POLITICAL MONETARY CYCLES IN COALITION AND SINGLE PARTY GOVERNMENT PERIODS: A CASE STUDY ON TURKEY

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Abstract

According to the theory of political monetary cycles, the government manipulates monetary policy during election periods in order to be re-elected. According to the said theory, expansionary monetary policies are implemented before the elections with opportunistic objective, while the contractionary monetary policies are implemented to stabilize the economy immediately after the elections. The use of monetary policy instruments for political purposes depends on the presence of a non-autonomous central bank, flexible exchange rate regime in the country, and the coordination between fiscal and monetary policies. Thus, the changes in the monetary policy indicators in election periods during coalition and single party governments in Turkey between 1990 and 2016 were examined in the present study. The money in circulation (M0), M1 money supply, domestic loans and inflation series were analyzed with the seasonal Box-Jenkins method for the above mentioned periods. Based on the findings of the study, political monetary cycles were not observed during the 1990-2000 coalition governments. It was determined that there were political monetary cycles during the single party government period between 2000 and 2016.Furthermore, although it could be expected that the political monetary cycles would be removed with the liberalization of the Turkish central bank on 25 April 2001, the existence of political monetary cycles during the period of 2000-2016 indicates that central bank independence was not fully achieved in Turkey. Based on another finding of the present study, the lack of political monetary cycles during the coalition government periods could lead to the failure in financing the budget deficit that increase due to political reasons with monetary policies. However, due to the existence of political monetary cycles during the single party government period, it could be argued that politically induced budget deficits changed in consistence with the monetary policy.

1. Introduction

The political business cycle theories that are at the juncture of economic and political sciences are based on the positive public choice theory. In the positive section of the public choice theory, the relationships between the economic actors in the political arena and their behavior are analyzed. Based on the heterogeneity of interest, voters target utility and governments target the maximization of votes (Eryılmaz, 2015: 367). In particular, the use of economic policy instruments by the government during election periods to influence the voters and pressure groups internalized the position of the state (Nordhaus, 1989: 2). Thus, political business cycle theories generally examine the political reasons of economic fluctuations. During election periods, the government attempts to influence the electorate using its monetary and fiscal policy tools to be re-elected. As a consequence, fluctuations in the economy emerge (Andrikopoulos et al., 2004: 126; Eryılmaz and Mercan, 2015: 6).

Political business cycle theories were first analyzed by Kalecki (1943) and Akerman (1947). After further contributions, the theory became formal in the 1970's and began to be systematically examined. Political business cycle theories divide voters and politicians into two groups based on the presence of ideological differences. If there are no ideological differences between voters and politicians, "Opportunistic Political Business Cycle Theories" are valid. However, if there are ideological differences between voters and politicians, "Partisan Political Business Cycle Theories"

are valid (Alesina and Roubini, 1990: 1). In addition to these theories, with the rational expectations revolution by Muth in 1961, new variations were introduced to political business cycle theories based on expectations. Accordingly, the models dominated by adaptive expectations were divided into two groups as "Traditional Opportunist Political Business Cycle Theories" and "Traditional Partisan Political Business Cycle Theories" under the title of traditional business cycles. Under the influence of rational expectations, the theories were examined under the headings of "Modern Opportunist Political Business Cycle Theories" and "Modern Partisan Political Business Cycle Theories" (Alesina, 1989: 58).

Traditional Opportunist Political Business Cycle Theories are based on studies by Nordhaus (1975), MacRae (1977) and Lindbeck (1976) (Alesina, 1987: 651). According to the theory, election periods are exogenous while voters are homogeneous. Voters conduct voting behavior based on the parties' economic achievements. Hence, the government manipulates the economic policy instruments to be re-elected (Nordhaus, 1975: 169-189). Furthemore, the government also utilizes the Phillips curve, which was developed with expectations, in the manipulation of policy instruments. Prior to the elections, the ruling party implements expansionary monetary and fiscal policies in an attempt to transform the myopic perceptions of the electorate to its favor. In the immediate post-election period, the government implements contractionary policies to overcome the instabilities that occurred due to the expansionary policies. Consequently, economic fluctuations emerge (MacRae, 1977: 246; Eryılmaz and Murat, 2014: 72).Traditional Partisan Political Business Cycle Theories are based on a study by Hibbs (1977). In this theory, it is assumed that electorate and politicians have different ideologies. Therefore, politicians conduct policies that would please their electorate base. For example, right-wing parties implement policies to reduce inflation to protect the interests of the capitalist groups. Leftist party groups aim at reducing the unemployment to increase the wealth of the working class (Hibbs, 1977: 1470). Since it is not possible to reduce inflation and unemployment concurrently based on the expectations-augmented Phillips curve, the cost of implementing an objective would be to give up the other objective. In the elections, different parties would hold the government, leading to fluctuations in macroeconomic indicators (Mevorach, 1989: 178; Eryılmaz and Murat, 2016: 200).

The Modern Opportunistic Political Business Cycle Theory, which is one of the modern theories that are based on rational expectations and game theories, was developed in the studies by Cukierman-Meltzer (1986), Rogoff-Sibert (1988), Rogoff (1990) and Persson-Tabellini (1990). According to the theory, there is no ideological difference between voters and politicians. Furthermore, there is asymmetric information on utilized policy instruments and the economic performance between voters and politicians. Thus, before the elections, the government sends a signal of ability to the electorate and pressure groups on the management of the economy (Rogoff and Sibert, 1988: 4).The ability signal is related to budget management, exchange rate policies and tax policies. For example, consumption spending is prioritized immediately before the elections instead of investment expenditures for immediate awareness of the electorate (Rogoff, 1990: 21). Thus, conducting the same public spending with less tax could facilitate the re-election of the government (Rogoff and Sibert, 1988: 2). Furthermore, as an ability signal, government postponing the devaluation until after the elections demonstrates the opportunist objectives of the government (Stein and Streb, 2004: 119-145; Dornbusch, 1987: 1-18; Eryılmaz and Murat, 2016: 251; Eryılmaz, 2015: 536; Tayyar, 2017: 4-14). As a result, the economy would fluctuate in the short run due to the differences of information between the two. In the long run, economic fluctuations would not occur as the information gap is reduced. Modern Partisan Political Business Cycle Theories are based on the work by Alesina (1987 and 1988). The theory was based on the uncertainty of the elections and strict nominal wages under the assumption that both voters and parties are heterogeneous (Drazen, 2000: 89-90). Since the winner of the elections is uncertain particularly during the election periods, the expected and realized inflation rates differ. If the right-wing party is expected to win the elections before the election, since the right party would aim at

low inflation, a lower expected inflation rate is reflected in the contracts (Alesina, 1987: 77-98). However, as the left-wing party makes a surprise and wins the elections, the realized inflation would rise since the left-wing party would aim at a higher inflation. Therefore, short-term fluctuations would be observed in the economy until the actual inflation would be equal to the expected inflation. Economy would gain the equilibrium in the long run since the balance between the actual inflation and expected inflation would be established (Alesina, Roubini and Cohen, 1997: 51).

The objective of the present study was to investigate the presence of political monetary cycles during the coalition and single party government periods between 1990 and 2016. It was considered that the current study would contribute to the literature due to the lack of previous studies that analyzed the changes in monetary policy instruments during the coalition and single party government periods in Turkey based on the political business cycle theory. In the study, the 1990-2000 coalition governments and the 2000-2016 single party government periods were analyzed with the seasonal Box-Jenkins model based on the political monetary cycle theory using the money in circulation (M0), M1 money supply, domestic loans and inflation variables. The study included 6 sections and in the second part, the theory of political monetary cycles was discussed. In the third section, the general political and economic conditions during the coalition and single party governments in Turkey between 1990-2016 were analyzed. In the fourth section, the study dataset and the dummy variables were addressed. In the fifth findings section, initially ADF, PP, Ng-Perron and Lee-Strazicich (2003) two structural break unit root stationarity tests were applied. After the stationarity processes, money in circulation, M1 money supply, domestic loans and inflation series were examined with the seasonal Box-Jenkins method for the elections in 1990-2000 coalition government, 2000-2016 single party government periods. In the sixth and final section, the results and the evaluations are presented.

2. Political Monetary Cycles Theory

The Theory of Political Monetary Cycles differs based on the economic policy instruments that the government uses to influence voters during the election period. According to this theory, the governments implement expansionary monetary policies by pressuring the central bank before the elections, leading to an increase in money supply due to political concerns. Immediately after the elections, a contractionary monetary policy is adopted to eliminate the negative effects on the economy (Grier, 1987: 243; Asutay, 2005: 3). Monetary policies implemented with political concerns affect the economy through two mechanisms. The first is the reduction in unemployment and increase in inflation by the increase in money supply before the elections via expectations-augmented Phillips curve. Furthermore, as the short-term Phillips curve is more oblique than the long term Phillips curve, expansionary policies would decrease unemployment more when compared to the increase in inflation (Alpanda and Honig, 2009: 3). The second mechanism is via the adaptive increase in money supply to finance the budget deficit that increased during the election. Thus, monetization of the increased budget during the election period leads to the use of passive monetary policies (Leeper and Walker, 2011: 27). Several studies investigated the existence of political monetary cycles and these studies resulted in different findings for developed and developing countries. The findings of studies by Tufte (1978), Maloney and Smirlock (1981), Laney and Willett (1983), and Grier (1983), Haynes and Stone (1989) and Abrams-Iossifov (2006) supported political monetary cycles, while Golden and Poterba (1980), Beck (1987), Alesina and Roubini (1992) failed to find any results regarding political monetary cycles in studies conducted on the US.

Political monetary cycles are mainly influenced by central bank autonomy, decisions made due to national and international institutional regulations, the foreign exchange rate regime administration in open/closed economies, and the coordination of fiscal-monetary policies. The

central bank autonomy is important for the operation of political monetary cycles (Alesina and Summers, 1993: 152; Hayo and Hefeker, 2001: 5; Maloney et al., 2003: 19).Because, the more independent the central bank is, the lower its relationships with the government and the lower the possibility of the government to use the central bank for its before the elections. In certain developing countries, high central bank autonomy reflects the presence of legal autonomy. However, although autonomy may be provided legally, but the level of autonomy in practice may be different. Thus, it is healthier to consider the central bank president turnover rate in developing nations rather than the central bank autonomy indices (Sturm and De Haan, 2001: 2). The higher the turnover, the higher the instability and the lower the central bank autonomy (De Haan and Kooi, 2000: 646). As a result, if the manipulation of monetary policy instruments during election periods could be prevented through central bank autonomy, a higher economic stability could be ensured in the country.

Another issue that affects political monetary cycles is the exchange rate regime in open and close economies. If the flexible exchange rate regime is implemented in a country, the central bank would have the license to device independent policies. However, the effective fiscal policies in fixed exchange rate regime reduce the central bank's ability to act with populist objectives (Leertouwer and Maier, 2000: 35-36; Hiroi, 2009: 5). This would create a difficulty to finance political fiscal policies, preventing implementation of adaptive monetary policies. Hallerberg and De Souza (2000) emphasized the requirement for low liberal capital movements, flexible exchange rates and central bank autonomy in countries for political business cycles in their study (Hallerberg and De Souza, 2000: 4-5).In a study by Alpanda and Honig (2009), the analysis of 25 developed and 38 developing countries between 1972 and 2001 demonstrated a negative correlation between fixed exchange rate and political monetary cycles (Alpanda and Honig, 2009: 1385-1386). As a result, although political monetary cycles are associated with several factors, low independence indices and a flexible exchange rate regime are the least basic requirements for their presence in countries.

Finally, the coordination of monetary and fiscal policies is important for political monetary cycles. In election periods, opportunist fiscal policies could be financed with monetary policies via several mechanisms. The first mechanism entails resorting to monetary policies due to the instability in interest rates induced by pre-election fiscal policies (Beck, 1987: 207). The other mechanism is based on the Rogoff and Sibert hypothesis. According to this hypothesis, the budget deficit caused by reduction of the taxes before the election is financed by seigniorage money (Berger and Woitek, 1997: 15). Furthermore, for the government to implement monetary policies before the election, monetary policies should be adaptive. Hence, it could be understood that the money supply concept M1 is not directly under the control of the central bank, and that it could exhibit demand side changes according to the needs of the government in election periods (Berger and Woitek, 1997; Laney and Willett, 1983). In a study by Berger and Woitek (1997) conducted in Germany, it was reported that the German central bank considers inflation and output levels instead of targeting monetary growth. Accordingly, since the expansionary fiscal policy implementations of the government must be supported by monetary terms in election periods, the M1 money supply fluctuations are largely in the demand side rather than the supply side. Thus, although the government is the source of election period fluctuations, the central bank becomes the scapegoat (Berger and Woitek, 1997: 15; Eryılmaz, 2015: 511).

According to the "Unpleasant Monetarist Arithmetic Theory" utilized in economic analyzes, it is not possible to consider coordinated monetary and fiscal policies in a completely independent manner (Eijffinger and De Haan, 1996: 18). Thus, the increase in national debt that exceeds the increase in public revenues is more evident in election periods due to opportunistic objectives. In countries with budget deficits, the increase in the debt stock with interest rate hikes leads to the removal of this instability with monetary policies. Especially in countries with coalition governments, budget deficits increase due to the large number of parties and the presence of

unstable governments (Roubini and Sachs, 1989: 104). During coalition and unstable governments, high debt stock could mean that further monetary policy instruments would be adopted to finance this situation.

3. Coalition and Single Party Government Periods between 1990 and 2016 in Turkey

During the 1990-2016 periods that were analyzed in the current study coalition and single party governments were observed in Turkey. The three general elections between 1990 and 2000 (20 October 1991, 24 December 1995, 18 April 1999 elections) resulted in a coalition government. During the 1990-2000 coalition periods, 7 of the 11 short-lived governments were coalition governments. Furthermore, the high number of parties that were engaged in coalitions in Turkey resulted in conflicts among coalition partners to make structural and regulatory decisions in the economy (Çetin and Yılmaz, 2010: 395; Öniş, 2010: 56). The is best indicated by the 1994, 2000, and 2001 crises that occurred during coalition governments in Turkey. Furthermore, it can be argued that the coalition partners were in competition with each other, leading to the reduction of the use of economic policy instruments (such as monetary policy instruments) that were not under the direct control of the governments during election periods. The quality of democracy and the level of democratization are very important for the coalition governments to succeed. The weakness of democratic institutions and the lack of control mechanisms in Turkey result in a fragile democratic culture (Öniş, 2010: 57).

The 4 general elections (3 November 2002, 22 July 2007, 12 June 2011, 1 November 2015) held between 2000 and 2016 resulted in single party governments. Single-party governments implement more reformist economic policies, acting faster than coalition governments. As a result, it can be observed that economic growth accelerated during the single-party government after 2000. Moreover, the absence of wars of attrition in single party governments contrary to the coalition governments could facilitate the use of economic policy instruments during election periods. However, after the 2001 economic crisis, new regulations were introduced in financial and money markets with the "Program of Transition to Strong Economy" and the autonomy of the central bank was declared on April 25, 2001 (Çetin, 2016: 79). Advances to the public sector were banned with the independence of the central bank. Thus, by ensuring the autonomy of the central bank, it could be stated that manipulation of monetary policy instruments by the government to win the elections would disappear.

4. Data and Methodology

The main objective of the present study is to examine the relationships between the political monetary cycles and single party and coalition governments that came to power after the general elections held between 1990-2016. In the analysis, money in circulation (M0), M1 money supply, domestic loans and inflation series for 1986: 01 - 2016: 05 periods were used. The data on the monetary policy indicators used in the relevant period were obtained from the Central Bank of the Republic of Turkey (CBT) electronic data distribution system, FRED (St. Louis Federal Reserve Bank) and IFS (International Financial Statistics) web sites. Furthermore, whether each series used in the study contained seasonal unit roots was tested with Eviews 9 software and the dummy variable method. As a result, no seasonal effects were identified in the series. The conversions conducted on the series for econometric analysis are presented below.

M0=Cash in circulation. The monthly M0 series for 1986: 01-2016: 05 periods was divided by 2010-based consumer price index to obtain the real series. Then, the logarithm of the series was taken to obtain LM0.

M1=M1 money supply. The monthly M1 series for 1986: 01-2016: 05 period was divided by 2010-based consumer price index to obtain the real series. Then, the logarithm of the series was taken to obtain LM1.

YK=Domestic loans. The monthly domestic loans series for 1986: 01-2016: 05 period was divided by 2010-based consumer price index to obtain the real series. Then, the logarithm of the series was taken to obtain LYK.

ENF=Inflation. The logarithm of the monthly inflation series for 1986: 01-2016: 05 periods was taken to obtain LENF.

The coalition and single-party governments in power during the 1990-2016 periods were analyzed based on the monetary policy indicators. In the period between 1990 and 2000, coalition governments were in power in Turkey. The coalition governments came to power after the general elections of October 20, 1991, December 24, 1995, and April 18, 1999. Between 2000 and 2015, when the last general election was held within the period that the present study aimed to analyze, single-party governments ruled the country. The general elections, which resulted in the single party governments after 2000, were held on 3 November 2002, 22 July 2007, 12 June 2011, and 1 November 2015. The dummy variables that were generated based on the abovementioned information for the elections that resulted in coalition and single party governments are presented below.

EBK6=1 Six pre-election months during 3 election periods (including the month of elections) that resulted with coalition governments in the related period, otherwise **EBK6=0**

EBK3=1 Three pre-election months during 3 election periods (including the month of elections) that resulted with coalition governments in the related period, otherwise **EBK3=0**

EAK3=1 Three post-election months during 3 election periods that resulted with coalition governments in the related period, otherwise **EAK3=0**

EAK6=1 Six post-election months during 3 election periods that resulted with coalition governments in the related period, otherwise**EAK6=0**

EBT6=1 Six pre-election months during 4 election periods (including the month of elections) that resulted with single party governments in the related period, otherwise **EBT6=0**

EBT3=1 Three pre-election months during 4 election periods (including the month of elections) that resulted with single party governments in the related period, otherwise **EBT3=0**

EAT3=1 Three post-election months during 4 election periods that resulted with single party governments in the related period, otherwise **EAT3=0**

EAT6=1 Six post-election months during 4 election periods that resulted with single party governments in the related period, otherwise **EAT6=0**

5. Findings

Seven general elections held in Turkey between 1990 and 2016 will be scrutinized in the present study. General elections were scrutinized in the study since general elections provide better

results in the analysis of political business cycles when compared to local[1]and other elections. Furthermore, in the analysis of monetary policy indicators, the traditional opportunistic political business cycles theory was used. Due to factors such as differences between the information of the voters and politicians during election periods and the lack of information transfer by the media to voters, the expectations of Turkish voters are predominantly adaptive rather than rational.[2]In addition, partisan political business cycle models were excluded in the analyses conducted in the present study. In partisan models, right-wing parties basically tend to reduce the inflation and left-wing parties tend to reduce unemployment. However, the policies of left-wing parties can be similar to that of the right-wing parties in Turkey. Similarly, right-wing parties could implement policies that aim to reduce unemployment as well as reducing the inflation. Thus, it cannot be argued that the parties in Turkey act consistent with the partisan classification (Akçoraoğlu and Yurdakul, 2004; Sayan and Berument, 1997; Çarkoğlu, 1995).

In the study, ARIMA models that Alesina, Cohen and Roubini (1991, 1992) utilized in the analysis of policy instruments and outputs in OECD and developed countries were used to examine the monetary policy indicators and to determine political business cycles. To analyze monetary policy indicators for the election periods based on the abovementioned models, SARIMA models, which are seasonal autoregressive moving average models, are used[3].

Seasonal cycles reflect recurring changes related to a time series. Especially seasonal cycles can be observed more intensely in monthly and quarterly time series. Thus, the presence of mutually repeating events in the time series leads to a growth in the correlation between the observations in the series. Therefore, even if the time series is stationary, ignoring the seasonality could destroy the conditions of stationarity. Thus, it is necessary to remove the trends, seasonal difference and seasonal effects by taking the difference of the series (Polat, 2009: 55). The SARIMA model structure that takes seasonality into account is presented below.

$$ARIMA(p, d, q)(P, D, Q)$$

The (p, d, q) section of the above model is the non-seasonal part, while the (P, D, Q) section reflects the part with seasonal effects. Based on the multiplication operation in the equation, the p(P) depicts the AR component lag count in the autoregressive process structure, d(D) series depict the difference count used to render the series stationary q(Q) is the MA component lag count, which is the moving average process. The coefficient s located in the beginning of the equation demonstrates the value of the examined series. Thus, it is 12 in the monthly series and 4 in the quarterly series (Polat, 2009: 55).

To analyze the related series in ARIMA models, the series must be stationary. Therefore, stationarity tests were conducted for each monetary policy indicator used in the study. Dickey Fuller (ADF), Kwiatkowski-Phillips-Schmidt-Shin (KPSS), Ng-Perron, and Lee-Strazicich (2003) two structural break unit root tests were used to test the stationarity. Relevant time series were initially subjected to the seasonal unit root test using the dummy variables. As a result, no seasonal unit root was found in any series. The logarithms of the series were then taken and the time-dependent changes were analyzed.

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[1] See *Turan (2008), Aydemir (2007), Öniş (2000) and Asutay (2006)* for studies on political business cycle theory and local elections.
[2] See Bulutay (1970), Akarca and Tansel (2004), Asutay (2004, 2005 and 2006), Parlaktuna-Bahçe (2006) and Eryılmaz (2014) on the topic.
[3] ARIMA analysis is superior to other models since it minimizes the errors that occur in structural models.

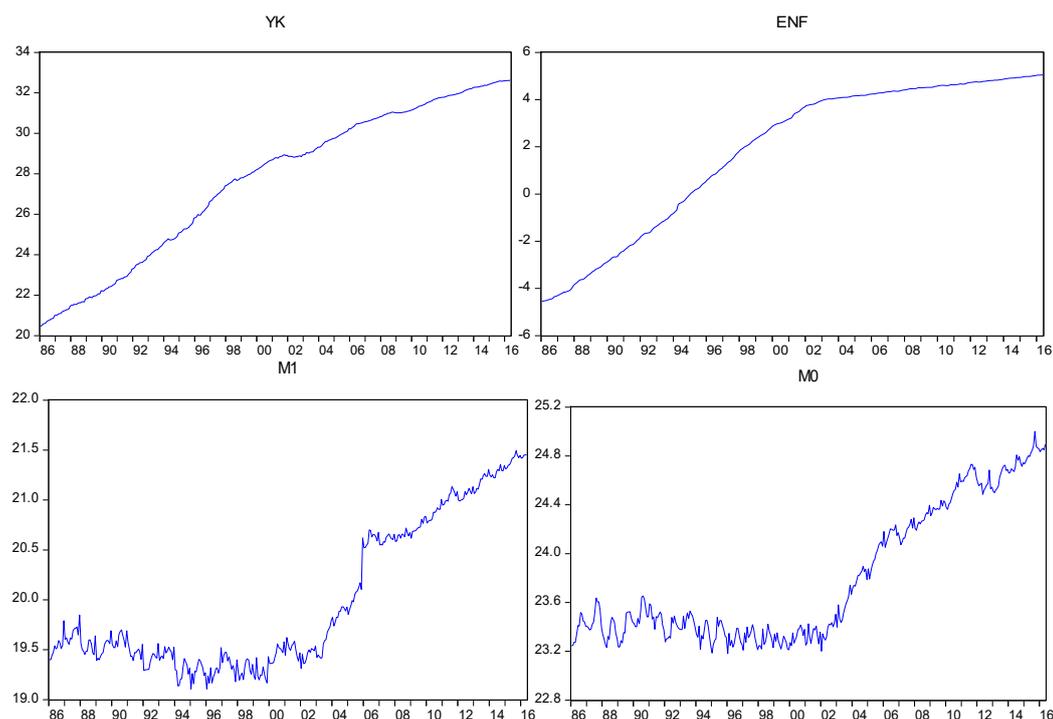**Figure No. 1. M0, M1, YK and ENF Series Face Value Graphs**

Figure 1 above demonstrates the changes in the face M0 money supply, M1 money supply, inflation (ENF) and domestic loan (YK) values between 1986: 01 and 2016: 05. Accordingly, in M0 and M1money supply series, an upward positive trend to the right could be observed after about 2002. This may be a sign that the series of money supply M0 and M1 were not stationary. Similarly, inflation and domestic credit series seemed to have an upwards positive trend in all years. Hence, the above figures could be an indicator of the presence of unit roots in inflation and domestic loans series in addition to the M0 and M1 money supply series. As a result, as a precaution against the presence of unit roots in the series, logarithms of the series were taken and ADF, KPSS and Ng-Perron unit root tests were applied with Eviews 9 software to the face values. The unit root test results can be examined in Table 1.

Table No. 1. M0, M1, YK and ENF Series Level Value Unit Root Test Results

Series Face Values						
Unit Root Tests	**ADF Test**	**KPSS Test**	**PP Test**	**Ng-Perron Test**			
				MZa	**MZt**	**MSB**	**MPT**
M0	-1,71 (0,74)	0,53 (0,21)	-1,49 (0,82)	-3,22 (-23,80)	-1,17 (-3,42)	0,36 (0,14)	26,23 (4,03)
M1	-1,97 (0,61)	0,54 (0,21)	-1,40 (0,85)	-1,80 (-23,80)	-0,82 (-3,42)	0,45 (0,14)	41,88 (4,03)
	-0,86	0,56	0,63	1,08	1,07	0,98	223,51

YK	(0,95)	(0,21)	(0,99)	(-23,80)	(-3,42)	(0,14)	(4,03)
ENF	-1,35	0,59	0,97	1,18	1,80	1,53	523,29
	(0,87)	(0,21)	(0,99)	(-23,80)	(-3,42)	(0,14)	(4,03)

Note: Values in parentheses indicate critical values at 1% level. Furthermore, 12 lags were determined in all variables according to the SIC criterion in the ADF test. Newfield-West 15 bandwidth was determined automatically with the Barlett-Kernel method in the KPSS test for all variables. According to the Newey-West method in the PP test, in M0, 25, in M1, 11, in domestic loans, 6 and in inflation, 12 bandwidths were determined. In the Ng-Perron test, Newey-West was determined as 25 for M0, 11 for M1, 6 for domestic credit and 12 for inflation by Barlett-Kernel technique.

The results of the unit root test conducted on the face values of the series demonstrated that all the variables were not significant at 1% significance level based on the ADF unit root test. Similarly, the PP unit root test results conducted on all variables demonstrated that the series were not stationary. In the KPSS unit root test, the LM value for all series was larger than the critical value presented in parentheses, thus, it was concluded that series contained unit roots in the face value. Finally, in the Ng-Perron test, the MZa and MZt absolute values for all series were smaller than the critical value, and the MSB and MPT test statistics were larger than the critical value, indicating that the series had unit roots in the face value (Eryılmaz and Eryılmaz, 2011: 50). Conventional unit root tests mentioned above do not take structural breaks into consideration. In the presence of structural breaks, the analysis of the series using the conventional methods is not satisfactory. Thus, the Lee-Strazicich (2003) test, which is a two structural break unit root test, was conducted on the series after taking the logarithms of the series with the Gauss 10 software. The results are presented in Table 2.

Table No. 2. Two Structural Break Lee-Strazicich (2003) Unit Root Test Results for M0, M1, YK and ENF Series

Series	Model	Lag	Break Times	λ	t statistics	Critical Value
M0	Model A	1	1994M3, 2003M1	0,3; 0,6	-2,46	-4,54*
	Model C	1	2002M1, 2005M10	0,4; 0,6	-7,53	-6,45*
M1	Model A	1	1991M12, 2005M11	0,2; 0,6	-1,98	-4,54*
	Model C	1	1997M11, 2005M9	0,4; 0,6	-4,95	-6,45*
YK	Model A	3	1990M2, 1998M11	0,2; 0,4	-0,99	-4,54*
	Model C	3	1996M5, 2003M2	0,4; 0,6	-3,45	-6,45*
ENF	Model A	1	1989M1, 1992M1	0,1; 0,2	-0,93	-4,54*
	Model C	1	1994M6, 2002M1	0,2; 0,6	-3,60	-6,41*

Note: The critical values depicted with an asterisk in the table indicate 1% level of significance. Critical values were obtained from Lee and Strazicich (2003).

Lee-Strazicich (2003) two breaks unit root test values for all series are presented in Table 2. Thus, it was determined that the series was not stationary since the absolute value of the t statistics of M1, YK and ENF series, calculated based on the model A and model C, was smaller than the critical value. However, since the value of the t-statistics calculated for the M0 series based on model A that demonstrate the break at the level was smaller than the critical value, it can be concluded that the series was not stationary based on the model A. For the same series, it was observed that for the model C that reflects breaks at both level and slope, the t statistics value was

larger than the critical value, thus the series was stationary based on the model C. However, since the other unit root tests (ADF, PP, KPSS and Ng-Perron) and two break Lee-Strazicich (2003) unit root test for the M0 series demonstrated the presence of unit root in the general tendency series, it was decided to take the first difference of the M0 series along with the other series. After taking the first difference of the series, the results were again subjected to stationarity tests in case of the presence of non-stationarity. It was observed that all series were stationary at the first difference.

The steps of the Seasonal Box-Jenkins method were followed for each monetary policy indicator. Thus, the series were first subjected to stationarity tests and the first differences were taken for the non-stationary series and the series were rendered stationary. Then, dummy variables were created for pre-election and post-election periods based on the election periods that resulted in 3 coalition governments between 1990 and 2000 and 4 single party governments between 2000 and 2016. After the dummy variables were determined, SARIMA models that are suitable for the series were determined with the econometric computer software Eviews 9 (Automatic ARIMA selection). Care was taken to ensure that the AIC information criterion was the lowest in the process of the identification of the most suitable model for the series, similar to the Box-Jenkins method.

1990-2000 Coalition Period Findings

Money in Circulation (M0)

The collective impact of the three general elections (1991, 1995, 1999), which resulted in coalition governments between 1990 and 2000, were analyzed based on the 3 month pre-election and post-election periods. The preference of using money in circulation (M0) in the tests was to examine the changes in central bank monetary policies. It was determined that the optimal model structure for the 4 dummy variables determined for pre-election and post-election periods was SARIMA (4,1,1) (5,0,5).

Table No. 3. SARIMA Analysis Results for Money in Circulation (M0) Series in Coalition Periods

	M0 MONEY SUPPLY			
	COALITION PERIODS			
	EBK6	**EBK3**	**EAK3**	**EAK6**
Optimum Model	SARIMA (4,1,1) (5,0,5)	SARIMA (4,1,1) (5,0,5)	SARIMA (4,1,1) (5,0,5)	SARIMA (4,1,1) (5,0,5)
Coefficient	0,005 (0,000)	0,005 (0,000)	0,005 (0,000)	0,005 (0,000)
Dummy	**-0,029 (0,002)**	**-0,040 (0,006)**	**-0,043 (0,003)**	**-0,028 (0,002)**
AR(4)	-0,176 (0,000)	-0,178 (0,000)	-0,178 (0,000)	-0,177 (0,000)
MA(1)	-0,238 (0,000)	-0,240 (0,000)	-0,236 (0,000)	-0,233 (0,000)
SAR(5)	0,501 (0,000)	0,468 (0,000)	0,496 (0,000)	0,497 (0,000)
SMA(5)	-0,746 (0,000)	-0,705 (0,000)	-0,705 (0,000)	-0,736 (0,000)
Prob F Value	0,000	0,000	0,000	0,000
ADJ R	0,14	0,15	0,15	0,15
AIC	-2,926	-2,923	-2,926	-2,927

Note: The values given in parentheses in the table are probability values.

According to the theory of political monetary cycles, the government implements expansionary monetary policies before the election to be reelected and contractionary monetary policies immediately after the elections. It is therefore expected that the amount of money in circulation would increase before the elections and decrease after the elections. Based on the results presented in Table 3, it was found that during three general elections held in Turkey and resulted in coalition governments between 1990 and 2000, money in circulation decreased before and after the elections. In the table, EBK6 and EBK3 reflect the pre-election dummy variables. The fact that these dummy variables have negative values indicated that the money in circulation decreased before the elections. The values of the EAK3, EAK6 dummy variables that reflect the 3 and 6 month changes after the elections were negative. In parallel to the pre-election period, it was observed that the money in circulation decreased in the post-election period as well. Furthermore, it was found that the dummy variables in the series were statistically significant at the 1% level. Thus, in the elections held in Turkey between 1990-2000 and resulted in coalition governments, the money in circulation (M0) series were not consistent with the assumptions of political monetary cycles theory.

M1 Money Supply

The next monetary policy indicator used in the study was the M1 money supply. The M1 money supply series was used in the study because the M1 money supply is directly controlled by the central bank (Derin, 2002: 173). Furthermore, it was observed that the M1 money supply was used extensively in national and international studies on political monetary cycles (Alesina, Roubini and Cohen, 1997; Allen and McCrickard, 1991; Vaubel, 1993). Based on this information, the aggregate impact of the three general elections, which resulted in coalition governments between 1990 and 2000, was analyzed based on the M1 money supply. It was determined that the most suitable models for 4 pre-election and post-election dummy variables were SARIMA (7,1,1) (6,0,6) for EBK6, SARIMA (9,1,9) (6,0,6) for EBK3, and SARIMA (6, 1, 1) (6,0,6) and SARIMA (1,1,9) (6,0,6) for EAK3. The M1 money supply analysis results for the elections that resulted in coalition governments are presented in Table 4.

Table No. 4. SARIMA Analysis Results for M1 Money Supply Series in Coalition Periods

M1 MONEY SUPPLY			
COALITION PERIODS			
	EBK6	**EBK3**	**EAK3**	**EAK6**
Optimum Model	SARIMA (7,1,1) (6,0,6)	SARIMA (9,1,9) (6,0,6)	SARIMA (6,1,1) (6,0,6)	SARIMA (1,1,9) (6,0,6)
Coefficient	0,006 (0,000)	0,016 (0,133)	0,005 (0,450)	0,017 (0,029)
Dummy	**-0,021 (0,047)**	**-0,034 (0,090)**	**-0,026 (0,095)**	**-0,019 (0,109)**
AR(7)	-0,157 (0,000)			
AR(9)		0,839 (0,000)		
AR(6)			-0,596 (0,000)	

AR(1)				-0,292 (0,000)
MA(1)	-0,333 (0,000)		-0,193 (0,000)	
MA(9)		0,839 (0,000)		0,190 (0,000)
SAR(6)	-0,962 (0,000)	0,973 (0,000)	0,864 (0,000)	0,976 (0,000)
SMA(6)	0,988 (0,000)	-0,959 (0,000)	-0,390 (0,000)	-0,981 (0,000)
Prob F Value	0,000	0,000	0,000	0,000
ADJ R	0,37	0,32	0,38	0,36
AIC	-2,726	-2,646	-2,743	-2,680

Note: The values given in parentheses in the table are probability values.

According to the theory of political monetary cycles, governments need to increase the M1 money supply before the elections to be re-elected, and to reduce M1 money supply immediately after the elections. Based on the results given in Table 4 and the aggregate effect of the 3 general elections held in Turkey between 1990-2000 and resulted in coalition governments, it was determined that M1 money supply consistently decreased before and after the elections. The fact that the values of EBK6 and EBK3 dummy variables that reflect the 6 and 3 month periods before the elections and the values of EAK6 and EAK3 dummy variables that reflect the 6 and 3-month periods after the elections were negative indicated a decrease in M1 money supply. It was observed that EBK6 dummy variable was significant at 5% level and EBK3 and EAk3 dummy variables were significant at 10% level. However, it was found that EAK6 dummy variable was statistically insignificant. Thus, the M1 money supply series was not consistent with the assumptions of the political monetary cycles theory in the elections held in Turkey between 1990-2000 and resulted in coalition governments.

Domestic Loans
The next instrument used in testing the validity of political monetary cycles theory was the amount of domestic loans. The central bank could alter the amount of domestic loans via the banking system. Hence, the aggregate impact of the three general elections that resulted in coalition governments between 1990 and 2000 was analyzed based on the domestic loans. Based on the results presented in Table 5, it was determined that the most suitable model for EBK6 was SARIMA (2,1,3) (6,0,6), for EBK3, it was SARIMA (2,1,2)(6,0,6),it was SARIMA (6, 1, 8) (12, 0, 12) for EAK3, and SARIMA (9, 1, 9) (6, 0, 6) for EAK6.

Table No. 5. SARIMA Analysis Results for YK Series in Coalition Periods

DOMESTIC LOANS (YK)				
COALITION PERIODS				
	EBK6	**EBK3**	**EAK3**	**EAK6**
Optimum Model	SARIMA (2,1,3) (6,0,6)	SARIMA (2,1,2) (6,0,6)	SARIMA (6,1,8) (12,0,12)	SARIMA (9,1,9) (6,0,6)
Coefficient	0,018 (0,000)	0,017 (0,001)	0,018 (0,000)	0,021 (0,001)

Dummy	**0,022 (0,008)**	**0,029 (0,003)**	**0,015 (0,086)**	**0,011 (0,079)**
AR(2)	0,158 (0,004)	0,868 (0,000)		
AR(6)			0,193 (0,000)	
AR(9)				-0,740 (0,000)
MA(2)		-0,740 (0,000)		
MA(3)	0,211 (0,000)			
MA(8)			0,194 (0,000)	
MA(9)				0,929 (0,000)
SAR(6)	0,963 (0,000)	0,961 (0,000)		0,960 (0,000)
SAR(12)			0,922 (0,000)	
SMA(6)	-0,972 (0,000)	-0,971 (0,000)		-0,882 (0,000)
SMA(12)			-0,931 (0,000)	
Prob F Value	0,000	0,000	0,000	0,000
ADJ R	0,41	0,40	0,48	0,38
AIC	-4,280	-4,275	-4,420	-4,245

Note: The values given in parentheses in the table are probability values.

The amount of domestic loans should increase before the elections according to the theory of political monetary cycles and the same amount should decrease immediately after the elections. Based on results given in Table 5, it was observed that the domestic loan volume increased continuously before and after the elections. Thus, it was observed that pre-election EBK6 and EBK3 dummy variables, and post-election EAK3 and EAK6 dummy variables all had positive values. EBK6 and EBK3 dummy variables were statistically significant at the 1% level. EAK3 and EAK6 dummy variables were statistically significant at the 10% level. Thus, in the elections held in Turkey between 1990-2000 and resulted in coalition governments, the domestic loans series was not consistent with the assumptions of the political monetary cycles theory.

Inflation
The final variable utilized to determine the political monetary cycles theory was the inflation factor. According to the theory, the increase in money supply due to the expansionary monetary policies implemented before the elections would increase the inflation rate while reducing the unemployment rate. Thus, the presence of the political business cycles could be identified with the inflation rate. However, the impact of expansionary monetary policies on inflation does not emerge immediately. Because, the increased money supply affects the production initially in the short term and then affects the inflation level with a 12-18 months delay (Friedman and Goodhart, 2002: 85). Therefore, the expansionary monetary policies during the pre-election period could increase the inflation only after the elections. Furthermore, the inflation-reducing effect of the contractionary monetary policies implemented after the elections would be delayed as well (Asutay, 2005: 4).

Thus, use of inflation in determination of political business cycles could be problematic since the results in the inflation could be delayed until the post-election period

The aggregate impact of the three general elections, which resulted in coalition governments between 1990 and 2000, was examined based on the changes in the inflation rate. The analysis results are presented in Table 6. The most suitable models for dummy variables were SARIMA (6,1,6) (4,0,4) for EBK6, SARIMA (9,1,8) (4,0,4) for EBK3, SARIMA (7,1, 9) (4,0,4) for EAK6, and SARIMA (7,1,9) (4,0,4) for EAK6.

Table No. 6. SARIMA Analysis Results for ENF Series in Coalition Periods

	INFLATION (ENF)			
	COALITION PERIODS			
	EBK6	**EBK3**	**EAK3**	**EAK6**
Optimum Model	SARIMA (6,1,6) (4,0,4)	SARIMA (9,1,8) (4,0,4)	SARIMA (7,1,9) (4,0,4)	SARIMA (7,1,9) (4,0,4)
Coefficient	-0,030 (0,029)	0,025 (0,000)	0,025 (0,000)	0,025 (0,000)
Dummy	**-0,003 (0,333)**	**0,008 (0,182)**	**0,012 (0,042)**	**0,009 (0,020)**
AR(6)	0,974 (0,000)			
AR(7)			0,469 (0,000)	0,458 (0,000)
AR(9)		0,333 (0,000)		
MA(6)	-0,968 (0,000)			
MA(8)		0,217 (0,000)		
MA(9)			0,147 (0,007)	0,154 (0,000)
SAR(4)	0,923 (0,000)	-0,618 (0,000)	0,147 (0,000)	-0,864 (0,000)
SMA(4)	-0,817 (0,000)	0,847 (0,000)	0,976 (0,000)	0,975 (0,000)
Prob F Value	0,000	0,000	0,000	0,000
ADJ R	0,59	0,31	0,35	0,34
AIC	-5,410	-4,866	-4,935	-4,038

Note: The values given in parentheses in the table are probability values.

It is expected that the inflation series would increase due to expansionary monetary policies before the elections and decrease after the elections due to contractionary monetary policies in order to provide stability according to the theory of opportunistic political monetary cycles. The results given in Table 6 demonstrated that inflation decreased in the 6-month period before the elections and increased in the 3-month period before the elections. The fact that the EBK6 dummy variable had a negative, and the EBK3 dummy variable had a positive value explains this situation. However, it was determined that both dummy variables were statistically insignificant at the 10% level. It was observed that the inflation rate increased during post-election periods. This could be explained by the fact that the EAK3 and EAK6 dummy variables had positive values for the post-election period. However, inflation should decrease in the post-election period due to there is a

need to reduce inflation due to contractionary monetary policies. Furthermore, it was observed that the EAK3 and EAK6 dummy variables were statistically significant at the 5% level. As a result, in the elections held in Turkey between 1990-2000 and resulted in coalition governments, the inflation series were not consistent with the assumptions of the political monetary cycles theory.

2000-2016 Single Party Government Period Findings

Money in Circulation (M0)
The aggregate impact of 4 general elections (3 November 2002, 22 July 2007, 12 June 2011 and 1 November 2015 general elections), which resulted in single party governments between 2000 and 2016, were analyzed using pre-election and post-election quarter dummy variables. The first monetary policy indicator analyzed for the single-party periods was the money in circulation (M0). The analysis results for the money in circulation variable are presented in Table 7. Dummy variables determined for the period between 2000-2016 were EBT6 for the 6-month pre-election period, EBT3 for the 3-month pre-election period, and EAT3 and EAT6 for the 3 and 6-month post-election periods, respectively. In the analysis conducted for money in circulation series, it was determined that the most suitable models for the dummy variables were SARIMA (4,1,1) (5,0,5) for EBT6 and EBT3, SARIMA (7,1,9) (6,0,6) for EAT3, and SARIMA (9,1,1) (6,0,6) for EAT6.

Table No. 7. SARIMA Analysis Results for Money in Circulation (M0) Series in Single-Party Periods

	M0 MONEY SUPPLY			
	SINGLE-PARTY PERIODS			
	EBT6	EBT3	EAT3	EAT6
Optimum Model	SARIMA (4,1,1) (5,0,5)	SARIMA (4,1,1) (5,0,5)	SARIMA (7,1,9) (6,0,6)	SARIMA (9,1,1) (6,0,6)
Coefficient	0,002 (0,019)	0,003 (0,004)	0,010 (0,107)	0,011 (0,038)
Dummy	**0,018 (0,028)**	**0,019 (0,148)**	**-0,010 (0,487)**	**-0,012 (0,144)**
AR(9)				0,200 (0,000)
AR(7)			-0,157 (0,002)	
AR(4)	-0,168 (0,001)	-0,168 (0,001)		
MA(1)	-0,227 (0,000)	-0,226 (0,000)		-0,205 (0,000)
MA(9)			0,305 (0,000)	
SAR(5)	0,490 (0,000)	0,477 (0,000)		
SAR(6)			0,965 (0,000)	0,962 (0,000)
SMA(5)	-0,719 (0,000)	-0,698 (0,000)		
SMA(6)			-0,981 (0,000)	-0,979 (0,000)

Prob F Value	0,000	0,000	0,000	0,000
ADJ R	0,13	0,14	0,11	0,14
AIC	-2,916	-2,908	-2,884	-2,900

Note: The values given in parentheses in the table are probability values.

According to the abovementioned theory, money in circulation is expected to increase before the elections and decrease immediately after the elections. The results presented in the table demonstrated that the EBT6 and EBT3 dummy variable values that reflect the changes during the 6 and 3 month periods before the elections were positive, and the EAT3 and EAT6 dummy variable values that reflect the changes during the 6 and 3 month periods after the elections were positive. Thus, the amount of money in circulation increased before the elections and decreased after the elections. Furthermore, it was observed that EBT6 dummy variable was statistically significant at 5% level, while the other dummy variables were insignificant at 10% level. However, it is difficult to determine the effect of the political business cycles theory on the economic policy instruments. Therefore, even if the dummy variables related to the series were statistically insignificant, the fact that the sign of the dummy variable was consistent with the theory could indicate that the political business cycles were valid (Özkan and Tarı, 2011: 234). As a result, based on the aggregate effect of the 4 general elections held in Turkey and resulted in single party governments between 2000 and 2016, the money in circulation (M0) series was consistent with the assumptions of political monetary cycles theory.

M1 Money Supply

One of the monetary policy indicators analyzed for single-party periods was the M1 money supply. The results of pre-election and post-election M1 money supply series analyzes for the four general elections that resulted in single party governments between 2000-2016 are presented in Table 8. It was determined that the most suitable models for dummy variables were SARIMA (8,1,8) (6,0,6) for EBT6, SARIMA (7,1,7) (6,0,6) for EBT3, SARIMA (9,1,9)(6,0,6) for EAT3, and SARIMA (7,1,7) (6,0,6) for EAT6.

Table No. 8. SARIMA Analysis Results for M1 Money Supply Series in Single-Party Periods

M1 MONEY SUPPLY				
SINGLE-PARTY PERIODS				
	EBT6	EBT3	EAT3	EAT6
Optimum Model	SARIMA (8,1,8) (6,0,6)	SARIMA (7,1,7) (6,0,6)	SARIMA (9,1,9) (6,0,6)	SARIMA (7,1,7) (6,0,6)
Coefficient	0,016 (0,423)	0,005 (0,909)	0,023 (0,000)	0,027 (0,545)
Dummy	**0,025 (0,000)**	**0,022 (0,000)**	**-0,024 (0,000)**	**-0,012 (0,000)**
AR(9)			-0,658 (0,000)	
AR(8)	0,915 (0,000)			
AR(7)		0,956 (0,000)		0,958 (0,000)
MA(7)		-0,968 (0,000)		-0,974 (0,000)

MA(8)	-0,954 (0,000)			
MA(9)			0,872 (0,000)	
SAR(6)	0,977 (0,000)	0,983 (0,000)	0,976 (0,000)	0,983 (0,000)
SMA(6)	-0,953 (0,000)	-0,977 (0,000)	-0,998 (0,000)	-0,982 (0,000)
Prob F Value	0,000	0,000	0,000	0,000
ADJ R	0,33	0,30	0,33	0,31
AIC	-2,662	-2,626	-2,658	-2,639

Note: The values given in parentheses in the table are probability values.

In line with the abovementioned theory, the basic hypothesis on M1 money supply is that the M1 money supply increases before the elections and then, decreases after the elections. The aggregate effect of the 4 general elections held in Turkey between 2000 and 2016, which resulted in single party governments, were examined based M1 money supply and presented in Table 8. Thus, based on the positive values of the EBT6 and EBT3 dummy variables, it can be observed that M1 increased during the pre-election period. Since the values of the dummy variables EAT3 and EAT6 was negative in the post-election period, it was observed that the M1 money supply decreased after the elections. Furthermore, it was determined that all dummy variables were statistically significant at the 1% level. As a result, the M1 money supply series was consistent with the assumptions of political monetary cycles theory in the elections held in Turkey between 2000-2016 and resulted in single party governments.

Domestic Loans

The pre-election and post-election changes in domestic loans series were analyzed for 4 general elections held in Turkey between 2000 and 2016, which resulted in single-party governments. The analysis results are presented in Table 9. Thus, it was determined that the most suitable models for dummy variables were SARIMA (7,1,7) (6,0,6) for EBT6, EBT3 and EAT3, and SARIMA (8,1,8) (6,0,6) for EAT6.

Table No. 9. SARIMA Analysis Results for YK Series in Single-Party Periods

DOMESTIC LOANS (YK)				
SINGLE PARTY PERIODS				
	EBT6	**EBT3**	**EAT3**	**EAT6**
Optimum Model	SARIMA (7,1,7) (6,0,6)	SARIMA (7,1,7) (6,0,6)	SARIMA (7,1,7) (6,0,6)	SARIMA (8,1,8) (6,0,6)
Coefficient	-0,002 (0,696)	-0,002 (0,674)	-0,000 (0,909)	0,016 (0,001)
Dummy	**0,003 (0,000)**	**0,007 (0,000)**	**-0,009 (0,000)**	**-0,017 (0,000)**
AR(7)	0,896 (0,000)	0,896 (0,000)	0,897 (0,000)	
AR(8)				-0,835 (0,000)

MA(7)	-0,967 (0,000)	-0,967 (0,000)	0,969 (0,000)	
MA(8)				0,970 (0,000)
SAR(6)	0,960 (0,000)	0,960 (0,000)	0,960 (0,000)	0,967 (0,000)
SMA(6)	-0,976 (0,000)	-0,975 (0,000)	-0,974 (0,000)	-0,995 (0,000)
Prob F Value	0,000	0,000	0,000	0,000
ADJ R	0,39	0,39	0,40	0,37
AIC	-4,275	-4,275	-4,279	-4,242

Note: The values given in parentheses in the table are probability values.

The government may make changes in domestic loan volume for political goals during election periods. Basically, it was expected that domestic loans would increase before the elections due to expansionary monetary policies, and decrease with the contractionary monetary policies after the elections. Based on the dummy variables in the model presented in Table 9, it was observed that the domestic loans increased during the 6 and 3 month pre-election periods and decreased during the 3 and 6 month post-election periods. Furthermore, it was determined that all dummy variables were statistically significant at the 1% level. As a result, the domestic loans series was consistent with the assumptions of political monetary cycles theory in the elections that resulted in single party governments in Turkey between 2000 and 2016.

Inflation
The aggregate impact of 4 general elections, which resulted in single party governments in Turkey between 2000 and 2016, was examined for the inflation (ENF) series. The analysis results are presented in Table 10. It was determined that the most suitable models for dummy variables were SARIMA (9,1,9) (4,0,4) for EBT6 and EAT6 and SARIMA (5,1,5) (4,0,4) for EBT3 and EAT3.

Table No. 10. SARIMA Analysis Results for ENF Series in Single-Party Periods

INFLATION (ENF)				
SINGLE-PARTY PERIODS				
	EBT6	**EBT3**	**EAT3**	**EAT6**
Optimum Model	SARIMA (9,1,9) (4,0,4)	SARIMA (5,1,5) (4,0,4)	SARIMA (5,1,5) (4,0,4)	SARIMA (9,1,9) (4,0,4)
Coefficient	-0,012 (0,058)	-0,012 (0,002)	-0,012 (0,002)	-0,014 (0,000)
Dummy	**-0,003 (0,006)**	**0,007 (0,000)**	**0,007 (0,000)**	**0,004 (0,006)**
AR(9)	0,932 (0,000)			0,932 (0,000)
AR(5)		0,937 (0,000)	0,937 (0,000)	
MA(9)	-0,971 (0,000)			-0,973 (0,000)

MA(5)		-0,980 (0,000)	-0,983 (0,000)	
SAR(4)	0,941 (0,000)	0,959 (0,000)	0,959 (0,000)	0,941 (0,000)
SMA(4)	-0,877 (0,000)	-0,988 (0,000)	-0,982 (0,000)	-0,874 (0,000)
Prob F Value	0,000	0,000	0,000	0,000
ADJ R	0,53	0,50	0,50	0,53
AIC	-5,271	-5,225	-5,226	-5,270

Note: The values given in parentheses in the table are probability values.

According to the theory of political business cycles, it is expected that inflation would increase before the elections due to the expansionary monetary policies and decrease after the elections based on the contractionary monetary policies. As seen in Table 10, EBT6 dummy variable had a negative value, indicating that inflation decreased during the 6 month period before the elections. In the 3 month period before the elections, it was found that EBT3 dummy variable was positive and inflation increased. Since EAT3 and EAT6 dummy variables, which represent the 3 and 6 month periods after the elections, were positive, it was determined that the inflation continuously increased during the post-election period. It was concluded that the effects of the pre-election increase in money supply in the single-party government were delayed until the post-election period with respect to the inflation rate. Furthermore, it was determined that all dummy variables were statistically significant at the 1% level. Thus, the inflation series was not consistent with the assumptions of the political monetary cycles theory for the elections held in Turkey between 2000 and 2016 and resulted in single party governments.

6. **Conclusions**

The theory of political monetary cycles examines the use of monetary policy instruments by the government with opportunistic goals during the election periods. According to the said theory, the government implements expansionary monetary policies before the elections, and immediately after the elections, it implements contractionary monetary policies to stabilize the economy. In order for the government to influence the monetary policy instruments with opportunistic goals, the central bank should not be autonomous and the country should have open and flexible exchange rate policies. If the central bank is autonomous, it would be less likely for the government to manipulate monetary policies for political objectives. Also, as a result of the fixed exchange rates in an open country, the manipulation of monetary policies by an opportunistic government would be reduced due to effective fiscal policies.

The present study investigated the presence of political monetary cycles theory in Turkey between 1990-2016. The effects of the elections on the money in circulation (M0), M1 money supply, domestic loans and inflation series were analyzed in two periods, since there were coalition governments between 1990 and 2000, and single-party governments between 2000 and 2016 in Turkey. The study findings demonstrated that the money in circulation (M0) and M1 money supply decreased before the elections that resulted in the coalition governments and these variables continued to decrease in the post-election period. The domestic loans increased continuously during the periods before and after the elections. It was observed that the inflation series decreased during the 6 month period before the elections and continuously increased during the 3 month period before the elections and 3 and 6 month periods after the elections. Thus, opportunistic political monetary cycles were not valid in the elections that resulted in coalition governments between 1990 and 2000 in Turkey.

The elections held in Turkey between 2000 and 2016 resulted in single party governments.

The changes in the monetary policy indicators, namely money in circulation (M0), M1 money supply, domestic loans and inflation rate, during the election periods were analyzed between 2000 and 2016. Thus, money in circulation, M1 money supply and domestic loans series increased before the elections and the same series decreased after the elections. Therefore, it can be argued that opportunistic political monetary cycles were valid in the elections that resulted in single party governments in Turkey between 2000 and 2016. It was observed that inflation decreased in the 6 month period before the elections and increased during the 3 month period before the elections and after the elections. This was not consistent with the assumptions of the said theory. Because, it was stated in the literature that the changes implemented by the government on policy instruments during the election periods could be identified more clearly based on the changes in the objectives. Thus, the findings of the study concerning the inflation rate were consistent with the literature.

New regulations were introduced in finance and money markets with the "Transition to Strong Economy Program" after the 2001 crisis in Turkey. As a result, the central bank became autonomous with the decision taken on April 25, 2001. It was emphasized in the literature that the assumptions of the political business cycles theory would be invalid when the central bank is autonomous. However, when the effects of the general elections held during the 2000-2016 period on monetary policy indicators are examined, it is observed that political monetary cycles existed in Turkey. Thus, the fact that political monetary cycles exists despite the central bank autonomy, contrary to the literature, could be an indicator of insufficient autonomy of the central bank in Turkey.

During the election periods, budgetary balance deteriorates and public deficit increases due to the expansionary fiscal policies of the government. Monetary policies could be used as an adaptive factor in financing the public deficit. It is known in the literature that coalition governments create higher budgetary deficits when compared to one-party governments due to wars of attrition. Thus, it is considered that during coalition governments, more adaptive expansionary monetary policies would be adopted due to excessive budget deficits. However, the lack of political monetary cycles during the coalition governments between 1990 and 2000 in Turkey indicated that monetary and fiscal policies were not adaptive during the coalition periods.

In conclusion, utilization of monetary policies during the election periods varies between the coalition and single party governments. The absence of political monetary cycles in the elections held during the coalition periods can be explained by the attrition wars between the coalition partner party groups. Furthermore, the conflicts that arise from the large number of parties in the coalition may prevent the manipulation of the central bank for political purposes. Also, the presence of political instability and internal and external economic instabilities in Turkey between 1990 and 2000 may have limited the implementation of monetary policies for political purposes. Furthermore, the requirement of investigating the coalition and single party periods separately in the analysis of monetary policy based on the political business cycles theory was a significant outcome of the present study.

7. Bibliography

[1]**Abrams B.A., Iossifov P., (2006).** "Does the Fed Contribute to a Political Business Cycle?", Public Choice, Vol 129, pp. 249–262.

[2]**Akçoraoğlu A., Yurdakul F. (2004). "**Siyasal Ekonomi Açısından Büyüme, Enflasyon ve Bütçe Açikları: Türkiye Üzerine Bir Uygulama, Ankara Üniversitesi SBF Dergisi**, 59(1), pp. 1- 25.

[3]**Akerman J. (1947).** "Political Economic Cycles", Kyklos, Sayı:1, pp.107-117.

[4]**Alesina A., Roubini N. (1992).** "Political Cycles in OECD Economies", The Review of Economic Studies, No. 59, pp. 663-688.

[5]**Alesina A., Roubini N. (1990).** "Political Cycles OECD Economies", NBER Working Paper Series, Working Paper, No. 3478.

[6]**Alesina A. (1987).** "Macroeconomic Policy in a Two-Party System as a Repeated Game", The Quarterly Journal of Economics, 102 (3), pp.651- 678.

[7]**Alesina A., Roubini N., Cohen G. D. (1997).** Political Cycles and the Macroeconomy**, The MIT Press, England.

[8]**Alesina A., Summers L. (1993).** "Central Bank Independence and Macroeconomic Performance: Some Comparative Evidence", Journal of Money, Credit and Banking, Vol.25, No.1, pp.151- 162.

[9]**Allen S., McCrickard D. L. (1991).** "The Influence of Elections on Federal Reserve Behaviour", Economics Letters, 37(1), pp. 51–55.

[10]**Alpanda S., Honig A. (2009).** "The Impact of Central Bank Independence on Political Monetary Cycles in Advanced and Developing Nations", Journal of Money, Credit and Banking, 41(7), pp. 1365–1389.

[11]**Andrikopoulos A., Loizides I, Prodromidis K. (2004).** "Fiscal Policy and Political Business Cycles in the EU", European Journal of Political Economy, Vol. 20, pp.125-152.

[12]**Asutay Mehmet (2005).** "Political Monetary Cycles: The Political Manipulation of Monetary Policy Instruments and Outcomes in Turkey", 25th Annual Conference of the Public Choice Society, Durham, 31 Mart- 3 Nisan.

[13]**Beck Nathaniel (1987).** "Elections and FED: Is There Political Monetary Cycle?", American Journal of Political Science, Vol 31, No 1, pp. 194-216.

[14]**Berger H., Woitek U. (1997).** "Searching for Political Business Cycle in Germany, Public Choice, University of Münich.

[15]**Çarkoğlu A. (1995).** "Election Manifestos and Policy-Oriented Economic Voting", European Journal of Political Research, Vol 27, pp. 293-317.

[16]**Çetin T., Yılmaz F. (2010).** "Transition to the Regulatory State in Turkey: Lessons From Energy", Journal of Economic Issues, 44(2), pp. 393-402.

[17]**Çetin M. Ö. (2016**). "TCMB Para Politikası Uygulamalarının Gelişimi", Finansal Araştırmalar ve Çalışmalar Dergisi, Cilt 8, Sayı 14, ss. 67-101.

[18]**De Haan J., Kooi W. (2001).** "Does Central Bank Independence Really Matter? New Evidence For Developing Countries Using a New Indicator", Journal of Banking and Finance, Vol 24(4), pp. 643-664.

[19]**Derin İbrahim (2002).** Do Political Business Cycles Exist in Turkey?, The Faculty of Claremont Graduate University (Yayınlanmamış Doktora Tezi), California.

[20]**Dornbusch R. (1987).** "Exchange Rates and Price", American Economic Review, Vol. 77, No. 1, pp. 93-106.

[21]**Drazen Allan (2000**). Political Economy in Macroeconomics, Princeton University Press, Princeton, New Jersey.

[22]**Eijffinger S., De Haan J. (1996).** "The Political Economy of Central Bank Independence", Special Papers of International Economics, No. 19, pp. 1-92.

[23]**Eryılmaz F., Dilek M. (2014).** "The Traditional Opportunistic Political Business Cycles: An Example of Turkey", The Scinece And Education At The Beginning Of The 21 St Century In Turkey (Chapter 6), St. Kliment Ohridski University Press, 2014, pp. 70-78.

[24]**Eryılmaz F. (2015).** "The Effects Of Elections On Turkish Economy: Evidence from Money Supply", Turkey at The Beginning of 21. Century: Past and Present (Chapter 37), St. Kliment Ohridski University Press, 2015, pp. 508-519

[25]**Eryılmaz F. (2015).** "Political Business Cycle Theories", Education In The 21. Century: Theory And Practice (Chapter 43), St. Kliment Ohridski University Press, 2015, pp. 536-562

[26]**Eryılmaz F., Mercan M. (2015).** "Political Budget Cycles: Evidence from Turkey", Annals of the „Constantin Brâncuşi" University Of Târgu Jiu, Economy Series, Issue 2/2015, Pp. 5-14.

[27]**Eryılmaz F., Murat D. (2016).** "Political Business Cycles Theories: Evidence From Turkey", Yönetim Ve Ekonomi Araştırmaları Dergisi, Cilt: 14 Sayı:1, pp. 248-268.

[28]**Eryılmaz F., Murat D. (2016**). "Searching For Political Business Cycles In Turkey: Findings From Fiscal Policy", International Journal of Economic and Administrative Studies, Vol. 17, 2016, pp. 197-212.

[29]**Eryılmaz F., Eryılmaz M. (2011).** "Ekonomik Krizlerin Retoriksel Stratejilere Etkisi: TKY Örneği". Yönetim Araştırmaları Dergisi, Cilt 11, Sayı 1-2, pp. 35-77.

[30]**Friedman M., Goodhart C. (2002).** "Money, Inflation and Constitutional Position of the Central Bank", The Institute of Economic Affairs, pp. 1-127.

[31]**Grier, K. B. (1987).** "Presidential Elections and Federal Reserve Policy: An Empirical Test." Southern Economic Journal, 54(2), pp. 475–486.

[32]**Hallerberg M., De Souza L. (2000).** "The Political Business Cycles of EU Accession Countries," Tinbergen Institute Discussion Papers, No 085/02.

[33]**Haynes S.E., Stone J. (1989).** "An Integrated Test for Electoral Cycles in the U.S. Economy", The Review of Economics and Statistics, Vol 71(3), pp. 426-434.

[34]**Hayo B., Hefeker C. (2001).** "Do We Really Need Central Bank Independence?", http://econwpa.repec.org/eps/mac/papers/0103/0103006.pdf, (20.06.2016)

[35]**Hibbs Douglas (1977).** "Political Parties and Macroeconomic Policy", The American Political Science Review, Vol. 71, No. 4, December, pp. 1467- 1487.

[36]**Hiroi T., (2009).** "Exchange Rate Regime, Central Bank Independence and Political Business Cycles in Brazil", Studies in Comparative International Development, 44(1), pp.1-22.

[37]**Kalecki Michael (1943).** "Political Aspects of Full Employment", Political Quarterly, ss.1- 9.

[38]**Laney L., Willett T. (1983).** "Presidential Politics, Budget Deficits and Monetary Policy in the United States; 1960-1976.", Public Choice 40 (January 1983), pp. 53-69.

[39]**Leeper E. M., Walker T., (2011).** "Fiscal Limits in Advanced Economies", Economic Papers: A Journal of Applied Economics and Policy, 30(1), pp. 33–47

[40]**Leertouwer E., Maier P., (2001).** "Who Creates Political Business Cycles? Shoulds Central Bank be Blamed?", European Journal of Political Economy, Vol 17(3), pp. 445-463.

[41]**Macrae C. D. (1977).** "A Political Model of the Business Cycle", Journal of Political Economy, Vol. 85, No. 2, April, pp. 239- 263.

[42]**Maloney J., Pickering A., Hadri K. (2003).** Political Business Cycles and Central Bank Independence, The Economic Journal, 113.

[43]**Mevorach B., (1989).** "The Political Monetary Business Cycle: Political Reality and Economic Theory", Political Behaviour, Vol. 11, No. 2, pp.175-188.

[44]**Nordhaus William D. (1989).** "Alternative Approaches to the Political Business Cycles", Brooking Papers on Economic Activity, Vol.2, pp. 1- 68.

[45]**Nordhaus William D. (1975).** "The Political Business Cycle", Review of Economic Studies, Vol.42, pp. 169- 189.

[46]**Öniş Z. (2010).** "Crises and Transformations in Turkish Political Economy", Turkish Policy Quarterly, Volume 9, Number 3, pp. 45-61.

[47]**Özkan F., Tarı R. (2011).** "Türkiye'de Seçim Dönemlerinin Politik Konjonktürel Dalgalanmaları Teorisi Çerçevesinde Analizi", http://iibf.erciyes.edu.tr/dergi/sayi36/013_ozkan-tari.pdf, (20.08.2016).

[48]**Polat Ö. (2009).** "Türkiye'nin Dış Ticaret Verilerinin Öngörüsünde Yapay Sinir Ağları ve Box-Jenkins Modellerinin Karşılaştırmalı Analizi", Atatürk Üniversitesi Sosyal Bilimler Enstitüsü (Yayınlanmamış Doktora Tezi), Kocaeli.

[49]**Rogoff K., Sibert A. (1988).** " Elections and Macroeconomic Policy Cycles", The Review of Economic Studies, Vol. 55, No. 1, January, pp. 1- 16.

[50]**Rogoff Kenneth (1990).** "Equilibrium Political Budget Cycles", The American Economic Review, Vol. 80, No. 1, March, pp. 21- 36.

[51]**Roubini N., Sachs J. (1989).** "Government Spending and Budget Deficits in the Industrial Countries", Economic Policy, Vol. 4, No. 8, pp. 100-132.

[52]**Sayan S., Berument H. (1997).** "Türkíye'de Síyaset, Ekonomík Popülízm ve Hükümetler", pp. 1- 21.

[53]**Stein Ernesto, Streb Jorge. (2004).** "Elections and Timing of Devaluations", Journal of International Economics, No. 63, pp.119-143.

[54]**Sturm Jan-Egbert, De Haan J. (2001).** "Inflation in Developing Countries: Does Central Bank Independence Matter?", CESifo Working Paper, No. 511, pp.1-18.

[55]**Tayyar A. E. (2017).** ""Political Exchange Rate Fluctuations Spesific to Fixed Exchange Rate Regimes: A Case Study on Turkey", Constantin Brancusi University Annals Economy Series, 2017, Vol 2, pp.4-14.

[56]**Tufte, E. R. (1978).** Political Control of the Economy, Princeton: Princeton University Press, USA.

[57]**Vaubel R. (1993).** "Eine Public-Choice-Analyse der Deutschen Bundesbank und ihre Implikationen für die Europäische Währungsunsion", In D. Duwendag and J. Siebke (Eds.), Europa vor dem Eintritt in die Wirtschafts- und Währungsunion, pp. 23-79.