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REFLECTIONS ON THE ROMANIAN FISCAL POLICY-DRIVEN ELECTION MANIPULATION PHENOMENON

Abstract: In contemporary society, especially in democratic countries, the existence of elections, the results of which may change the political configuration in their regularity, equally supported by power existing policy, public administration and citizens, are the coordinates of continuity for permanent sustainable development. The objective of this paper is to provide some empirical evidence of the ambiguous relation between elections and fiscal policy in Romania over the period 1999:Q1 – 2013:Q3. The methodological innovation of this paper is that we exploit whether Romanian fiscal policy or monetary policy is more effective in influencing growth, in the electoral context. According to the results fiscal policy indirectly influences the dynamics of voter turnout, through economic growth. The dynamics of economic growth in Romania is significantly clarified by the fiscal policy, with a lag of one period.

Keywords: fiscal policy, voter turnout, economic growth, Granger causality test, discrete choice model.

JEL classification: D78, E62

1 Introduction

The mechanisms regarding political decisions, without hyperbolization in their analysis, lead us to the investigation of the extent to which the decisional process fulfils the necessary requirements for its prescription in the patterns of a rational process, or an exclusive incremental process. Although in the literature of the public policies there are also contoured other explanatory approaches concerning the way in which decisions are made within the public sector, the approach referring to the observance of the rules, the approach of the 'mixed scanning', and the approach of the 'garbage can', we shall consider only the pure theories of the rational election (the rational comprehensive model), and the

political approach (the incremental model) since, in the main, two types of constraints constantly influence the decision making process, the legislative and the budgetary ones.

The implementation of these theories represents a significant challenge for the governance study, nevertheless, this fact helps us better understand the form in which the economic, social and political conditions change and how public policies should progress in order to adapt themselves to these changes.

Therefore, Governments face a number of constraints derived from the need to ensure general economic equilibrium; therefore, it is necessary to investigate the quality of public decision-making processes in the political context. Without any doubt, the general orientation of a public policy can be influenced by public opinion, therefore, the approach of economic policy conditionalities, focusing on identifying it through fiscal policy, and electoral cycles, simplify and regulate decision-making in certain periods of time.

In this respect, for a greater degree of objectivity in the analysis that we put forward, it is required a correlation of public policy, regarding their stability, social desirability and consistency over time, with the cultural contexts in which a given political community occurs, and the values to which it relates. It starts from the idea that, for Romania, there is no dispute regarding the existence of a variety of civil and political identities, individual and group opinions or interests, all being manifested in an effective participatory democracy. Therefore, a series of efforts occur to transparency in the decision making, but also a series of contradictory interests and values could be expressed, or may be in competition in the continuous representation beyond the regular election times.

In a simplified way, public policy requires government planned actions, which, in any way, change or influence society and economy. A public policy can be defined as a coherent set of decisions that have a common goal and, it is also considered the Government decision not to interfere in a situation, in the case in which this option was analyzed and non-intervention was considered optimal.

This study is composed of five sections. Following the introductory part, the related literature was overviewed in the second part, statistical data description and statistical and econometric methods used in the empirical analysis were performed in the third part, an examination of the Romanian political and fiscal policy dynamics and the econometric model were placed in the fourth part and finally, the findings were interpreted, and a general review was made.

2 Theoretical evidence in favour of election-driven fiscal policy manipulations

In political analysis, a special role is highlighted by the dual perspectives of electoral behaviour, both the government and the electorate, who regularly decide, by voting, their preferences or, simply, take refuge in indifference or absenteeism area.

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The analysis of voter behaviour, active or inactive, partisan or indifferent, properly informed or subject to manipulation, is concerned with the influence of external factors, such as: party affiliation, family ties, friendships, age, religion, occupations, nationality or ethnicity, residence, education level, ideological beliefs, income, general economic condition, social status, etc.

Therefore, the quality of political representation depends on a number of technical issues, i.e. electoral system, party system and the formation of government, in order to ensure durability for the democratic construction. In this context, the functioning of a democratic regime depends not only on institutions, through which the division of labour between the executive and legislative is made, but also, on a number of formal and informal procedures by which political actors influence the operation of the system.

During election periods, politicians manipulate macroeconomic policy instruments, monetary, fiscal and/or exchange rate policies, causing a political business cycle, due to the fact that they erroneously believe that voters are myopic, and base their voting decision largely on the government recent economic performance (Fatas and Mihov, 2001a), 2001b) and 2003). Political Business Cycle is a term used to describe a cyclical fluctuation in fiscal policies, induced by the timing of elections, and, for European Union member countries (such as Romania), fiscal policy is the only remaining instrument for influencing voters' perceptions before elections.

The Political Business Cycle literature has identified two types of political motives for discretionary changes in fiscal policy developed in two stages: *election cycles (opportunistic cycles models)* generated by governments manipulating the economy to maximize re-election chances (Nordhaus, 1975; McRae, 1977; Tufte, 1978) and *partisan cycles* generated by the change of governments pursuing different goals, discretionary changes in fiscal policy arising from changes in the preferences of the political party in power (Alesina, 1987; Hibbs, 1977).

More recently, the rational choice theory, regarding the expectations that individuals are assumed to hold, allows us to identify four variants in the political business cycle: *i)* the traditional opportunistic political business cycle; *ii)* the strong partisan theory; *iii)* the rational opportunistic political business cycle, and *iv)* the weak/rational partisan theory.

Political business cycles (Nordhaus, 1975) are politically induced fluctuations in economic indicators, such as spending, unemployment, and/or inflation that correspond to a country's electoral cycle. In this paper we focus on the correlation between instruments of fiscal policy and electoral cycles (Persson, 2001; Milesi-Ferretti, Perotti and Rostagno, 2002), with the right support of an increasing theoretical literature, with a contradictory puzzling of empirical findings:
- there are significant politically-motivated changes in fiscal policy;
- the welfare costs associated to these changes are large; and
- the use of discretionary fiscal policy is affected by institutional constraints.

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Shi and Svensson (2001, 2002, 2003), using a large panel data set to examine the relation between elections and fiscal policy, find evidence of political budget cycles in both developed and developing countries: government spending increases before elections, while revenues fall, leading to a larger deficit in election years, so, a key variable that determines the size of the electoral cycle is the magnitude of the rents from remaining in power. The main conclusion was that 'political budget cycles arise, as the result of a moral hazard problem between the government and the electorate'.

Persson (2001) and Persson and Tabellini (2002) present evidence that the nature of the political regime and electoral rules determine the degree of reaction to macroeconomic shocks, presidential system versus parliamentary system, it has a smaller government and displays smaller electoral cycles.

Irons (2003), using a model of multi-level government provision of goods in order to examine the role of politics and voter characteristics on spending outcome, finds that when the distribution of voters is nationally skewed towards the upper end of the income distribution, the non-local level of provision is higher, in the case in which communities consist of homogeneous voters.

More recent studies regarding the European political-economic environment and the restricted fiscal behaviour show that the discipline requirements of the Stability and Growth Pact are insufficient to curb the temptation of running politically-motivated fiscal policies before elections (Buti and van den Noord, 2003; von Hagen, 2003, 2005; von Hagen et al., 2001; Andrikopoulos et al., 2004; Mink and de Haan, 2006; Owen and Tucker, 2010; and Efthyvoulou, 2010).

Legitimacy, one of the conditionality factors of a responsible political process performance, next to confidence and integration degree, presumes an activity in accordance with a political, legal and ethical regulatory framework. To this effect, public authorities must not show action incongruence in the political actions performed in connection with the governed ones, irrespective of their political beliefs and opinions.

Lobont (2013) finds that most economists have discussed about the relative efficiency of monetary and fiscal policies, both from a theoretical point of view and an empirical one, without having reached a conclusion yet, except for the idea of necessity that those monetary and fiscal policies be interrelated. We can't help wondering whether in Romania, the institutional construction of economic policies focuses on the pragmatic character of monetarism more than on the priority of fiscal policies, necessary to correct every discrepancies and imperfections of the market. In our support comes the study of Topcu et.al, (2010), were we can find an empirical construction which underlines the relative efficiency of monetary and fiscal policy for the Romanian economy. Analyzing the results of the considered empirical analyses, for 2004:IV – 2011: II period, it was noticed that for Romania, on short term, the fiscal policy was more efficient than the monetary one and consequently, an expansionist fiscal policy leads to growth.

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3   Data and Methodology

Generally speaking, the signals sent throughout the monetary policy decisions, indirectly produce their effects upon the economy, disseminating themselves throughout the intermediate link represented by the financial-banking system, while the distinct impact of fiscal stimuli upon the economies is influenced, among others, by the existing asymmetries in the consumption / saving partition of the economic agents, and the degree of openness of the entire economy. Therefore, monetary and fiscal policies differ in the speed with which each takes effect the time lags are variable, while monetary policy is extremely flexible, and changes in taxation take longer to organize and implement. Although the impact of increased government expenditures is felt as soon as the spending takes place, considerable time may pass between the decision to adopt a government spending programme and its implementation.

Our analysis aims to show whether Romanian fiscal policy or monetary policy is more effective in influencing growth, in the electoral context.

The data base on which the present study is based, considers as representative statistic variables for the fiscal policy the following ones: Total general government revenue (represented in this paper by GR) and Total general government expenditures (GEX), monetary aggregate, respectively M2 (M2), which represents the monetary policy. In order to reflect the image of the Romanian participative democracy, two other statistic variables have been taken into consideration: Voter turnout (VT) and a dummy variable connected to the electoral periods (dummy_el), as elections draw the attention on several social ties in configuring the public policies.

Starting from the hypothesis that political reality is built upon legitimate basis through voting, in order to shape a comprehensive picture of the Romanian socio-economic reality, other two variables have been included in our analysis: economic growth (EG) and a dummy variable to capture the settlement of the economic crisis of 2008 Q4 –2009: Q1 (dummy_cr).

The analysed data have been taken from the Eurostat sites for total general government revenue and total general government expenditures and they cover the period of 1999:Q1 – 2013:Q3, comprising 59 observations, respectively from the European Election Database for voter turnout, presidential elections and parliamentary elections and BNR (National Bank of Romania) for monetary mass. The available data regarding the monetary aggregate M2 could be found only since January 2007, as only starting from this time did the BNR make use of it to measure the monetary mass, the same aggregate as the Central European Bank and all the other member states of the European Union. Therefore, in some parts of our analysis, the period of time considered will be limited to only 27 observations.

To compare data in time, the variables Total general government revenue and Total general government expenditures are considerate as share percentage of the GDP. The economic growth is measured by the growth rate of a real GDP,

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expressing the percentage change of the GDP, compared to the previous period. The monetary aggregate M2 has only monthly and annually reports. The trimestrial data needed for the present analysis were obtained by processing the monthly data, as an arithmetic average of the values corresponding to the 3 (three) months of the current trimester. Another way of dealing with the data related to the monetary aggregate M2 in a quarter, consist in attributing to the current trimester the value registered in the last month of that trimester. The deflation of the monetary mass was done with the Consumer Price Index, CPI, for which the trimestrial variable was determined based on monthly data. In our paper, the variable will be symbolised as DM2.

Having in mind the aim of this research, the analysed data were taken from the already mentioned sources, in a seasonally adjusted manner. The variables Total general government revenue and Total general government expenditures are not given by the Eurostat site in the corrected form of the season variations. In order to seasonally adjust the two series of time, we will apply the TRAMO/SEATS method, which is also used by the Bucharest National Institute of Statistics in processing the reported data to Eurostat. The seasonal adjusted variables will be symbolised as GR_SA and GEX_SA.

The TRAMO/SEATS method is part of the category of alternative methods seasonally adjusted series of time, based on the ARIMA model. Basically, the methodology of these methods resides in estimating the components of the time series, based on the ARIMA stochastic process model, which generates the time series. There are three main components of the time series: the trend – cycle component, the seasonal component and the residual component. The aggregation model of the series components must be additive or log-additive. In the European Union, currently, 18 member states use this seasonal adjustment method, while the other member states use the X12 ARIMA method.

This paper is shaped on the correlation *choice-representation* in order to eliminate the magnitude of the constituency and to consider elections as indispensable for the forming, stability and, last but not least, the process of maturing of a society in full process of democracy. The argument of this approach lies in the fact that, after the falling of the communist regime, in December 1989, the democratic experience comprises a small number of electoral moments; there have been 7 general elections: 1990, 1992, 1996, 2000, 2004, 2008, 2012 and 6 elections for the function of President of Romania: 1990, 1992, 1996, 2000, 2004, 2009. In November 2008, Romania has experienced a new electoral model, a model with a gap between General (Parliamentary) elections and Presidential elections. Moreover, Romania is still facing a series of mutations occurred in the structure of its electoral system, including the application of a uninominal type of voting and parliamentary elections, the setting of uninominal colleges, revising the norms of representation, of the electoral formula, of the structure of the ballots, of the magnitude of the constituency, and of the electoral mandate, the capitalization of the voting results and the method of mandates allocation.

Therefore, it is not possible to build a complex electoral behaviour through
an econometric model, using the political time series, however we will try to model
the electoral behaviour based on the motivations of participating / non-participating
in the view of expressing the political options.

In these circumstances, in the following section, by the examination of the
Romanian political and fiscal policy dynamics during the 1999 -2013 period, we
only try to identify some significant correlations concerning the fiscal impact of the
electoral timing (described by the variable VT), because, in Romania, political and
fiscal cycles have been historically closely linked, frequently with fiscal
deteriorations occurring prior to elections. Our research attempts to illustrate, once
more, the administration capacity to establish a medium term strategy for its
priorities true fiscal policy in the elections context.

The statistics and econometric analysis from the present paper is done by the
help of adequate methods, selected according to the nature of the variables
considered. The hypothesis according to which the Romanian public incomes and
expenditures are being manipulated according to the election periods is verified
with the help of the non-parametric Mann-Whitney test. Having in mind the
discrete character of the Voter turnout variable, the correlation analysis of this
variable relative to the continuous variables (Total general government revenue,
Total general government expenditures and Economic growth) is based on the
Spearman non-parametric correlation coefficient.

In order to model the VT variable related to the influence factors, we suggest
applying the discrete choice models. Having few distinct values, the VT variable is
transformed in an ordinal variable, with 4 (four) categories, as follows: a „very
high" voter turnout corresponds to values higher than 70%, a „high" voter turnout
for the 60% - 70%, a „low" voter turnout for 50%-60%, and a „very low" for
values lower than 50%. The behaviour of the ordinal variable thus obtained, will be
described by an ordered Logit model, relative to the variables with significant
influence, indentified by the non-parametric correlation analysis.

The *Y* dependent variable of an ordinal Logit model is defined compared to a
continuous latent variable Y*, which is a linear combination of the independent
variables.

$$y_i^* = \beta_0 + \sum_{j=1}^{k} \beta_j x_{ij} + \varepsilon_i \,, \tag{1}$$

where: X_j represents the exogenous variables ; β_j, $j = \overline{0, k}$, the regression
coefficients; ε_i, $i = \overline{1, n}$, the error term.

For each statistic unit it is defined the probability that the value of the
variable *Y* to belong to a category *s*, $s = 1, 2, 3, …, m$, on the form of (Andrei, 2008; p.
329):

$$P_{is} = P(y_i = s) = F(\delta_s - z_i) - F(\delta_{s-1} - z_i), \qquad (2)$$

where $F(\cdot)$ represents the function of logistic repartition, with $\sum_{i=1}^{m} P_i = 1$.

The parameters estimation β_j, $j = \overline{1, k}$ is done by the maximization of the likelihood function of the logistic distribution. The significance of the regression parameters is verified by the t Student test, the Wald test and the likelihood ratio (LR) test of the likelihood report (H.J. Bierens, 2008). The discrete choice models are based on less restrictive hypothesis, compared to the hypothesis of the classical regression model. 1. *The residual variables* ε_i, $i = \overline{1, n}$, *are independent and identically distributed (iid), of zero average*; 2. *The error heteroscedasticity* – in the models of qualitative choice, the heteroscedasticity of errors affects the consistency of the estimations of maximum likelihood (Greene, 2003; p. 64) and represents a violation of the independency of irrelevant alternatives hypothesis (IIA); 3. *The absence of error autocorrelation* – If the errors from the linear model are autocorrelated, then the solution of maximization the likelihood function is almost impossible to establish. Under these circumstances, we practice the ignoring of autocorrelation of errors; *4. The absence of colinearity of independent variables*. The models of qualitative choice undergo the same consequences of multicollinearity as the models of classic regression (Jula and Jula, 2010; pp. 163-167).

In order to analyse the influence of monetary and fiscal policies upon the economic growth, during election times, the analysed variables are continuous, normally distributed. The identification of the existence and way of influencing between these variables is being done with the Granger causality tests (Granger C.W.J., 1969, pp. 424-438).

The Granger test is applied as follows: i) if the variables are stationary, the test application is done directly; ii) if the variables are non-stationary, integrated by the same order, one verifies their co-integration and only then the Granger test is applied; iii) if the stationary or co-integration conditions are not satisfied, the existence of the causality is done by the Toda – Yamamoto procedure.

Having two variables X_1 and X_2, the Granger causality lies in testing the model of bivariate linear regression model, such as:

$$X_{1t} = \sum_{i=1}^{n} \alpha_i X_{1t-i} + \sum_{j=1}^{n} \beta_j X_{2t-j} + u_{1t}, \qquad (3)$$

$$X_{2t} = \sum_{i=1}^{m} \lambda_i X_{2t-i} + \sum_{j=1}^{n} \delta_j X_{1t-j} + u_{2t}. \qquad (4)$$

In the first equation, the X_1 variable is explained in relation to its own past values and those of the X_2 variable; similarly is considered for the second equation. According to the decision rules, if the coefficients of the lagged variable

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X_2 from the equation of X_1 are significantly different than zero on the whole, we say that the X_2 variable is Granger cause for X_1; idem for reverse causality.

The Granger causality is limited from the exclusive dependent observed variables, stationarity and linearity.

The stationarity of the analysed variables precedes the application of the Granger test and is checked by the Augmented Dickey-Fuller test (Dickey and Fuller, 1981). This test allows the identification of the time series nature: stationary or non-stationary, deterministic or stochastic. The process consists in estimating and testing of 3 (three) autoregressive models: with trend and constant term, only with constant term and no trend or constant term, with the form (Bourbonnais, R., 2004, pp. 142-157; Jula, D. and Jula, N.M., 2012, pp. 55-68):

$$\Delta Y_t = \rho Y_{t-1} - \sum_{j=2}^{p} \Phi_j \Delta Y_{t-j+1} + \varepsilon_t \tag{5}$$

$$\Delta Y_t = \rho Y_{t-1} - \sum_{j=2}^{p} \Phi_j \Delta Y_{t-j+1} + \gamma + \varepsilon_t \tag{6}$$

$$\Delta Y_t = \rho Y_{t-1} - \sum_{j=2}^{p} \Phi_j \Delta Y_{t-j+1} + \gamma + \beta t + \varepsilon_t \tag{7}$$

where $\rho = (\phi_1 - 1)(1 - \Phi_1 - \ldots - \Phi_{\phi-1})$, ϕ_1 the coefficient of the autoregressive term from the models of the simple test Dickey-Fuller (DF).

The test consists in the confirmation of the coefficient's significance ρ, respectively ϕ_1, thus: if the null hypothesis is accepted, H_0: $\rho = 0$, respectively, $\phi_1 = 1$, we consider that the series has unit root and is non-stationary. The critical values corresponding to the t test that checks the significance of the ρ parameter, respectively ϕ_1, have been determined by Dickey and Fuller by Monte-Carlo simulations. The significance of the parameters attached to the trend and constant term may be verified with the t test, based on the Student distribution.

The dynamics of Romania's economic growth will be described by a model of multiple regression, related to the influence factors of the fiscal and monetary policy. The model is validated by testing the significance of the regression parameters and of the statistic hypothesis (Maddala, G.S, 1999; Gujarati, D.N., 1995): normality (the Jarque Bera test), autocorrelation (the Darbin Watson test), homoscedasticity (the Glejer test), multicollinearity (the variance inflation factor -VIF and tolerance -TOL indicators).
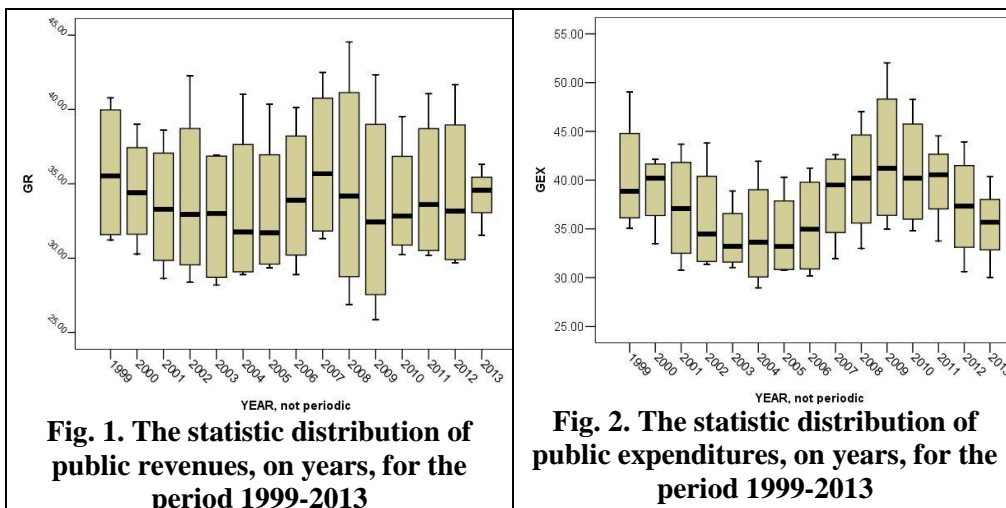
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4   Empirical results

a) In the first part of the empirical analysis we intend to verify if maybe the governors manipulate the fiscal policy elements in election periods (taxes and expenditures).

The data related to the Romanian public incomes and expenditures are not presented on the Eurostat site, seasonally adjusted. The trimestrial seasonally adjusted variations are identified with the autocorrelation function. Their adjustment is being done with the Tramo-Seats method, using the Eviews program.
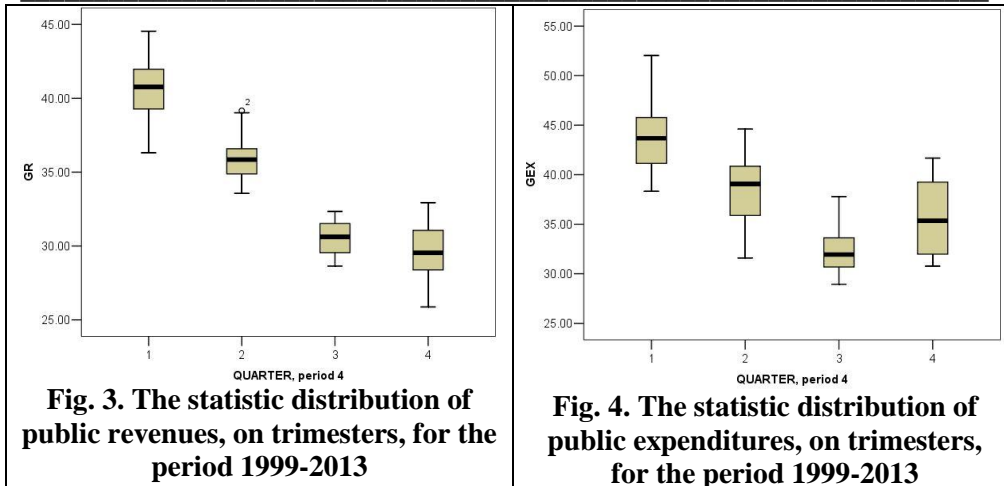
The graphic analysis of the box plot public revenues (figures 1 and 3) and of public spending (figures 2 and 4) highlight a possible connection between the variation of public revenues and spending during election times. The election times correspond to the IVth trimester, from the years 2000, 2004, 2008, 2008, 2009 and 2012. Under the aspect of public revenues, we observe that in each election's year the average level of revenues was inferior to the average revenues of the previous year, which may suggest a relation of fees and taxes. Excepted the year 2012, on election years, the average public expenditures were higher than the previous or following years.

The public revenues are minima in the IVth trimester of each year, but the public expenditures of the IVth trimester present a stronger variation compared to the other trimesters, a variation that could be explained by the connection of that trimester with an election year. Moreover, the average level of expenditures in the IVth trimester is higher than the average level of the previous trimester

According to these considerations, we support the hypothesis according to which in Romania, the instruments of fiscal policy may be considered manipulated in election times. This hypothesis will be verified by numeric procedures, with the non-parametric Mann-Whitney test.

Fig. 1. The statistic distribution of public revenues, on years, for the period 1999-2013

Fig. 2. The statistic distribution of public expenditures, on years, for the period 1999-2013

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Fig. 3. The statistic distribution of public revenues, on trimesters, for the period 1999-2013

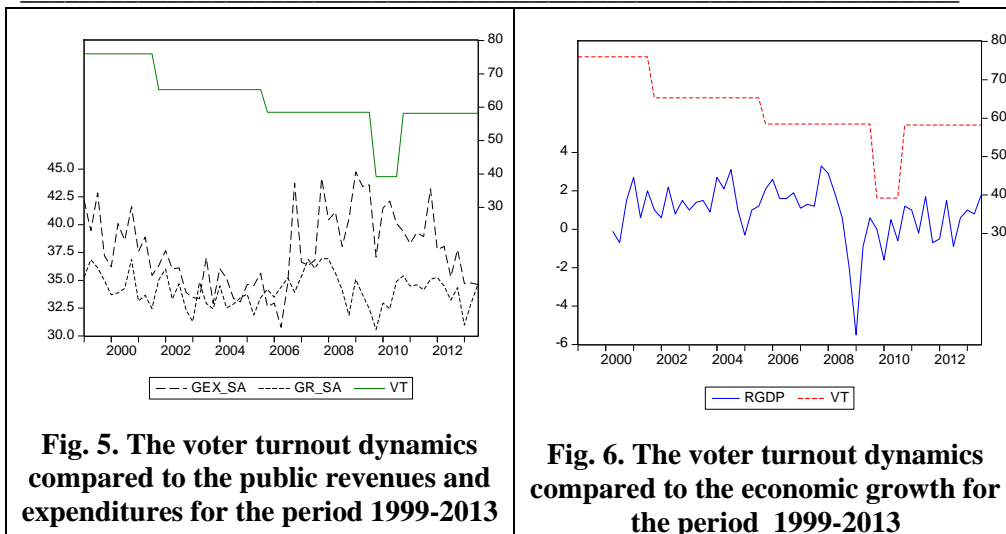**Fig. 4. The statistic distribution of public expenditures, on trimesters, for the period 1999-2013**

We apply the Mann-Whitney test in order to verify if there are significant differences between the average annual level of public revenues and expenditures on election times, compared to the other periods. We justify the application of this non-parametric test by the fact that the volume of the two samples is too low and the requirements of the Student test are not met, to verify the equality of the averages of two independent samples. We define a dummy variable, with the codes 1 for election years and 0 for the rest.

For the annual average level of public expenditures, we obtain the following results: $n_1 = 5$; $n_0 = 9$; $S_1 = 44$; $S_1 = 61$; $U_{min} = 16$. According to the rule of decision, $(U_{min} = 16) > (U_{n_1, n_0}, \alpha = 7)$, we not reject the null hypothesis, therefore there are no significant differences between the annual average expenditures of election years, compared to the other years, at the 5% risk level.

Similar results are obtained for annual average incomes, hence there are no significant differences between average annual incomes in election years, compared to the other years, at the 5% risk level.

In the next part we will study if the voter turnout is influenced by the fiscal policy and, economic growth, respectively. The graphic analysis of the voter turnout dynamics compared to the one of the above mentioned variables (fig.5 and 6), indicates a possible correlation between these variables, staggered by a number of periods. The low voter turnout from the period 2009:Q4 –2010:Q3, may be associated to the low level of public expenditures from the end of the year 2008, but especially with the economic growth phases, marked by the already installed economic crisis of the end of the year 2008 – beginning of 2009.

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Fig. 5. The voter turnout dynamics compared to the public revenues and expenditures for the period 1999-2013

Fig. 6. The voter turnout dynamics compared to the economic growth for the period 1999-2013

Having in mind the discrete character of the voter turnout variable, which does not follow a normal repartition law, the correlation analysis is done with the help of the non-parametric correlation coefficient Spearman. The results obtained are presented in Table 1.

Table 1. The Spearman correlation coefficient between the voter turnout variable and public revenues, public expenditures and economic growth variables

Variables	Spearman coefficient
GR_SA	-0.030
	(0.819)
GEX_SA	-0.142
	(0.285)
RGDP	0.281
	(0.039)

Note: *Under the Spearman coefficient values is presented the probability attached to the Student test, of verifying the significance of the correlation coefficient*

According to the results from the table above, the voter turnout variable is significantly correlated only with economic growth:

$(\mathrm{Pr}ob_{RGDP} = 0.039) < (\alpha = 0.05)$, the null hypothesis (H_0: $\theta = 0$) is rejected, , hence the Spearman correlation coefficient is statistically significant at the 5% risk level.

Modelling the behaviour of the voter turnout variable, compared to the analysed variables, is done by the help of qualitative choice models, called discrete regression models. In this purpose, the VT dependent variable is transformed into

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the ordinal variable VT_ORD, with 4 (four) categories, as presented above in Data
and Methodology.

The preliminary graphic analysis of the ordinal variable newly created
related to the already considerate independent variables, supports the hypothesis
earlier formulated: the voter turnout is correlated with economic growth (fig. 9)
and it is not correlated with public revenues and expenditures (fig. 7 and 8).

Fig. 7. Public revenues distribution relative to voter turnout

Fig. 8. Public expenditures distribution relative to voter turnout

Fig. 9. Economic growth distribution relative to voter turnout
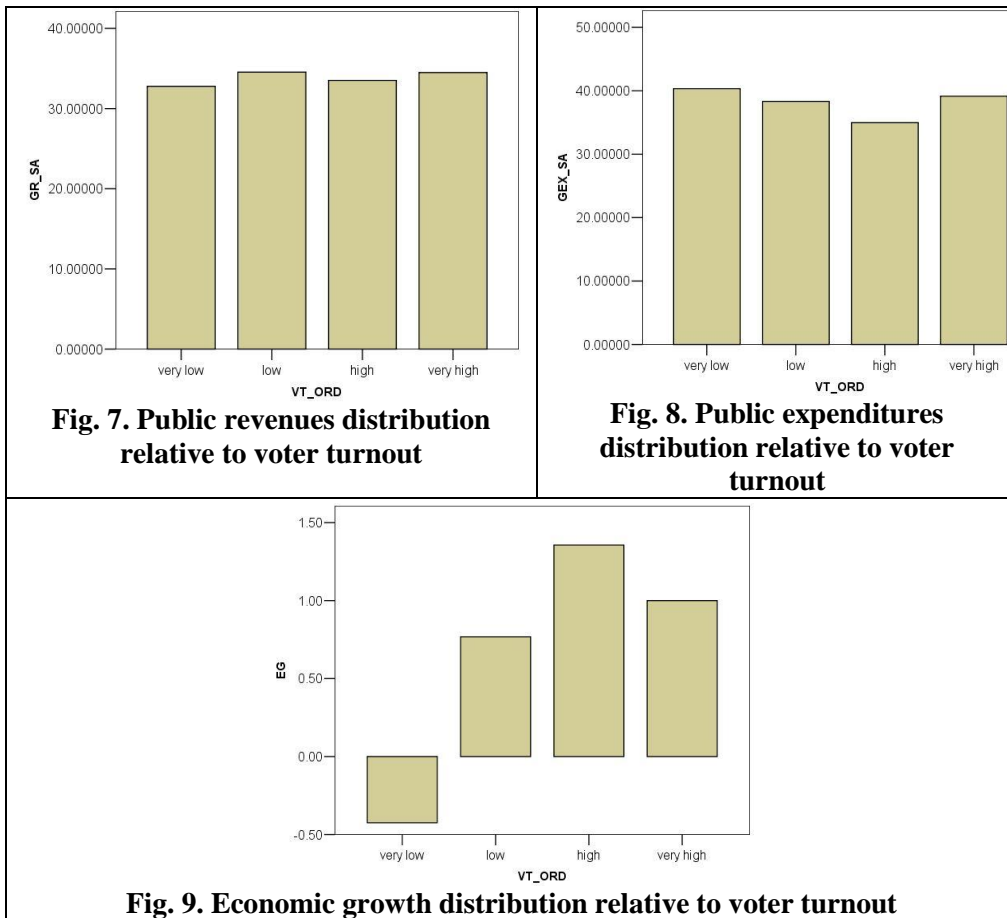
Out of the models of ordinal qualitative choice, we opt for the Logit model,
which, compared to the Probit one, needs simpler calculations and the
interpretation of the estimated parameters is easier. The dependent variable
VT_ORD of the ordinal model is defined relative to a latent continuous variable
VT*, which is a linear combination of the independent variables,

$$VT_i^* = \beta_0 + \beta_1 RGDP_i + \varepsilon_i, \tag{8}$$

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where: β_j, $j = 0, 1$, represents the regression coefficients; ε_i, $i = \overline{1, n}$, the error term. The determinist component of the equation is noted with z_i, $z_i = \beta_0 + \beta_1 RGDP_i$.

The ordinal variable VT_ORD, with 4 (four) categories, is defined:

$$VT\_ORD_i = \begin{cases} 1, \text{ if } VT_i^* \leq \delta_1 \\ 2, \text{ if } \delta_1 < VT_i^* \leq \delta_2 \\ 3, \text{ if } \delta_2 < VT_i^* \leq \delta_3 \\ 4, \text{ if } VT_i^* > \delta_3 \end{cases}$$

Table 2. The Logit ordinal model coefficients

Coefficient and Limit Points	b_1 / δ_s	Std. Error	z-statistic	
			Value	*Prob.*
β_1	0.340	0,188	1.807	0.071
δ_1	2.345	0.531	-4.412	0.000
δ_2	0.729	0.350	2.081	0.037
$\delta 3$	2.472	0.494	5.006	0.000

The β_1 regression coefficient is significantly statistic for a materiality of 10% (table 2). Also, the values δ_s, $s = 1, 2, 3$, which are the basis of defining the categories of dependent variable VT_ORD are significantly statistic, for $\alpha = 5\%$.

The estimated Logit model has the equation: $z_i = \beta_1 RGDP_i = 0.340 \cdot RGDP_i$.

The coefficient sign β_1 shows that the rate of economic growth positively influences the voter turnout. For each statistic unit it is defined the probability that the *VT_ORD* variable value to belong to a category *s*, $s = 1, 2, 3, 4$.

For example, for an economic growth of 2.5%, there is a 36,52% probability that the voter turnout to belong to the category "high":

$$P_{i3} = P(VT\_ORD_i = 3) = F(\delta_3 - z_i) - F(\delta_2 - z_i) =$$
$$= F(2.472 - 0.340 \cdot 2.5) - F(0.729 - 0.340 \cdot 2.5) = F(1.624) - F(-0.120) =$$

$$= \frac{1}{1 + e^{-1.62356}} - \frac{1}{1 + e^{0.120}} = 0.3652 \ sau \ 36.52\%.$$

where $F(\cdot)$ represents the logistic repartition function.

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Similarly, we obtain the probabilities: $P_{i1} = 0.040$ (4%),

$P_{i2} = 0.4304$ (43.04%) and $P_{i4} = 0.1644$ (16.44%), with $\sum\limits_{s=1}^{4} P_{is} = 1$ (100%).

According to the likelihood ratio (LR) test, the model is significantly as a whole only for $\alpha = 0.20$: $(LR = 3.405) > (\chi^2_{0,20;2} = 3.219)$. The low level of the indicator pseudo $- R^2$ (0.177) shows the fact that the VT_ORD variable variation is weakly explained by the variation of the economic growth, through the specified model of qualitative choice.

We note the fact that the rate of economic growth plays an important role in the modelling of the public opinion in respect to the voter turnout.

b) Having in view that the rate of economic growth affects the behaviour of the voter turnout, we intend to study weather fiscal and monetary policies affect the economic growth, thus acting indirectly upon the voter turnout.

We test the stationarity of the variables analysed with the Augmented Dickey-Fuller test (ADF) and the results obtained are presented in Table 3. We notice that for all variables analysed the null hypothesis is rejected, hence the variables are integrated by order zero, meaning they are stationary, for the risk α equal with 5%: $\Pr{ob} < (\alpha = 0.05)$.

Table 3. The results of the ADF test

Variables	M3 – Trend and intercept			M2 – Intercept		M1 - None	Integration order
	ϕ_1	β	γ	ϕ_1	γ	ϕ_1	
GEX_SA	-4.031	0.765	3.934	-3.995	3.947	-	0
	(0.012)*	**(0.447)**	(0.000)	(0.003)	(0.000)		
GR_SA	-4.818	-0.323	4.775	-4.854	4.846	-	0
	(0.001)	**(0.747)**	(0.000)	(0.000)	(0.000)		
M2D	-4.626	0.703	3.050	-4.626	4.633	-	0
	(0.006)	**(0.489)**	(0.006)	(0.001)	(0.000)		
RGDP	-4.598	-1.385	2.303	-4.346	2.389	-	0
	(0.003)	**(0.172)**	(0.025)	(0.001)	(0.020)		

Note. Under the parentheses there are presented the probabilities attached to the calculated value of the t test.

Under these circumstances, we directly apply the Granger causality test. The results are presented in Table 4. We identify a relation of unidirectional causality between the instruments of fiscal policy and the economic growth. The monetary policy is not a Granger cause of the economic growth. No other causality is significant between the analysed variables.

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Table 4. The results of the Granger causality test

Variable X	Tested hypothesis	
	Variable X is not a cause for RGDP	RGDP is not a cause for the variable X
GEX_SA	**3.5711** **(0.013)***	1.407 (0.248)
GR_SA	**4.508** **(0.004)**	0.684 (0.607)
M2D	0.390 (0.812)	0.718 (0.593)

Note. Under the parentheses are presented the probabilities attached to the value calculated of the Wald statistics.

Based on the above mentioned results, we intend to identify a model to explain the dynamics of economic growth relative to fiscal policy. We study the lag optimal length of the explicative variables in a VAR model (table 5). Most of the criteria indicate the optimal length of the lag equal to 1, but we also keep the variant k=4, indicated by the LR criterion.

Table 5. Identification of the optimal lag length between the VAR model variables

Lag	Logl	LR	FPE	AIC	SC	Hq
0	-304.9432	NA	44.88547	12.31773	12.43245	12.36142
1	-278.5226	48.61405	22.38294*	11.62090*	12.07979*	11.79565*
2	-272.7488	9.930834	25.58164	11.74995	12.55300	12.05576
3	-265.3398	11.85436	27.55979	11.81359	12.96081	12.25046
4	-252.1584	19.50853*	23.79214	11.64634	13.13771	12.51426

*indicates lag order selected by the criterion
LR: sequential modified LR test statistic(each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

It is estimated a model of multiple regression of the economic growth rate relative to the above identified Granger cause factors, lagged by a period (a trimester). To these factors we add a dummy variable attached to the economic crisis, strongly manifested during 1998:Q4 and 1999:Q1.

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Table 6. The coefficients of the multiple regression model

Variable	Coefficient	Stdandardized Coeffic.	Std. Error	t-Statistic	Prob.
C	-5.833416	-	3.137472	-1.859273	0.0689
GR_SA(-1)	0.369001	0.378	0.096259	3.833429	0.0004
GEX_SA(-1)	-0.151202	-0.354	0.042033	-3.597234	0.0007
DUMMY_CR	-4.155816	-0.543	0.721345	-5.761206	0.000

The estimated equation of the multiple regression model is:

$$EG_t = \beta_0 + \beta_1 GR\_SA_{t-1} + \beta_2 GEX\_SA_{t-1} + \beta_3 DUMMY\_CR =$$

$$= -5.833 + 0.369 \cdot GR\_SA_{t-1} - 0.151 \cdot GEX\_SA_{t-1} - 4.156 \cdot DUMMY\_CR$$

The coefficients of the regression model are significantly statistic for a significance level of 5%. Except for the constant term, which is significant for the risk of 10%. The sign of the regression coefficients shows that the rate of economic growth is positively influenced by the growth of public revenues and negatively correlated with the public expenditures.

The relationship between standardised regression coefficients, $\left|\beta_1^*\right| > \left|\beta_2^*\right|$,

indicate a slightly more powerful influence of public revenues, compared to the public expenditures.

The determination coefficient, R-squared, is equal to 0,573 and it indicates the fact that a significant percentage of the economic growth variation is explained, mainly, by the fiscal policy, with a one period lag.

The validation of the regression model is done by checking the formulated hypothesis about the regression errors.

According to the Jarque-Bera test, errors are normally distributed, view the risk of 5%: $(JB = 0.823) < (\chi_{0.05;2}^2 = 5.991)$ and $(\text{Prob.} = 0.662) > (\alpha = 0.05)$.

The autocorrelation of errors is verified with the Durbin Watson test. The critical values of the test, for k=4 parameters, the volume of the sample n=54 observations, and $\alpha = 0.05$, are: $d_L = 1{,}421$ and $d_U = 1{,}674$. The calculated value of the test, $dw = 1{,}765$, fits in the region of accepting the null hypothesis, hence errors are not autocorrelated.

The homoscedasticity hypothesis is verified with the correlogram squared residuals (Fig. 10). We notice that the autocorrelation function does not show significant piques. The squared residuals, representing their dispersions, are not autocorrelated, thus accepting the homoscedasticity hypothesis.
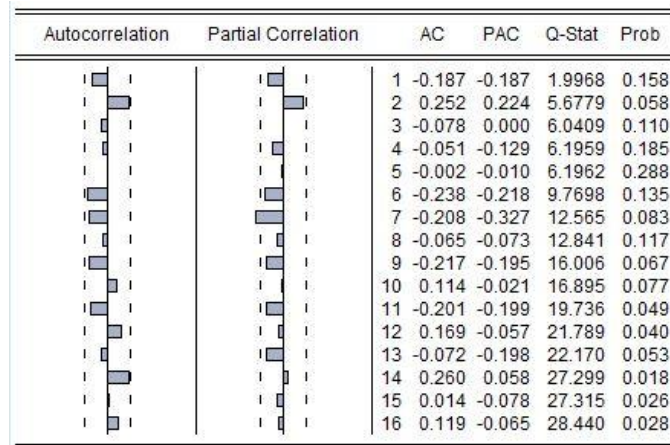
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
		1	-0.187	-0.187	1.9968	0.158
		2	0.252	0.224	5.6779	0.058
		3	-0.078	0.000	6.0409	0.110
		4	-0.051	-0.129	6.1959	0.185
		5	-0.002	-0.010	6.1962	0.288
		6	-0.238	-0.218	9.7698	0.135
		7	-0.208	-0.327	12.565	0.083
		8	-0.065	-0.073	12.841	0.117
		9	-0.217	-0.195	16.006	0.067
		10	0.114	-0.021	16.895	0.077
		11	-0.201	-0.199	19.736	0.049
		12	0.169	-0.057	21.789	0.040
		13	-0.072	-0.198	22.170	0.053
		14	0.260	0.058	27.299	0.018
		15	0.014	-0.078	27.315	0.026
		16	0.119	-0.065	28.440	0.028

Figure 10. Correlogram squared residuals

The multicollinearity of the independent variables is verified by the help of the VIF indicators (Variation Inflation Factor) and TOL (Tolerance). All the values of the VIF indicator which correspond to the 3 (three) independent variables are lower than 10 ($VIF_{GR\_SA}=1.140$; $VIF_{GEX\_SA}=1.132$; $VIF_{DUMMY\_CR}=1.041$), hence the null hypothesis is not rejected and there is not multicollinearity between the independent variables. The same results are being obtained by the interpretation of the TOL indicator values, which are approximately around the value of 0.9.

In conclusion, the model of multiple regression is validated. The dynamics of economic growth in Romania is significantly explained by fiscal policy, with a one period lag, by the specified regression model.

By putting together the results obtained in the two phases of the empirical analysis, we may state that fiscal policy does influence indirectly the voter turnout dynamics, throughout economic growth.

If regarding the data recorded for the voter turnout the absence to polls announcing not only the loss of confidence of the people with voting rights in the intrinsic virtues of the voting action, but also the disinterest in offering support and legitimacy to democratic culture which is implemented in the young Romanian democracy.

Within the international theory and practice, there are two types of manifestation regarding the democratic systems, allowing the conversion of the personal preferences into collective preferences by the voting mechanism: direct (pure) democracy and indirect (representative) democracy. Consequently, in representative democracy states there must be accepted the relations arising between the 'voting citizens' who express preferences through the vote instrument, the 'governing legislators' who make decisions on the strength of their representative power granted through suffrage, and the 'bureaucratic executors' who develop organizing activities concerning the implementation of the public decisions made by governors.

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But, because the 'ethos of the political order influences the arrangements of the economic so deeply that the architecture of the economic cognition conforms itself as well to its precepts' (Dinu 2012, p. 1), we consider that legitimacy appreciation is important from the perspective of the behaviour and efficiency of the political actors who, at least in our country, distinguish by excess of oligarchy, excess of electoral and parliamentary demagogy, and a limited effectiveness.

The picture of the Romanian reality, cannot but to confirm us the fact that regarding the political legitimacy, Romania confronted a series of problems among which the migration issue ('the political routing people'), impression management, electoral brigandage, even attempts of de-legitimation, all these with the aim of fulfilling the interests of power or governing structures, to the detriment of the national interests and ethical implications of their designation. Moreover, Romania suffers a lot concerning the legitimacy chapter and the international political and strategic universe, oscillating from conformation and support up to downfall and erosion, within an institutional integration framework, as a member to different international coalition.

5   Conclusions

Consequently, we believe that in Romania, economic developments during 1999-2013 period can identify some signs of electoral behaviour of government, even if reduced data series cannot support a complex econometric model.

The non-parametric Mann-Whitney test clearly highlights that in Romania, the instruments of fiscal policy may be considerate as manipulated in election times. Having in mind the discrete character of the voter turnout variable, which does not follow a normal repartition law, the correlation analysis undergone with the help of the Spearman non-parametric correlation coefficient showed that the voter turnout is significantly correlated only with economic growth, and not with total government revenues and expenditures.

Choosing out of the ordinal qualitative models the Logit model, which, compared to the Probit one, needs simpler calculations and an easier interpretation of the estimated parameters, we bear in mind the fact that the economic growth rate plays an important role in shaping the public opinion regarding the voter turnout.

Noticing the fact that the rate of economic growth affects the behaviour of voter turnout, in order to highlight that fiscal and monetary policies affect economic growth, thus acting indirectly upon the voter turnout, we have directly applied the Granger causality test, the results of which have identified a uni-directional causality relation between the instruments of fiscal policy and economic growth. Monetary policy is not Granger cause of economic growth and there is no other causality significant among the analysed variables.

On the real lack of interest in the elections' background, the Romanian political spectrum, being aware that voters in Romania have no appetite for reading programs and electoral bids, maintain a downward spiral in the quality of implemented public policies. It is imperious to identify the causes and the potential

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solutions for reducing the risk of complete delegitimation of the decision makers, because politics effectiveness and governance stability effects regarded by the political system, are not purposes per se, but means which are required to be doubled by the democratization of the relations between governors and governed people, by redefining the citizen function, which is more and more absent as a real manifestation in the Romanian political system.

The present approach is not that conclusive since a large part of the period of analysis has been a tighter fiscal policy due to IMF agreements and populist allocations which were made by modifying not the total amount of expenditures, but by moving funds between different budgetary chapters.

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