Public Expenditure and Political Business Cycles inTurkey

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Abstract: According to the theory of "Political Business Cycles (PBC)", politicians prefer to pursue opportunistic policies in order to increase their chance of election. For this reason, they apply expansionary policies before the elections. Hence, they start to do this by increasing public expenditures. There is an increase in the indicators of money parallel to the increase in public expenditures. In this study it is examined that whether there have been appropriate developments in terms of PBC theory during the elections of six congressmen in the period after 1980. In order to determine the effect of PBC "the traditional opportunistic model" from Nordhaus is used to test the PBC effect. "The opportunistic model" from Nordhaus is tested through the autoregressive analysis method which is used by Alesina, Cohen and Roubini (1991,1992) in their studies for the OECD countries and industrial countries. The results obtained as a result of the empirical analysis support the PBC theory.

Introduction

The history of economics is the history of debates between the ones who claim that the government intervention is necessary and who claim that it is unnecessary. In the framework of these debates, applications of both of these approaches are observed due to the economic conditions of each period. However, there is a fact which should be accepted that every day the state intervenes in the economic life with different reasons and through various legal and institutional regulations. If the economists are not able to put their developed theories into the application, then they just do brain gymnastic. Thus, this situation is seemed during many years and this distinction between economics and politics give the idea to the politicians that they can arrange the economic life according to their own vote calculations. This idea becomes widespread along with the economists isolate themselves from the legal and institutional structure of the society (Savaş, 1997). Especially in the developing countries with a less institutional and legal structure, the public share in the economy is more than others. Through the political instabilities it is understood that the financial issues are not the only reason of this situation. In the beginning the state is seem as maintaining the social order and it is associated with the Leviathan which is a superhuman being, whereas later it is seen that the state is transformed to a monster that gives harm to its environment. Especially, after the Second World War the rapid increase in the contribution of state in the economic life is defined as a very big danger (Erim, 2007). If being away from the economic life is impossible for the state, at least there should be a limit of this contribution. Politics and political institutions should be accepted as endogenous rather than exogenous in the economic theories. After the long historical development process from this view, the Political Economic Theory (PET) is developed.

According to the PBC theory economy is manipulated by policy makers during the electoral periods since politicians behave with political interest mostly in these periods. If the politicians are not restricted enough with the laws in terms of their usage of economic policy tools, they prefer to pursue opportunistic policies instead of policies for the interest of the public. In order to affect electorates, they mostly increase public expenditures. The financing of the increased public expenditures is funded through increasing the money supply instead of increasing taxes since taxes are not pleased by the electorates (Azgün, 2006). In this study, it is examined that whether the PBC has an effect on the money variables of public expenditures, money supply and money in circulation during the general elections of six congressmen in the period after 1980 in Turkey. "The traditional opportunistic model" of Nordhaus is used in order to test the effect of PBC. "The opportunistic model" from Nordhaus is tested through the

autoregressive analysis method which is used by Alesina, Cohen and Roubini (1991, 1992) in their studies for the OECD countries and industrial countries.

Political Business Cycles Models

The concept of Political Business Cycles is firstly used by Nordhaus. According to Nordhaus, by aiming vote maximization politicians pursue expansionary policies before the elections in order to boost the economy whereas they pursue contractionary policies after the elections in order to remove the effects of these expansionary policies. Therefore, a cycle occurs in economy due to the electoral periods (Nordhaus, 1975).

When the studies related with Political Business Cycles is examined it is observed that the literature regarding to this issue is developed on two cycles. The first one is "traditional model" that is considered in two categories and the first of these is the opportunistic model developed by Nordhaus and the second one is the partisanship model developed later by Hibbs (Hibbs, 1977). According to opportunistic model, politicians do not have partisan objectives, they just appeal all kinds of manipulations in order to win elections. According to partisanship model, politicians try to gain votes of their own electoral group by implementing ideological policies. Secondly, in the framework of "rational expectations theory" which is popular in 1980s, the PBC theory has been developed as a "modern approach". With the acceptance of rational expectations theory, the PBC theory is criticized at the beginning. However, as a result of the empirical studies positive findings are obtained regarding to that the PBC theory can still be explanatory even though the rational expectations theory is valid. According to the modern PBC theory, because of the asymmetric information between the governments and citizens governments continue to exhibit opportunistic or partisanship behaviors.

Methodology

In this study, in order to determine whether the politicians pursue opportunistic policies or not in the electoral periods, the autoregressive analysis method is used which is applied by Alesina, Cohen and Roubini (1991,1992) in their studies for the OECD countries and industrial countries (Alesina, 1991). The autoregressive models are preferred instead of the structural models regarding each macroeconomic indicator which is due to the reason that by testing each variable with the same model it is aimed to decrease the probability of difference that can be arisen from modeling error in the determination of the effect of electoral periods. Furthermore, in the literature it is emphasized that structural models are mainly valid in the developed countries with strong economy whereas their validity is questionable in the less developed and developing countries with fragile economic system (Özkan, 2005).

General notation of the autoregressive model which is used in this study is as in the following:

$$Y_t = \alpha_0 + \alpha_1 Y_{t-1} + \alpha_2 Y_{t-2} + \ldots\ldots + \alpha_n Y_{t-n} + PBCDUMMY + \varepsilon_t \tag{1}$$

Here, Yt represents each macroeconomic indicator. PBCDUMMY is the dummy variable that indicates the dynamic implications of the theory of political business cycles. PBCDUMMY is defined as "1" for the election quarter and three quarters before the election, and defined as "0" for other periods. ε_t represents the error terms.

The lagged values of autoregressive model is determined through the "from general to special theory". The stability of series is examined through the ADF unit root test (Dickey and Fuller, 1990). The Jarque-Bera(JB) test is used in order to test whether the normality assumption, which is one of the necessary assumptions to perform autoregression analysis, is satisfied or not (Bera and Jarque, 1981). After these models are tested, through the Breusch Godfrey (LM) test it is checked whether there is an autocorrelation between the error terms or not (Godfrey, 1988). For error terms having constant variance is another necessary condition for autoregression analysis. The ARCH LM test is used in order to determine whether the error terms have constant variance or not.
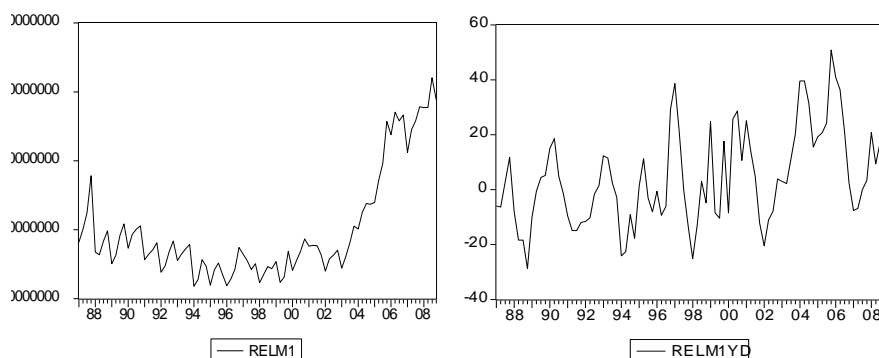
Test Results
Unit Root Analyses Result

When the graphic of public expenditures series in real terms is examined, seasonal effects are observed in the series. It is observed that the coefficients are significant in the regression analysis which is performed with the seasonal dummy variables. The seasonality effects are removed from the series and the stability of the series is checked with the ADF test. As seen on Table 1, the real public expenditures series which does not include seasonal effects is not stable as its degree. It is seen that the yearly percentage change of series is stable with 0.05% significance level according to the ADF model which has a constant term and trend.
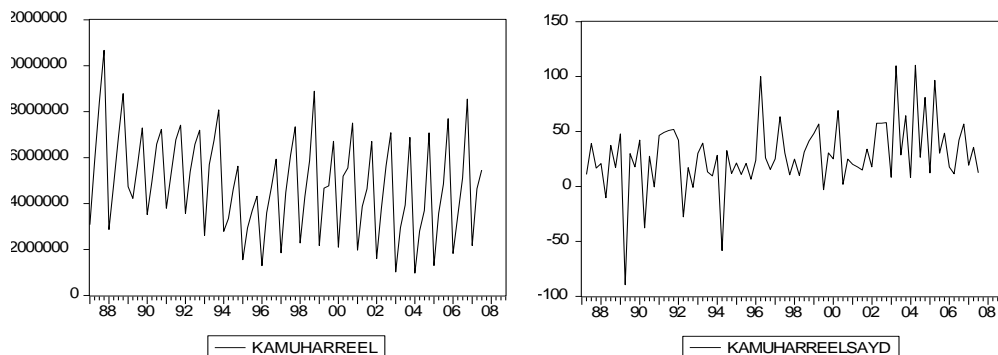
Figure 1: Degree of Public Expenditures and Its Yearly Percentage Change Graphics

When the graphic of public expenditures series in real terms is examined, seasonal effects are observed in the series. It is observed that the coefficients are significant in the regression analysis which is performed with the seasonal dummy variables. The seasonality effects are removed from the series and the stability of the series is checked with the ADF test. As seen on Table 1, the real public expenditures series which does not include seasonal effects is not stable as its degree. It is seen that the yearly percentage change of series is stable with 0.05% significance level according to the ADF model which has a constant term and trend.

Figure 2: Degree of Real M1 and Its Yearly Percentage Change Graphics

When the graphic of Real M1 series is examined, at first it is observed that the series is not stable. Furthermore, it appears that there can also be seasonal effect. It is seen that the coefficients are significant as a result of the regression analysis done with the seasonal dummy variables. However, when the yearly percentage change is considered the seasonality effect disappears. Furthermore, when Table 1 is examined it is seen that while the real M1 series is not stable, the percentage change is stable in all ADF models in terms of various significance levels.
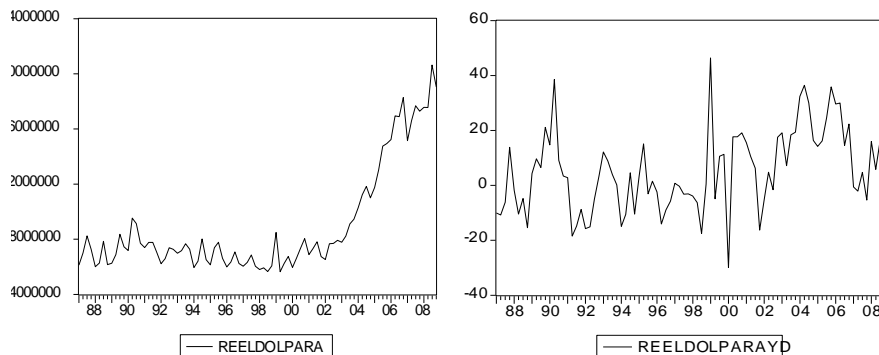
Figure 3: Degree of Real Money in Circulation and Its Yearly Percentage Change Graphics

When the graphic of real money in circulation is examined, it is understood that the series is not stable, however it is not certainly understood whether there is a seasonal effect or not. As a result of the regression analysis done with the seasonal dummy variables it is seen that the coefficients are insignificant, therefore it is understood that there is no seasonality effect. When the results of the unit root test is examined, it is observed that the series of real money in circulation is not stable in degree of level whereas the percentage change is stable in all ADF models in terms of various significance levels.

The results of ADF unit root test, which is performed to determine the stability structures of series, are shown on Table 1.

	with constant term	Lag.	constant term and trend	Lag.	without constant term and trend	Lag.
Public expenditures	-2,04	3	-1,47	3	-0,91	4
Public expenditures %	-1,80	8	-3,79**	3	-0,76	4
M1	0,03	4	-1,00	4	0,98	4
M1%	-2,70***	4	-4,08*	7	-2,02**	8
Money in circulation	1,62	6	0,37	6	2,12	6
Money in circulation %	-2,85***	4	-4,90*	3	-2,44**	4
Kritical values,	**%1 -3,51**		**-4,06**		**-2,59**	
	%5 -2,89		**-3,46**		**-1,94**	
	%10 -2,58		**-3,15**		**-1,61**	

Table 1: ADF Test Results

Autoregressive Model Analyses Results

The summary of statistical values for autoregressive model examining public expenditures, money supply and money in circulation is shown on Table 2. The autoregressive models which are estimated by lagged values are as in the following:

Pub.Expen. = 2,53+ 13,6 Pub.Expen. (-2) + 0,18 Pub.Expen. (-4) + 0,39 PBCdummy
     (0,00) (0,03)   (0,08)   (0,00)

M1   = 7,47   +0,79 M1(-1)   +0,42 M1(-5)   + 0,21 M1(-7)   − 0,22 M1(-8)   +8,22PBCdummy
(0.05)   (0.00)   (0.01)   (0.00)   (0.04)   (0.03)   (0,06)

M.Cir. = 2,95+ 0,49 M.Cir.(-1) + 0,20 M.Cir.(-2) - 0,33 M.Cir.(-4) + 26 M.Cir.(-5) + 11,79 PBCdummy
     (0,41)   (0,00)   (0,07)   (0,00)   (0,01)   (0,00)

	Dependent Variable							
Independent Varieble	Public			Money Supply			Money Circulation	
	α_i	t ist.	t pro	α_i	t ist.	t ol.	α_i	t ist.	t prob
PBC	13,6	2,17	0,03	8,22	1,87	0,06	11,79*	3,07	0,00
R^2	0,25			0,62			0,44		
DW	2,07			2,07			2,05		
F probably	0,00			0,00			0,00		
JB	47,47 (0.00)			1,40 (0,49)			17,10 (0,00)		
LM	0,85 (0,47)			0,53(0,58)			0,56(0,56)		
ARCH	0,92 (0,40)			0,30(0,73)			1,27(0,27)		

Table 2: Autoregressive Analyses Results

According to the regression estimate results on Table 2, it is observed that there is no autocorrelation and changing variance problems in the LM and ARCH tests. Even the normality assumption is not satisfied in the model regarding money supply since the number of observation (80) is sufficient enough and since there is no changing variance problem the regression is highly confidential.

When coefficient estimate results regarding to the examined variables are concerned, it is seen that PBCDummy coefficient is positive and significant as appropriate to the theory. This acquired result confirms the argument of the PBC theory that when the politicians try to affect the electorates they mostly use the "public expenditures" as fiscal policy tool. As a result of the increase in public expenditures there is an increase in money supply and money in circulation.

Conclusion

Manipulating the macroeconomic policies in the direction of politic interests is one of the significant problems of Turkish economy as in the economies of many countries. In order to come to power and to establish government, politicians do not avoid using macroeconomic policies as instruments. In this study it is aimed to determine whether politicians have opportunistic behavior or not. Therefore, it is analyzed that being appropriate to the PBC theory whether there is a significant change in policy instrument variables such as public expenditures, money supply and money in circulation during the electoral periods. When the obtained results are examined it is observed that the election dummy variable regarding public expenditures, money supply and money in circulation is positive and statistically significant which is appropriate to the theory. These findings assert that governments pursue opportunistic policies in electoral periods in Turkey.

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