Political Business Cycles in Turkey: Is It the Case?

Mesut Karakas
mesutkarakas@gmail.com

Abstract

Political business cycle studies have arisen as alternatives to pure business cycle studies. Each country encounters political business cycles differently. Even in some developed countries, the existence of them is a big question for academicians. In this paper, we try to answer the question whether there are opportunistic political business cycles in Turkey or not. Our study focuses on both fiscal and monetary policies/variables to discover the Turkish case. We use a simple but powerful time series model to test the existence of them. Empirical results show that it is clear that there are quite perfect opportunistic political business cycles in Turkey. This finding is strongly supported by budget deficit, government expenditure, transfer payments (except interest payments), central bank credits, currency in circulation, and M1 money supply.

Keywords: Political business cycles; Time series analysis; Fiscal policy; Monetary policy; Probit model; Turkish political economy

JEL Classification: E5; E6; H2; H3
I. Introduction and Literature Survey:

Political business cycle theory has a nearly 30 years history. Most of the studies in political business cycle theory cover United States and OECD countries. Also, developing countries are usually investigated in the political business cycle context and compared to the developed countries.

Kramer (1971) is one of the earliest studies in the political business cycle theory. Kramer (1971) researched US congressional elections and found that there exists a strong link between the economy and voting behavior. The election results are affected by the growth of real per capita income and inflation. These findings were supported by Tufte (1975). Also, Tufte (1978) extended the results of Kramer (1971). Tufte (1978) included the view of politicians in such a case where economic conditions affect the voting behavior and results. Tufte (1978) pointed out two important results related to political business cycles. Firstly, economy and economic variables affect elections and have utmost importance on the election results. Secondly, politicians are accustomed to this fact and they try to manipulate the economy to be re-elected. Because of that, the economy encounters a cyclic behavior. Usually, there is a boom in the economy some time before the elections and, afterwards, contractions hit the economy. So, economic contractions and expansions are not let to be created endogenously but manipulated exogenously.

The political manipulation in USA was studied thoroughly by Fair (1978). Fair (1978) detected that the election results are dependent on two macro economic variables. These are the real per capita GNP, and unemployment. Other macro variables seemed to have no relation with political business cycles. Fair (1978) stated that a 1% increase in the growth rate increases the votes of the current government nearly 1%. Moreover, Fair (1978) determined that the voters discount past performance of the government with a high rate and look at one or two years before to evaluate the performance of government.

The theoretical framework of the political business cycles was developed in Nordhaus (1975). After the development of this framework, empirical studies began to be based on Nordhaus model. The empirical study in this paper is also based on the basic Nordhaus opportunistic political business cycle theory with a wide range of macroeconomic variables and macroeconomic policy instruments. The model established in Nordhaus (1975) takes its framework from the Philips curve. In the setup of Nordhaus (1975), voters are identical and exemplified by a representative voter and they prefer low unemployment accompanied by low inflation. Also, voters have short memories of the past and they
tend to have high discount rates. In addition to that, voters build their expectations adaptively and they have no foresight. Conversely, the only demand of the politicians is to be re-elected and the politicians ignore the stability of the economy as their primary goal. As a result, the demand of the politicians to stay in the office one more period pushes them to use expansionary monetary policy before the elections so that unemployment falls through money growth. It takes the inflation rate to adjust some time after the elections because of the slow adjustment mechanism related to adaptive expectations. In such a way, politicians create a period of low unemployment accompanied with low inflation rate to increase the probability for their re-election. When the inflation adjusts, the politicians try to decrease it by contractions in the money supply. Till the next election nears, the fight with inflation continues. The politicians manipulate the economy to increase their chance of re-election before the next election. So, the economy encounters contractions and expansions which stems from political interventions.

There are two criticisms against Nordhaus model. The first criticism is that it overrides the independence of central bank and attaches full power to the politicians on the monetary policy. Drazen (2000a) and Drazen (2000b) try to explain this problem and point out that, even independent central banks accommodate to the political pressure from governments to prevent a sharp rise on the interest rates at the times of election. So, this criticism does not make the model invalid. Also, the fact that the effects of the politicians on policy instruments dominate the macroeconomic outcomes helps us to relax this criticism. The second criticism based on the irrationality assumption of the voters. Drazen (2000a) and Drazen (2000b) explained the irrationality of the electors with an example of a representative voter. Voters who live more than one election cycle will know that a period of low unemployment and inflation before the election will be followed by a period of high inflation and low economic growth. As a result, the politicians cannot fool the voters all of the time, because any voter who lived more than one election period will not reward the politicians, conversely, he or she will be punishing the politicians in the next election. So, it is not appropriate for the politicians to use opportunistic political manipulation and the electoral business cycle cannot be created. Rogoff and Sibert (1988) and Rogoff (1990) dealt with this problem and added the rationality of the voters to the political business cycle models in partisan political cycle framework.

Nordhaus model was used in many empirical analyses. Allesina et al. (1997) investigated the unemployment, GDP, inflation and political business cycle relations for USA. They determined that there is no relation between unemployment and political business cycles in USA. In converse, they were not able to reject the possibility of relation between GDP and political business cycles. Alessina et
al. (1992) studied 18 OECD countries and concluded that there is a strong link between inflation and political business cycles in Italy, Germany, France, Denmark, and New Zealand. Haynes and Stone (1989) showed a four year cycle on GNP and unemployment which coincides with the timing of elections.

Nordhaus model is not limited to be used with unemployment, GDP, and inflation but it is also used with the macroeconomic policy instruments like money supply and transfer payments. Allesina et al. (1992), Grier (1989), and Williams (1990) showed that the timing of an election has significant effect on money growth. The fiscal transfers before the elections play also considerable role. Alessina et al (1992) and Allesina and Roubini (1992) concluded that the cyclic behavior in transfers overlaps with election timing. But they failed to find any other relationship between the manipulation of voters and any other fiscal instruments. In another work, Keech and Pak (1989) pointed out that there exists a cyclic behavior on veterans’ benefits and social security payments in USA. But they determined that this mechanism to manipulate the voters is not used any more.

Political business cycle framework is developed further with partisan political business cycle models. These developments erased the opportunistic side of the Nordhaus model. Hibbs (1977) introduced the first partisan political business cycle model. Also, Allesina (1987) and Allesina (1988) included the rational expectations into partisan models and give rise to the rational partisan models.

Opportunistic political business cycles are studied in a small number of works for Turkey. Thus, it will be wise to touch briefly to the empirical works related to Turkey.

Tutar and Tansel (2000) studied the budget deficits and political business cycles in Turkey using monthly and quarterly data. Tutar and Tansel (2000) concluded that political business cycles exist in Turkey using budget deficits and other fiscal instruments and also including the number of fiscal authorities. Tutar and Tansel (2000) points out that their study based on annual data gave no results since the effect of elections vanished in the annual data. In a different work, Kuzu (2001) used Arima models and utilized many independent variables like central bank credits, currency issued, and M1 supply etc. to conclude that there are opportunistic political business cycles in Turkey. Asutay (2004) showed that Turkish governments use both monetary and fiscal policies to buy votes to be re-elected, but he made use of small range of time interval because of data insufficiency. Sezgin (2007) studied both political outcomes and political instruments in relation with political business cycles. Using yearly
data and ordinary least squares methodology, Sezgin (2007) found that between 1950 and 2003, there are political business cycles in Turkey. Sezgin (2007), also, pointed out that the public expenditures and budget deficits increase in election periods and this situation hurts economic growth in these periods.

In political business cycle studies, the possibility where the overall good performance of economy governs the election timing should be eliminated since it is assumed that the macro economy is driven by elections by means of manipulation in Nordhaus model. Conversely, good macro conditions can trigger the early elections since good economic conditions may push politicians to shift the election timing to an earlier date. In such a situation, one has no need to manipulate economy through opportunistic political business cycles. Thus, it is necessary to check whether the early elections should stem from the bad economic conditions and some other factors like coalitions or not. The literature especially for Turkey ignores this aspect. So, this aspect is dealt in the next section and we investigate how economic conditions affect the early elections. In section 3, we explain the methodology to discuss political business cycles. In section 4, we determine political business cycles on fiscal and monetary variables. We will conclude in the section 5 whether there are opportunistic political business cycles in Turkey or not.

II. What determines the probability of an early election in Turkey?

Incumbents who can determine variable electoral terms have two options. First, incumbents can manipulate the economy to increase their chance for re-election. This is the case of opportunistic political business cycles. Secondly, if the economic conditions are favorable, they can call for an early election. This case is different from opportunistic political business cycles and it is called opportunistic election timing. A researcher should eliminate the case of opportunistic election timing to investigate political business cycles. In other words, when economic conditions are well, the probability of an early election should decrease.

Hausmann Test is mostly used in the literature to check the existence of opportunistic election timing. Berument and Heckelman (1998) used this method for UK and Japan. But this model is hard to apply to the Turkish case since there is a need to define instrumental variables which contain government approval rate. It is not possible to test the existence of opportunistic election timing for Turkey in this
context, since such statistics are not collected in Turkey. Also there exists the danger of misspecification for instrumental variables if some other instruments are used in the testing procedure.

This paper follows a different way to study the existence of opportunistic election timing. A probit approach is used to determine that when times are good there is no desire to make early elections in Turkey. Conversely, when times are bad, the possibility of early elections increases.

The probit model is a binary choice model (Johnston and Dinardo, 1997). The dependent variable $y_i$ takes the value of either one or zero depending on a latent variable $y_i^*$:

$$y_i^* = X_i \beta + \varepsilon_i$$

where, $\varepsilon_i$ distributed as $N(0, \sigma^2)$ and $y_i = 1$ if $y_i^* > 0$ and $y_i = 0$ otherwise. Then,

$$\Pr(y_i | x_i, \beta) = 1 - \phi(-x_i \beta) = \phi(x_i \beta).$$

where $\phi$ is cumulative standard normal distribution.

In the model in this paper the dependent variable is election (ELEC1) and its probability is determined via quarterly change in real gdp per capita (CRGDPCAP) and coalition formation (COAN). The variable COAN takes the value of -1, if there is only one ruling party in the government; it takes 0, if there is two ruling parties in the government; and if there are more than two ruling parties in government, it takes 1. Also, lags of quarterly change in real gdp per capita are used in this model because both current change in real gdp per capita and past changes in real gdp per capita have effects on early elections. However, current changes in real gdp per capita should have more affect than others.

The estimation output of probit model is given on the Table 1, below:

<table>
<thead>
<tr>
<th>Table 1: Probit Model Output for the Period 1969Q2-2007Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Variable</strong></td>
</tr>
<tr>
<td>-------------------------</td>
</tr>
<tr>
<td>CRGDPCAP</td>
</tr>
<tr>
<td>CRGDPCAP(-1)</td>
</tr>
<tr>
<td>CRGDPCAP(-2)</td>
</tr>
<tr>
<td>CRGDPCAP(-3)</td>
</tr>
<tr>
<td>COAN</td>
</tr>
</tbody>
</table>
The coefficients of variables are all significant on the Table 1. Change in real gdp per capita for current, one quarter, two and three quarters before the elections have negative signs and this shows that any decrease in real gdp per capita compared to previous quarter increases the possibility of an early election. Conversely, the possibility of an early election decreases when real gdp per capita increases compared to the previous quarter.

Also, the government formation has a very important affect on early elections. The possibility of an early election increases when the number of parties that form the government increases. The lags of change in real gdp per capita affect the probability of an early election negatively, thus it is permissible to conclude that early elections are not made when times are good. Conversely, when times are bad, the possibility of early election increases. As a result, we conclude that there is no opportunistic election timing in Turkey. So, political business cycles are created to manipulate the low performing economy and fool the voters.

III. A Simple Methodology

III.I. AR(1) Method

The stationarity of series have utmost importance in time series analysis. There exist two main approaches to cope with the stationarity problem. First of all, series can be manipulated via algebraic methods like differencing. After the algebraic manipulations, the stationarity of the series can be provided to some extent. But, this method is too much tricky, since successive differencing of series result in the disappearance of the meaning of the series. In addition, the models created with such an approach contain a lot of lagging variables which destroy the parsimony concept of econometric modeling. The second way to deal with non stationarity is the data filtering so that the series are de-trended and corrected for the seasonality.

For this paper, we have chosen to use the second method. The series are de-trended and seasonally adjusted via X12. Additive method is applied for the adjustments. The stationarity of the final series is checked utilizing unit root test after the adjustments made. The augmented dickey fuller test is used and
all the de-trended and seasonally adjusted series are found to be stationary. Such a result is predictable a priori since most macro economic data follow a simple linear trend with seasonal changes throughout the year.

We follow the methodology of Drazen (2000a), after the confirmation of the stationarity. According to Drazen (2000a) most empirical studies are performed via;

\[
y_t = \sum_{i=1}^{s} a_i y_{t-i} + b_0 + \sum_{j} b_j x_{ij} + dPDUM_t + \varepsilon_t
\]

where, \( y \) is outcome variable such as gdp, \( x_j \) are other economic variables that may also affect \( y \) and PDUM is a political dummy variable which is meant to be representing a political model.

Apart from Drazen (2000a) in this study, other economic variables called \( x_j \) are excluded because the paper studies the existence of opportunistic political business cycles. However, because future dependent variables are considerably governed by past values in ARMA context, the lagged values of dependent variable will have utmost importance.

The next step that we will take is to check autocorrelation function and partial autocorrelation function to determine AR and MA terms. As we complete this procedure for each data series, the correlograms show that the partial autocorrelation function vanishes after one lag and autocorrelation function diminishes to zero at a considerable pace. So, AR(1) process is chosen to be appropriate model.

A simple AR(1) process is given in Johnston and Dinardo (1997) as:

\[y_t = x_t \beta + u_t\]
\[u_t = \rho u_{t-1} + \varepsilon_t\]

and after some adjustment it becomes;

\[y_t = \rho y_{t-1} + (X'_t - \rho X'_{t-1}) \beta + \varepsilon_t\]

which establishes the basic framework of the study in this paper, since \((X'_t - \rho X'_{t-1}) = 0\). If we add an election dummy, the procedure that will be followed becomes;

\[y_t = \rho y_{t-1} + \alpha PDUM_t + \varepsilon_t\]
III.II. Data:

In this paper, quarterly data is utilized in empirical analysis because monthly data is hardly available and usage of the yearly data gives rise to blur the effects of elections on monetary and fiscal variables. The usage of quarterly data also enabled us to derive some special conclusions on the timing of political manipulation in the economy. By means of the quarterly data sets, we are able to detect the pattern of the political manipulation of the economy to create political business cycles within a maximum of three months time interval.

The data sets have different beginning dates and the earliest beginning date for the data set is second quarter of 1957. Even though for some data sets we have the chance to go further in the past, it will be inappropriate since the political system of young Turkish democracy is just trying to stand up after a crawling period. Conversely, the data sets end in the first quarter of the year 2008. This stems from the fact that Turkish Statistical Institute’s change on the calculation of the GDP series and our usage of the GDP data in probit model. The data sets are truncated to the first quarter of the year 2008, because we cannot test opportunistic election timing further in the time interval 2008-2011.

The dependent variables that we use in this study are budget deficit, government expenditure, transfer payments (except interest payments), central bank credits, currency in circulation, and M1 money supply. We aren’t able to extend all data sets to the same earliest point in the time because of the usage of different data sources. Also, at first, we worked on the original data sets without truncating them to a common starting date. Afterwards, we started all our data sets from the minimum possible starting date. In the case where the data sets do not become limited, also, robustness checks were made especially for fiscal variables by means of sample changes.

The time coverage of the data sets is shown on the Table 2 below:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Budget Deficit</strong></td>
<td>1969Q2-2008Q1</td>
</tr>
<tr>
<td><strong>Government Expenditure</strong></td>
<td>1969Q2-2008Q1</td>
</tr>
<tr>
<td><strong>Transfer Payments except Interest Payments</strong></td>
<td>1978Q2-2008Q1</td>
</tr>
<tr>
<td><strong>Central Bank Credits to the Government</strong></td>
<td>1986Q2-2003Q1</td>
</tr>
</tbody>
</table>
Time span for the central bank credits to the government is shorter than the other data sets. This is an interesting point in our analysis. This data set is not extended to 2008, because central bank credits are diminished considerably after 2003. This fact strongly related to the independence of central bank and its policy change towards inflation targeting.

Monthly Consolidated Budget Expenditure and Income Realization (1957-1993) (1993) book of Finance Ministry and EVDS system of Central Bank of Turkey were used to collect the fiscal data sets. Monetary data is retrieved from EVDS system of Central Bank of Turkey. General Election Dates of Turkey is collected by means of Belge.net and given on the Table 3:

<table>
<thead>
<tr>
<th>Election #</th>
<th>Date</th>
<th>Election #</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Election #1</td>
<td>02.05.54</td>
<td>Election #8</td>
<td>06.11.83</td>
</tr>
<tr>
<td>Election #2</td>
<td>27.10.57</td>
<td>Election #9</td>
<td>29.11.87</td>
</tr>
<tr>
<td>Election #3</td>
<td>15.10.61</td>
<td>Election #10</td>
<td>20.10.91</td>
</tr>
<tr>
<td>Election #4</td>
<td>10.10.65</td>
<td>Election #11</td>
<td>24.12.95</td>
</tr>
<tr>
<td>Election #5</td>
<td>12.10.69</td>
<td>Election #12</td>
<td>18.04.99</td>
</tr>
<tr>
<td>Election #6</td>
<td>14.10.73</td>
<td>Election #13</td>
<td>03.11.02</td>
</tr>
<tr>
<td>Election #7</td>
<td>05.06.77</td>
<td>Election #14</td>
<td>22.07.07</td>
</tr>
</tbody>
</table>

We use election dummies based on general election dates and replace PDUM variable in the equation of:

\[ y_t = \rho y_{t-1} + \alpha PDUM_t + \epsilon_t \]  \hspace{1cm} (1)

Then, the empirical equation becomes:

\[ y_t = \rho y_{t-1} + \alpha ELEC\#_t + \epsilon_t \]  \hspace{1cm} (2)

ELEC\# have 15 forms related to the election quarters as ELEC1,…, ELEC15. These forms are defined by:
ELEC1: It takes the value of 1 in the election quarter and 0 otherwise.

ELEC2: It takes the value of 1 one quarter before the election quarter and 0 otherwise.

ELEC3: It takes the value of 1 two quarters before the election quarter and 0 otherwise.

ELEC4: It takes the value of 1 three quarters before the election quarter and 0 otherwise.

ELEC5: It takes the value of 1 four quarters before the election quarter and 0 otherwise.

ELEC6: It takes the value of 1 one quarter after the election quarter and 0 otherwise.

ELEC7: It takes the value of 1 two quarters after the election quarter and 0 otherwise.

ELEC8: It takes the value of 1 three quarters after the election quarter and 0 otherwise.

ELEC9: It takes the value of 1 throughout the election quarter and one quarter before election quarter; it takes 0 otherwise.

ELEC10: It takes the value of 1 throughout election quarter, one quarter and two quarters before the election quarter; it takes 0 otherwise.

ELEC11: It takes the value of 1 throughout the election quarter, one quarter, two quarters and three quarters before the election quarters; it takes 0 otherwise.

ELEC12: It takes the value of 1 throughout election quarter, one quarter, two quarters, three quarters and four quarters before the election quarters; it takes 0 otherwise.

ELEC13: It takes the value of 1 throughout one quarter and two quarters after the election quarters; it takes 0 otherwise.

ELEC14: It takes the value of 1 throughout one quarter, two quarters and three quarters after the election quarters; it takes 0 otherwise.

ELEC15: It takes the value of 1 throughout one quarter, two quarters, three quarters and four quarters after the election quarters; it takes 0 otherwise.

To use such detailed set of dummy variables provides us with two advantages. Firstly, the starting period of manipulative activities of politicians can be detected with respect to the election quarter. Secondly, it allows us to determine the length of manipulation period. Thus, it is beneficial to use such an extensive set of dummies in the empirical work. But, using two or more dummies jointly gives rise
to near singular matrix because adding more and more dummy variables create dependent vector sets. So, we allowed no more than one dummy in each empirical setup.

IV. Empirical Results

**Budget Deficit:**

When government budget deficit is taken as dependent variable and the regression structure in equation (2) is applied with election dummies for the period 1969Q2-2008Q1, three important conclusions can be derived. First of all, the coefficient of ELEC1 variable is statistically significant and has a negative sign in the equation 1 on the Table 4 below. This points that government budget gives deficit in the election quarters. Secondly, the coefficient of ELEC3 in the equation 2 on the Table 4 is statistically significant and has a positive sign. This points out that the budget gives a surplus two quarter before election quarters. Thirdly, the coefficient of ELEC9 is statistically significant in the equation on the Table 4 and has a negative sign which means budget gives deficit both in the election quarters and one quarter before the elections. So, it is suitable to conclude that the elections affect the government budget and government budget gives deficit between 3 and 6 months before the election date. As a result, it is clear that politicians in Turkey give reaction between 3 and 6 months time prior to an election and manipulate the economy by means of government budget.

**Table 4: Empirical Results on Budget Deficit for the Period 1969Q2-2008Q1**

<table>
<thead>
<tr>
<th>Equation 1</th>
<th>Equation 2</th>
<th>Equation 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Variable</td>
<td>Budget Deficit</td>
<td>Dependent Variable</td>
</tr>
<tr>
<td>C</td>
<td>-1450</td>
<td>0.98</td>
</tr>
<tr>
<td>ELEC1</td>
<td>-718537</td>
<td>0.05</td>
</tr>
<tr>
<td>AR(1)</td>
<td>-0.42</td>
<td>0.00</td>
</tr>
<tr>
<td>Adj. R^2</td>
<td>0.18</td>
<td>Adj. R^2</td>
</tr>
</tbody>
</table>

2 Adj. R^2 is an abbreviation for adjusted R square value.
The time coverage of budget deficits is shortened to the period of 1986Q1-2008Q1 for a robustness check. The results of prior study didn’t change i.e. the coefficients of ELEC1, ELEC3, and ELEC9 variables are statistically significant and have negative, positive, and negative signs respectively. The outputs related to them are shown in equations 1, 2, and 3 on the Table 5. So, the results on the 1985Q4-2008Q1 interval are not different from the results on 1969Q2-2008Q1 interval.

Table 5: Empirical Results on Budget Deficit for the Period 1986Q1-2008Q1

<table>
<thead>
<tr>
<th>Equation 1</th>
<th>Equation 2</th>
<th>Equation 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Variable</td>
<td>Budget Deficit</td>
<td>Dependent Variable</td>
</tr>
<tr>
<td>C</td>
<td>-2591</td>
<td>0.98</td>
</tr>
<tr>
<td>ELEC1</td>
<td>-1196699</td>
<td>0.05</td>
</tr>
<tr>
<td>AR(1)</td>
<td>-0.42</td>
<td>0.00</td>
</tr>
<tr>
<td>Adj. R^2</td>
<td>0.19</td>
<td></td>
</tr>
</tbody>
</table>

**Government Expenditure:**

There is no clear cut result on the effects of elections on government expenditure. If nominal expenditure is taken as dependent variable for the period of 1969Q1-2008Q1, then the coefficient of ELEC13 is found to be statistically significant with negative sign in the equation 1 on the Table 6. This shows that the contraction on government expenditure continues during two quarters after the election quarters.

Table 6: Empirical Results on Government Expenditure for the Period 1969Q2-2008Q1

<table>
<thead>
<tr>
<th>Equation 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Variable</td>
</tr>
<tr>
<td>Variables</td>
</tr>
<tr>
<td>C</td>
</tr>
<tr>
<td>ELEC13</td>
</tr>
<tr>
<td>AR(1)</td>
</tr>
<tr>
<td>Adjusted R^2</td>
</tr>
</tbody>
</table>
As a robustness check, the time coverage of government expenditure data is shortened to the period of 1986Q1-2008Q1. The results of prior study didn’t change i.e. the coefficient of ELEC13 variable is found to be statistically significant with negative sign in the equation 1 on the Table 7.

Table 7: Empirical Results on Government Expenditure for the Period 1986Q1-2008Q1

<table>
<thead>
<tr>
<th>Equation 1</th>
<th>Dependent Variable</th>
<th>Government Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
<td>Coef.</td>
<td>Prob.</td>
</tr>
<tr>
<td>C</td>
<td>405197</td>
<td>0.28</td>
</tr>
<tr>
<td>ELEC13</td>
<td>-1897412</td>
<td>0.10</td>
</tr>
<tr>
<td>AR(1)</td>
<td>-0.39</td>
<td>0.00</td>
</tr>
<tr>
<td>Adjusted R^2</td>
<td>0.15</td>
<td></td>
</tr>
</tbody>
</table>

To conclude, it can be said that politicians diminish government expenditure at least for two quarters compared to previous periods after the election quarters.

Transfer Payments:
Transfer payments are simple policy instruments to manipulate the economy. Politicians tend to use these instruments before the elections to increase their probability to be re-elected. As we use transfer payments in the usual empirical setup, the coefficient of ELEC1 is statistically significant and has positive sign for the period of 1978Q2-2008Q1 in the equation 1 on the Table 8. This fact points out that the economy is manipulated via transfer payments in election quarters.

Table 8: Empirical Results on Transfer Payments except Interest Payments for the Period 1978Q2-2008Q1

<table>
<thead>
<tr>
<th>Equation 1</th>
<th>Dependent Variable</th>
<th>Transfer Payments except Interest Payments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
<td>Coef.</td>
<td>Prob.</td>
</tr>
<tr>
<td>C</td>
<td>-848</td>
<td>0.99</td>
</tr>
<tr>
<td>ELEC1</td>
<td>757151</td>
<td>0.07</td>
</tr>
<tr>
<td>AR(1)</td>
<td>-0.37</td>
<td>0.00</td>
</tr>
<tr>
<td>Adjusted R^2</td>
<td>0.15</td>
<td></td>
</tr>
</tbody>
</table>
If AR(1) methodology is applied to the period of 1986Q1-2008Q1 for the transfer payments, prior result for the period of 1978Q2-2008Q1 doesn’t change. The coefficient of ELEC1 is statistically significant and has positive sign in the equation 1 on the Table 9. So, the model which was used seems to be robust.

**Table 9: Empirical Results on Transfer Payments except Interest Payments for the Period 1986Q1-2008Q1**

<table>
<thead>
<tr>
<th>Equation 1</th>
<th>Dependent Variable</th>
<th>Transfer Payments except Interest Payments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
<td>Coef.</td>
<td>Prob.</td>
</tr>
<tr>
<td>C</td>
<td>-1153</td>
<td>0.99</td>
</tr>
<tr>
<td>ELEC1</td>
<td>883518</td>
<td>0.10</td>
</tr>
<tr>
<td>AR(1)</td>
<td>-0.37</td>
<td>0.00</td>
</tr>
<tr>
<td>Adjusted R^2</td>
<td>0.15</td>
<td></td>
</tr>
</tbody>
</table>

**Central Bank Credits:**

Central bank credits to the government are studied for the time period of 1986Q1-2003Q1. Central bank credits to the government decrease to very low levels after the period 2003Q1, since Central bank gained its independence. Before the central bank gained independence, it was used as a source of government funds by means of seigniorage revenues and credits. On the other hand after the central bank independence, political pressure on the central bank diminished considerably.

Central bank credits increase two quarters before the election quarters, since ELEC2’s coefficient is statistically significant and positive in the equation 1 on the Table 10. No other result was found for central bank credits. So, the only derivation that we can make is on the increase of central bank credits two quarters before the election quarter.

**Table 10: Empirical Results on Central Bank Credits for the Period 1986Q2-2003Q1**

**Equation 1**
Currency in Circulation:

It is usual for the politicians to increase money supply via pressuring monetary authority at the expense of inflation before the election periods. Applying our usual methodology, the coefficients of ELEC5 is found statistically significant with negative sign in the equation on the Table 11 for the period of 1986Q1-2008Q1. This finding points out that money in circulation decreases in the fourth quarters prior to elections. However, this finding doesn’t provide us with sufficient explanation. Thus, we make further attempts to uncover the relationship between currency in circulation and political business cycles.

Table 11: Empirical Results on Currency in Circulation for the Period 1986Q1-2008Q1

<table>
<thead>
<tr>
<th>Equation 1</th>
<th>Dependent Variable</th>
<th>Currency in Circulation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Variables</td>
<td>Coef.</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>1.0022</td>
</tr>
<tr>
<td></td>
<td>ELEC5</td>
<td>-0.0148</td>
</tr>
<tr>
<td></td>
<td>AR(1)</td>
<td>-0.39</td>
</tr>
<tr>
<td></td>
<td>Adjusted R^2</td>
<td>0.19</td>
</tr>
</tbody>
</table>

In a second attempt, the money in circulation/GDP ratio is used as dependent variable. When the economy grows, it is permissible to increase the money supply, so, it is logical to use the money in circulation/GDP ratio in the analysis. However, no significant results are found in the empirical studies.

As a third attempt to reveal the relation of currency in circulation and elections is to investigate change in money in circulation. Change in currency in circulation is affected via ELEC4, significantly for the
period of 1985Q4-2008Q1 in the equation 1 on the Table 12. The sign of coefficient of ELEC4 is positive. This result points out that, in the third quarter before election quarter, the currency in circulation increased considerably.

**Table 12: Empirical Results on Change in Currency in Circulation for the Period 1986Q2-2008Q1**

<table>
<thead>
<tr>
<th>Equation 1</th>
<th>Dependent Variable</th>
<th>Change in Currency in Circulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
<td>Coef.</td>
<td>Prob.</td>
</tr>
<tr>
<td>C</td>
<td>-0.35</td>
<td>0.30</td>
</tr>
<tr>
<td>ELEC4</td>
<td>4.24</td>
<td>0.01</td>
</tr>
<tr>
<td>AR(1)</td>
<td>-0.40</td>
<td>0.00</td>
</tr>
<tr>
<td>Adjusted R^2</td>
<td></td>
<td>0.21</td>
</tr>
</tbody>
</table>

For the last attempt, we used change in money in circulation/GDP ratio as dependent variable to reveal the relation between currency in circulation and elections. This model pointed out that coefficients of ELEC3, ELEC4, ELEC7, ELEC11, ELEC12, and ELEC15 are statistically significant in the equations on the Table 13. The coefficients of ELEC3, ELEC4, ELEC11, and ELEC12 are positive. This result showed that the currency in circulation/GDP ratio increases considerably at most for a year before the election period. On the other hand, the coefficients of ELEC7 and ELEC15 are found to be negative. This finding supports the result that the ratio of currency in circulation/GDP decreases at most four quarters after the election quarter.

**Table 13: Empirical Results on Change in Currency in Circulation/GDP for the Period 1986Q2-2008Q1**

<table>
<thead>
<tr>
<th>Equation 1</th>
<th>Change in Currency in Circulation/GDP</th>
<th>Equation 2</th>
<th>Change in Currency in Circulation/GDP</th>
<th>Equation 3</th>
<th>Change in Currency in Circulation/GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-0.11</td>
<td>0.78</td>
<td>C</td>
<td>-0.25</td>
<td>0.53</td>
</tr>
<tr>
<td>ELEC3</td>
<td>3.56</td>
<td>0.08</td>
<td>ELEC4</td>
<td>5.53</td>
<td>0.01</td>
</tr>
<tr>
<td>AR(1)</td>
<td>-0.38</td>
<td>0.00</td>
<td>AR(1)</td>
<td>-0.38</td>
<td>0.00</td>
</tr>
</tbody>
</table>
In summary, there exists strong empirical support on the increase in the currency in circulation/GDP ratio before the election quarters. Also, the currency in circulation/GDP ratio is decreased considerably after the elections. These results support the existence of opportunistic political business cycles in the currency in circulation.

**M1 Money Supply:**

According to the opportunistic political business cycle theory, the M1 money supply is expected to increase before the election period. To uncover this relationship, M1 or M1/GDP ratio is used as dependent variables in the empirical setup. But no significant and consistent result is determined. Also, no consistent result with the theory is found when change in M1 money supply is used as the dependent variable. Only consistent result with the theory is detected if M1 money supply/GDP is employed as the dependent variable.

The coefficient of ELEC4 is found to be statistically significant with positive sign in the equation 1 on the Table 14. This result shows that M1 money supply/GDP ratio increases three quarters prior to the election quarter compared to other periods.
Table 14: Empirical Results on Change in M1 Money Supply/GDP for the Period 1986Q2-2008Q1

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coef.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.11</td>
<td>0.71</td>
</tr>
<tr>
<td>ELEC4</td>
<td>2.36</td>
<td>0.10</td>
</tr>
<tr>
<td>AR(1)</td>
<td>-0.38</td>
<td>0.00</td>
</tr>
<tr>
<td>Adjusted R^2</td>
<td>0.16</td>
<td></td>
</tr>
</tbody>
</table>

In summary, M1 money supply seems to be manipulated, if the effects of GDP are taken into the account. M1 money supply is increased before the elections more than it is needed, where the need for money supply is mainly determined via GDP.

V. Conclusion

The results which we derived till this point are complicated. A better way to assess all the outputs of this work is to summarize them with a table. On the Table 15, we depicted the relations between macroeconomic variables and elections.

Table 15: Relations of Fiscal and Monetary Variables with Elections

<table>
<thead>
<tr>
<th>Variables</th>
<th>Before the Election</th>
<th>In the Election</th>
<th>After the Election</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget Deficit</td>
<td>High Relation</td>
<td>High Relation</td>
<td>No Relation</td>
</tr>
<tr>
<td>Gov. Expenditure except Interest Payments</td>
<td>No Relation</td>
<td>No Relation</td>
<td>High Relation</td>
</tr>
<tr>
<td>Transfer Payments except Interest Payments</td>
<td>No Relation</td>
<td>High Relation</td>
<td>No Relation</td>
</tr>
<tr>
<td>Central Bank Credits</td>
<td>No Relation</td>
<td>High Relation</td>
<td>No Relation</td>
</tr>
<tr>
<td>Currency in Circulation</td>
<td>High Relation</td>
<td>High Relation</td>
<td>High Relation</td>
</tr>
</tbody>
</table>
According to the Table 15, government budgets give deficits before and in the election quarters. Also, government expenditures decrease after the election quarter. In addition, voters are pleased via transfer payments in the election periods. Central bank credits tend to be used a source of government fund in the election quarter. Currency in circulation increases before the election quarter. It keeps increasing in election quarter. But after the election quarters, it is forced to decrease to cope with the inflationary pressures. Moreover, politicians in Turkey seem to increase M1 money supply before the election quarters.

It is clear that opportunistic political business cycles exist in Turkey based on the empirical evidence. Turkish politicians tend to manipulate the economy via fiscal and monetary instruments before the elections and, afterwards, they try to correct the economy applying tight fiscal and monetary policies.

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Turkiye Secimleri. [online] Available at: <http://www.belgenet.net/>[Accessed multiple times]