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A new view into Political Business Cycles: Household Expenditures in Albania

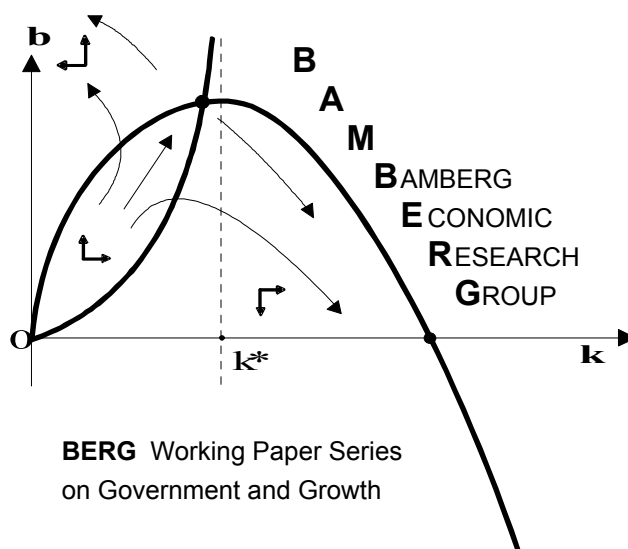
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A new view into Political Business Cycles: Household Expenditures in Albania

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Abstract

Over the last decades, there has been plenty of research and articles on Political Business Cycles (PBC), aiming at analyzing and explaining the use of fiscal and monetary instruments to stimulate economic growth before elections, to impress the voters. Following other researches for PBC in Albania, in which there was found clear evidence of fiscal expansion before elections, but no significant changes in inflation and GDP, as theory predicts, we analyze the peoples' expectations related to elections outcomes, and the way these expectations influence their decisions to spend, and consequently the macroeconomic variables.

Key words: Political Business Cycle, Household Behaviour, Albanian
JEL Classification: E32, O23, N14

A new view into Political Business Cycles: Household Expenditures in Albania

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1. Introduction

“It is pretty generally accepted that the popularity of political parties at election time is related to business conditions” (Tibbitts, 1931, p. 596). It is obvious that the economic performance of a government determines to a large extent its likelihood of reelection, and therefore the economic factors influence political factors and in turn, incumbent may manipulate economy in an attempt to attract votes.

Over the last decades, there has been plenty of research and articles published on Political Business Cycles (PBC), aiming at analyzing and explaining the use of fiscal and monetary instruments by the incumbent to stimulate economic growth before elections, to impress the voters. The government may behave opportunistically and inefficiently prior to elections engaging in expansionary economic policies, to increase the output and decrease unemployment, in order to please the voters, however, creating Political Business Cycles. Researchers have also investigated how the economic performance influences elections outcomes; nevertheless, this approach is not subject of our research. There has been only one research paper written on Political Business Cycles in Albania (Imami and Lami, 2008). According to it, there is clear evidence of Political Cycles in Fiscal instruments but no in Monetary ones. Interestingly, the significant increase of public expenditures and other fiscal instruments prior to elections did not lead to that significant change in inflation and output, as predicted by economic theory. There could be several reasons and explanations. One possible explanation is that the transmission mechanisms do not reflect on time changes and signals in the economy. Another explanation might be the possible existence of other phenomena in the economy, which offset the effects, generated by changes in policies, but are not directly affected by them. This very second hypothesis motivated us to conduct further research, which may through

new light into PBC theory and empirics. Our main focus lays thereby on the consumer expenditures, to identify possible variations related to elections and the reasons behind them. Thus, the objective of our research is to investigate on other aspects of Political Business Cycles in Albania, whose results might be applicable in other transition and development countries. We analyze data of retail trade index at quarterly level, between first quarter 1999 and last quarter 2007. The period prior 1999 was not taken into consideration because of the lack of reliable data. During the analyzed period there took place two parliamentary elections, namely *June 24, 2001* and *July 3, 2005*.

After a short overview concerning the political business cycle theory and the existing empirical results in the upcoming chapter, the guiding theoretical background will be presented in chapter three together with the empirical part of the paper.

2. PBC Theory and Empirical Background

The phenomena of manipulation of the economy by the incumbent for electoral purpose, is called Political Business Cycles (PBC), introduced by Nordhaus (1975). Using expansionary monetary and fiscal policies, incumbent politicians manipulate the economy to gain electoral advantage by producing a pre-election boom with associated with a reduced unemployment rate. In the upcoming election, myopic voters support the leading party as it was able to present it self as a successful economic leader creating a greater economic well-being. Meanwhile, the assumption of a short run Philips curve leads to higher inflation delayed to the period after the election, while politicians returned already to a more contractionary stance.

This PBC model opened the way for many following empirical and theoretical studies and publications and remains a point of reference. One of the most interesting PBC research works was done by Alberto Alesina and Nouriel Roubini. They analyzed data of three recent decades of 18 OECD countries investigating the relation between main macroeconomic variables and elections results (Alesina, Roubini, 1992). According to this study, there was no evidence of Opportunistic PBC of the Nordhaus type, either for output or for unemployment, except for two countries (Germany and New Zealand). However, the data showed electoral cycle on the inflation rate.

Evidence of PBC was also found in less developed and democratic countries. Gimpelsen (2001) made a research on the existence of PBC in Russia, finding evidence in support of it. Another study of Asutay (2004) provided clear evidence for the presence of PBC in Turkey. The incumbent in Turkey has used fiscal and monetary policy instruments to create PBC in order to improve the chances of being reelected. Also our previous research on the existence of Political Business Cycles in Albania indicated that the incumbent manipulate fiscal instruments, increasing public expenditures before elections.

There may be several explanations for the limited empirical support for the Nordhaus Opportunistic PBC on growth and unemployment. First of all, “rational voters” assumption limits such an approach, and therefore the policymakers, knowing this fact, do not try to generate Opportunistic PBC policies. Second, it is not an easy task to generate expansions well calculated and timed for elections (Alesina, Roubini, 1992). Third, which might be the case of development and transition economies, there may occur other economic phenomena, which could offset the effect of the increased public expenditures in outcome variables (output, unemployment, inflation, etc.), which we intend to address in our research.

3. Searching for cycles in private and households sectors expenditures

3.1 Background of the hypothesis

The Albanian public sector still employs a relatively high number of people, only about 20 percent less than the non-agriculture private sector (Worldbank 2006). The public administration remains substantially politicized, and often appointments of public servants are politically based (it is hard to find accurate figures in support of this phenomenon). According to Mjaft (2006) an Albanian NGO, 14074 employees have been fired from the public administration within about a year after the political rotation of year 2005 and, more specifically, about 80 % of the employees of the line ministries have been fired. Similar politicized waves of employments and firings have taken place also after the political rotation of 1992 and 1997. Thus, it is expected, that if there will be a rotation of political power, many public employees will loose their jobs. The following classical

period of a frictional unemployment will be very longer in an economic environment of officially 17 percent and estimated 30 percent of unemployment.

This high risk of unemployment may imply a significant increase in private savings before elections. Based on the permanent income hypothesis, the actual consumption depends also on the financial situation in future periods. For the special case of transition countries, we have also to take into account the special situation of high uncertainty concerning the economic situation in the upcoming years. Therefore, it seems to be adequate to assume a relatively high discount rate concerning future income. Based on this, the consumption decision depends mainly on the actual income and the expected income for the upcoming period. Households being affected by such political change as described as before, will tend save more and spend less in the months or quarters before elections, preparing for a longer period of unemployment and consequently affecting the aggregate demand and expenditures of the household sector.

3.2 Variables and Data specifications

We expect and will attempt to empirically test that the households, facing an increased uncertainty prior to election, will decrease their consumption expenditures, offsetting in this way the effects of other opportunistically manipulated incumbents' instruments on the final macroeconomic outcomes. To test the "household consumption" hypothesis we will use and investigate the volume Retail Trade Index (RTI) as an approximate indicator of the household consumption behavior in Albania^{*}. We will statistically test for a change (a reduction is expected) in the RTI. The RTI time series is in a quarterly basis, spanning from Q1-1999 to Q4-2007, adding up to 36 observations. There are two parliamentary elections taking place in this period, namely *June 24, 2001* and *July 3, 2005*.

^{*} There are no final private consumption estimations in a quarterly or higher level of frequency for Albania. The Retail Trade Index is estimated and published by the Institute of Statistics of Albania (INSTAT).

3.3 Specifications of empirical tests

Following the standard approach in this area,[†] we will apply the Intervention Analysis based on Box & Tiao (1975), a methodology for constructing a statistical model in our study. In this paper we test the hypothesis of the existence of changes in the retail trade index. Basically the test proceeds by subjecting the quarterly seasonally adjusted time series of these variables to a Box-Tiao intervention analysis using the most appropriate autoregressive-moving average (ARIMA) for the social process and an intervention term; here the intervention term models the time distance to the election day.

A simple formal representation of the intervention analysis is:

$$z_t = \mu + I_t + N_t$$

where μ denotes the mean level, the term I_t denotes the intervention effect and N_t denotes the noise of the time series which is modeled using a suitable ARMA(p,q) model,

$$N_t = \phi_1 N_{t-1} + \dots + \phi_p N_{t-p} + E_t - \theta_1 E_{t-1} + \dots + \theta_p E_{t-p}$$

where E_t denotes an independent error sequence.

The simplest, which corresponds to the t -test in a non-time series setting, is the Intervention term/variable, which in this case takes the form of a Pulse Intervention, meaning an abrupt jump in the series and then a gradual decline at the normal level of the series. Formally the pulse intervention term can be expressed as:

$$I_t = \omega_0 P_t^{(T)}$$

where $P_t^{(T)}$ is a pulse function,

$$P_t^{(T)} = \begin{cases} 0 & t \neq T \\ 1 & t = T \end{cases}$$

The parameter ω_0 measures the change caused by the intervention and is estimated along with the ARIMA time series component. The estimation procedure provides an estimate

[†] See for example McCallum (1978), Hibbs (1987), Alesina and Sachs (1988), Alesina and Roubini (1992). Hibbs (1977) offers a good introduction to the Box-Tiao technique.

of ω_0 and a confidence interval for the parameter. In our case the, dependent variable z_t is the Retail Trade Index that is assumed to be affected because of elections. The intervention variable I_t is expressed as a binary variable (dummy variable) indicating a specific time prior to election, as shown below. And the noise component of each specific dependent variable, N_t , is modeled by an appropriate ARIMA (p,d,q) found by following Box-Jenkins (BJ) Methodology (1970) as explained in more detail below.

We have created two kinds of political dummy variables (I_t) to capture the impact of the elections retail index, namely cumulative dummy and discrete dummy, each of which used for different purposes as explained in the section 3.5 (Empirical results) of this paper.

Note: For convenience we have denote $P_i^{(T)}$ with PD_i standing for Political Dummy

We have six cumulative political dummies (PD_i) and each of them is defined as:

$$PD 1 = \begin{cases} 1 - \text{for the three months prior to election} \\ 0 - \text{otherwise} \end{cases}$$

$$PD 2 = \begin{cases} 1 - \text{for the six months prior to election} \\ 0 - \text{otherwise} \end{cases}$$

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$$PD 6 = \begin{cases} 1 - \text{for the 18 months (one yaer and a half) prior to election} \\ 0 - \text{otherwise} \end{cases}$$

There have been created also six discrete PDid defined as:

$$PD 1d = \begin{cases} 1 - \text{for the three months prior to election} \\ 0 - \text{otherwise} \end{cases}$$

$$PD 2d = \begin{cases} 1 - \text{for the 4th up to the 6th month prior to election} \\ 0 - \text{otherwise} \end{cases}$$

$$PD\ 3d = \begin{cases} 1 - \text{for the 7th up to the 9th month prior to election} \\ 0 - \text{otherwise} \end{cases}$$

and so on for the PD4d, PD5d and PD6d

3.4 Estimation of the empirical model

In the first stage, we have followed precisely the Box-Jenkins (BJ) Methodology (1970). In the beginning of the process, the first step was removing the seasonal patterns from the time series. The seasonal adjustments are computed with the help of DEMETRA software[‡]. Next we carefully investigate on the stationarity of the time series as a necessity in further steps. Formally applying the Augmented Dickey-Fuller unit root test and also visually judging on the autocorrelation and partial autocorrelation function correlograms the RTI seasonally adjusted time series appeared to be a non-stationary one. To transform it in a stationary time series we tried the approach of an n order difference transformation on the original seasonal adjusted series. In this case, after the first order difference the obtained time series resulted from all the relevant tests to be stationary[§].

Based on Box-Tiao's (1975) intervention analysis, after ensuring for the stationarity, the time-series is modeled as *ARMA* (*Auto-Regressive Moving Averages*). By modeling through ARMA it is possible to prove if elections can explain the changes taking place in household expenditures, in addition to the past history of the variable and the random error term. Hence, it is necessary the identification of ARMA (p,q) benchmark model. To find the "best" ARMA model for each time series we are straightforwardly based on Box-Jenkins methodology (1970). Hence, in order to model the RTI time series as an ARMA we went through an iterative process of identification, estimation and diagnostic checking of several ARMA models until we found the most plausible one, deemed as the "best" for each series^{**}.

In the second stage we individually incorporated each of the political dummy variables in the ARMA model tentatively found in the first stage and re-estimated the whole model

[‡] DEMETRA is a standard software used by EUROSTAT to seasonally adjust every kind of EU figures.

[§] The n order difference is a strongly recommended efficient approach in most of the literature of transforming one time series from non-stationary to a stationary one

^{**} Gujarati (2003) makes a simple and clear explanation of the Box – Jenkins Methodology

now with an additional incorporated PD_i aiming at capturing the possible impact of elections on retail sales and test whether elections has any impact on the econometric time-series utilized by this study in addition to variable's past value and its respective error term. Thus, the impact of elections is considered to be an intervention or shock in the determination of the value of the variable (RTI) by forcing the value of the variable to shift during the intervention or shock periods. The statistical significance of the political dummy variables is tested using t -test. Consequently, if the coefficient of the political dummy variable is statistically significant and has the expected negative sign we can conclude that households spend less before elections.

3.5 Empirical Results

We deseasonalized the original series, and then we obtained the first difference of the seasonally adjusted series, which was stationary. The “best” ARIMA model tentatively found appeared to be an ARIMA (2,0,0).

After including one at the time all the cumulative PD in the model and re-estimating the econometric model, now expressed by an ARMA (2,0) plus a cumulative PD_i , it resulted that almost all the cumulative dummy variables prior elections have a negative sign as expected, and are statistically significant, except for the PD1 and PD6. PD1 is still negative in sign but significant only at 12.5 percent level of significance. Whereas, all the other variables (PD2, PD3, PD4 and PD5) have a negative sign and are significant at a significance level of less than 5 percent.

Table 1. *Seasonally adjusted – first order difference Retail Trade Index in parliamentary elections (cumulative PD)*

Model Type	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.
ARIMA(2,0,0)												
Constant	4.923	0.006	6.494	0.000	6.220	0.001	6.861	0.000	6.385	0.002	4.428	0.015
RTI-diff_1 (AR 2)	-0.402	0.020	-0.546	0.001	-0.444	0.009	-0.435	0.013	-0.429	0.013	-0.390	0.027
PD1	-13.965	0.125										
PD2**			-20.371	0.001								
PD3**					-11.997	0.015						
PD4**							-11.704	0.007				
PD5*									-7.753	0.051		
PD6											-5.560	0.557
Diagnostic tests												
Stationary												
R-squared		0.209		0.377		0.290		0.332		0.245		0.158
R-squared		0.209		0.377		0.290		0.332		0.245		0.158
RMSE		12.806		11.365		12.130		11.767		12.514		13.216
MAPE		438.694		511.762		418.349		499.633		424.846		397.633
MaxAPE		3958.031		5770.019		5240.594		5812.474		5354.742		3493.412
MAE		8.956		8.086		8.737		8.801		9.258		9.275
MaxMAE		29.984		30.879		30.084		30.970		30.264		32.662
Normalized BIC		5.405		5.166		5.296		5.235		5.358		5.468
Ljung-Box		18.262		23.864		21.322		20.987		18.047		15.082

* significant at 10 % level of confidence

** significant at 5 % level of confidence

In order to investigate for the intensity of the contracting behavior in household consumption as the elections come closer and closer, we employed the six discrete dummy variables ($PD_{i,d}$), defined in the previous section. We introduced into the ARMA(2,0) model all the six $PD_{i,d}$ simultaneously and re-estimated the model. All the coefficients of these variables had the expected negative sign, and their size was increasing closer to elections. Almost all of coefficients, except of PD3d and PD5d were significant. To obtain more robust result we excluded from the model the two dummy variables that were not significant (3 and 5) and re-estimated the model. Again all coefficients are negative and statistically significant at a ten percent level of significance

or less and the coefficients follow a quasi monotonically increasing order in absolute terms.

Their ordinal relation in absolute terms is: $PD_{6d} > PD_{4d} > PD_{2d} < PD_{1d}$

Table 2. *Seasonally adjusted – first order difference Retail Trade Index in parliamentary elections (discrete PD)*

Model Type	Model 1	
ARIMA(2,0,0)	Coeff.	Sig.
Constant	5.822	0.000
RTI-diff_1 (AR 2)	-0.554	0.001
PD1**	-15.891	0.037
PD2**	-16.368	0.050
PD4*	-14.354	0.099
PD6**	17.143	0.041
Diagnostic tests		
Stationary R-squared	0.482	
R-squared	0.482	
RMSE	10.882	
MAPE	520.085	
MaxAPE	5117.052	
MAE	7.521	
MaxMAE	29.868	
Normalized BIC	5.384	
Ljung-Box	27.377	

* significant at 10 % level of confidence

** significant at 5 % level of confidence

It is obvious that the closer to the Election Day, the lower is the final consumption. The results are robust, as most coefficients are significant at 5% level of confidence.

4. Conclusions

Before elections, the incumbent increases public expenditures, aiming at stimulating temporarily economics growth to impress voters. However, output is not affected by fiscal policies only, but also from other factors, outside the incumbent control, such as the decision of the households to spend. The possible political rotation may be associated with loss of jobs by a substantial number of people in the public administration, which is

a key employer. In turn, potentially affected people may decide to reduce their expenditures, preparing for hard times. Judging on this results and on diagnostic statistics of the models estimations, we have enough empirical evidence to conclude that prior to elections there is a contraction in retail trade and by implication in the final consumption and consequently in the Output (Gross Domestic Product) of the economy. The reduced household expenditures may offset the effect of increased public expenditures before elections, keeping output and inflation relatively constant.

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