	-490	3.3

DYP+SHP/CHP	93/6-95/9	27	-379	5.2
ANAP+DYP	96/3-96/5	3	-806	6.4
RP+DYP	96/7-97/6	12	-841	4.8
DSP+ANAP+DTP	97/7-99/1	18	-899	4.3
DSP(Minority)	99/1-99/5	4	-1525	4.1
DSP+MHP+ANAP	99/5-02/11	41	-1325	4.1

TABLE-9: Correlation Coefficients of Tenures and Performances of the Governments, 1985-2001, Turkey

	TENURE	RBD	INFLATION
TENURE	1.00	0.31	-0.46
RBD	0.31	1.00	0.28
INFLATION	-0.46	0.28	1.00