



KEYNES VERSUS LAFFER OR MISLEADING PERSPECTIVES AGAINST NORMAL EVOLUTION

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Abstract

Having as theoretical support the innovative and opposed aspects of the Keynesian and the supply-side doctrines, this article aims to analyze the effects of fiscal policy, its strength and duration on economic growth. Using a SVEC framework on the example of Romania, we find that a hike in government expenditure was not too efficient in promoting economic development during the 2000-2018 period. The results show that the government spending shocks have a quite small and short-lived effect on GDP, do not boost consumption and lead to important “crowding-out” effects. In addition, our findings indicate that an increased government debt dilutes the efficiency of fiscal policy. We find quite low impact and cumulative government spending multipliers.

Keywords: fiscal policy, economic growth, structural vector error correction model, crisis, Romania

JEL Classification: E12, E62, H50

1. Introduction

By confronting the two great doctrines that after the Great Depression of the '29 - '33 have inspired the economic policies of the world – Keynesian and supply-side economics – we try to highlight the innovative aspects on the path of fiscal policy, with predictive support for the economic policy. Overlapping the theoretical structures of the two doctrines opposed as message and means of support, we argue, on the one hand, the change of predictive capacity toward a positive, normal evolution of economy in the Laffer perspective and, on the other hand, the false and dangerous suggestion force held by Keynesianism in terms of

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configuration and evolution of economy. And, we repeat, the fiscal component will be placed as central piece in our argumentation line.

Fiscal policy and its ability to stimulate economic growth have gained special attention in the recent macroeconomic literature. Yet, neither the theoretical framework nor the empirical evidence provides a common picture related to the sign and magnitude of the effects of fiscal policy on economic activity, especially when emerging countries are addressed. And the case of Romania, for which there is a body of work that assesses fiscal policy efficiency (Dinu and Marinaş, 2014; Combes et al., 2016; Dumitrescu, 2015), makes no exception to this motley picture. However, our analysis seeks to contribute to this particular evidence on the impact of fiscal policy on economic growth by addressing few gaps in the literature. Firstly, given the data features, this paper contributes to the strand of literature by using the structural vector error correction (SVEC) approach. Secondly, based on the evolution of public debt, we explicitly incorporate this variable in the analysis. Thirdly, in order to better capture the relationship between fiscal and macroeconomic variables, we take into consideration the World Uncertainty Index.

Briefly, the purpose of the paper is to analyze the effects of fiscal policy on economic growth by applying a SVEC approach to Romanian data, for the period 2000Q1-2018Q4. What are the expected results? Given the macroeconomic facts and the features of this emerging market, we naturally expect that the expansionary effects of government expenditure on the economy to be small and not persistent; in other words, not very efficient in the long run. In addition, the high level of public debt might have an anti-Keynesian effect through the channel of savings, meaning that it could imply a reduction in the spending multiplier.

Our results generally support the idea that a rise in government spending is not very helpful in boosting economic growth in Romania, but it is even slightly harmful on the long run. In other words, we found evidence on the insidious effects of an economic policy which is inspired from Keynesianism. Per a contrario, it seems there is a chance of a sound prediction if the economic policy follows the Laffer perspective.

Our analysis, beside the well-known SVEC limitations presented below, also exhibits three main caveats: (1) a limited number of variables included in our system in order to preserve the degrees of freedom; (2) focus on the spending side to avoid the well-known controversy of tax shock identification which has great endogeneity problems; (3) not enough data to control for the state of economy.

The remainder of the paper is presented as follows: Section 2 synthesizes the main arguments of Keynes and Laffer perspectives. Section 3 reviews the empirical literature on the effects of fiscal policy. Section 4 explains the data and the methodology. The empirical results are discussed in Section 5, and Section 6 concludes.

2. Keynes versus Laffer Moments – Circumstance versus Durable Successes

Between Keynes (2009) and Laffer (1981) lies Say's Law. The author of the General theory confutes it because it tangles his logic. The change of paradigm materialised by Keynes refer to money and their role and, strongly related to this fact, to the vitiation of the nature of public expenditures and taxation. In this regard, Keynes 'revolution' means a marriage of convenience between science and politics translated into higher public expenditures and higher taxation to ensure the existence of a budding Moloch - the Keynesian state. The

appearance and manifestation of the supply-side economics as a reaction to the Keynesian philosophy and politics is logical.

What legacy do these two types of policies leave? Keynes deserves to be remembered especially for the perverse effects that his policy has produced, and from among them, several worth reflections, such as:

The rupture between present and future. Public debt belongs to us and we can pay it now – a short-termist view. For present's sake, the government can print money. Even if this has a price, we do not get to pay it because "in the long run, we are all dead".

An accounting view about fiscal deficit. A balanced budget is obsolete! Only the deficit is a sign of modernity and means expansion. And, even more, the policy makers are called to 'fine tune' the fiscal policy that would grant the aggregate demand.

The state, per se, is more efficient in spending money than its citizens. Important is the fact that they just should find themselves within the global demand and pay their taxes because 1 dollar to the budget is one which is saved from individual spending failure.

Optimal budget – an establishment of false targets: first, we collect everything we can in order to fill the treasury, then we shape the public expenditures until the whole budget will be consumed. Unproductive expenditures? If it creates jobs, it can be accepted.

Laffer's response to the Keynesian economic policy means:

The long-term has something to say for the health of the economy. He offered us a 'curve'. It tells us that if we lower the marginal tax rates, although the treasury does not fill up immediately, in the long run we live better in an economy released from the oppressive taxation.

Oppressive taxation is oppressive to all the economic actors. Pay attention to the invasive taxation because it is an attempt on both demand and supply; it penalizes both work and entrepreneurial spirit. In other words, there are no tax gifts. And it makes the tax evasion attractive.

The collective rationality for spending money is dubitative. Be careful: the public expenditures are not added to the private ones. They illustrate nothing more than a perverse transfer of resources from productive to grant-aided sectors. And the natural question that arises is who is efficient with other resources? Not even the state!

Here is the logical path that makes the false targets disappear: first, we optimize the expenditures, then we fix the level of collection. The principle is simple: "stretch your feet to the length of your duvet".

3. Survey of Literature and Some Grounds

The global financial crisis along with the subsequent attempts to fiscal consolidation revived the long-standing debate among economists about the role of fiscal policy, thus raising the question whether the fiscal instrument is successful in stimulating economic growth. Considering the existing empirical literature, we might answer "it depends!", since the results are far from reaching a consensus; and it seems that the rationale of these conflicting evidences lies in the broad array of chosen settings and methods (see Hebous, 2011 and Gechert, 2015, for a comprehensive review). However, given the vast literature on the subject, this section focuses only on the empirical evidence concerning the Vector Autoregression framework and types of countries. The four famous approaches to identify exogenous fiscal shocks within this strand of literature are: the recursive formulation,

structural identification scheme, sign restriction framework and the narrative record. To these we add, separately, the vector error-correction approach.

According to the first scheme, the recursive one, variables are ordered from the most exogenous to the least exogenous, the common ordering being: government spending, taxes and GDP. This method was of interest in Pyun and Rhee (2015), who identified a panel VAR for 21 OCDE countries and showed that an increased government spending was more effective in boosting GDP in times of financial crisis than in normal times, responsible for this difference being the interaction between the monetary and the fiscal policies. More precisely, the authors plead for expansionary fiscal and monetary policies to minimize business cycle fluctuations. As expected, the state-dependent fiscal multipliers are back on the table. In this regard, the Smooth-Transition VAR methodology of Auerbach and Gorodnichenko (2012) that discriminates the responses to fiscal shocks in recession and expansion, where spending shocks are identified via Cholesky ordering, has gained special attention in the present literature. Using this methodology, Caggiano et al. (2015) found no difference in the fiscal multiplier conditional on a standard recession versus expansion classification in the U.S. Yet, they found larger fiscal multipliers during severe recessions relative to strong expansionary periods. Meanwhile, Hernández de Cos and Moral-Benito (2016) found larger spending multipliers during recessions and banking stress periods and smaller ones during fiscal stress periods in Spain. Even with the different expansion/recession dichotomy of the two papers, the bottom line is that they pin down quite similar conclusions: larger fiscal multipliers during crisis as compared to tranquil times (see Warmedinger, Checherita-Westphal and Hernández De Cos, 2015, for a critical review on state-specific multipliers). Contrary to these results of Keynesian tint, Petrevski, Bogoev and Tevdovski (2016) found within a recursive VAR framework that fiscal tightening is growth-friendly among emerging SEE countries. Furthermore, the authors highlighted that while in Bulgaria and Republic of North Macedonia fiscal and monetary policy act as substitutes, in Croatia the two policies act as complements. As a parenthesis, we might mention that in all these papers and the ones to follow, the sign of prices and interest rates responses to fiscal shocks and the effects of tax changes are rather puzzling – reason why we did not particularly mention them in this section.

To countervail the arguable theoretical justification for the ordering of variables in a certain manner, Blanchard and Perotti (2002) – henceforth BP02 – introduced the widely known structural VAR for estimating fiscal phenomena. Even though is a refined version of the previous one, it is still built on the recursive ordering, additionally allowing for non-zero restrictions. The BP02 identification scheme was followed by Giordano et al. (2007) and de Castro and Hernández de Cos (2008) for Italian and Spanish data, respectively. Briefly, both papers established that an increase in government expenditure enhances output (bear in mind that the first study focuses on private GDP instead of total GDP), private investment and consumption. However, while both agreed on the short-run effects of government spending on the GDP components, they did not agree on the magnitude of cumulative output multipliers, i.e. quite large values in the first analysis. Dissimilar to these results, it appears that when including the level of public debt in the SVAR framework, the results do not straightforward behave as the traditional Keynesian view. In this regard, Parkyn and Vehbi (2014) showed that the responses of output to fiscal shocks were largely insignificant in the case of New Zealand. At first sight, even if the spending impact multipliers are positive, they are very small and countervailed by the cost of higher interest rates, i.e. a crowding-out effect on a longer horizon. In the same vein, Afonso and Sousa (2012) explicitly considered government debt and concluded that government spending shocks have a fragile effect on

output, do not influence significantly private consumption and crowd-out private investment in the U.S., the U.K., Germany and Italy. The BP02 methodology within the European emerging economies was applied by Dinu and Marinaş (2014) and Grdović Gnip (2015). Using the common set of 5 endogenous variables (government spending, GDP, prices, net taxes, interest rate), Dinu and Marinaş (2014) found mixed results: a government spending shock causes non-Keynesian effects in Romania, limited effects on GDP in Bulgaria, the Czech Republic, Slovenia and Hungary, and strong, positive effects on the GDP in Poland and Slovakia. Using the same set of 5 endogenous variables and the same ordering for Croatian data, Grdović Gnip (2015) main findings are in line with the Keynesian assumptions. Moreover, as acknowledged by the author, the high magnitude of cumulative output multipliers and the permanent, significant effects of fiscal innovations on output highlight the closeness to the results obtained in the advanced countries. Whereas, having in mind the already established effectiveness of fiscal policy in recession, it might be possible to justify this peculiar proximity through the long recessionary period registered by Croatia, which was noted but not considered in the analysis. Along these lines, Dumitrescu (2015) and Muir and Weber (2013) found larger fiscal multipliers in downturns than in boom times for Romania and Bulgaria, respectively. Also, for the Czech, Hungarian, Polish and Slovak cases, Baranowski et al. (2016) concluded that the positive impact of government spending on GDP was stronger during recession, while the negative impact of taxes on GDP was stronger during expansion (fiscal multipliers being considerably higher than in the U.S. and the Eurozone!). In this case, the pretty large values of fiscal multipliers (elasticities!), acknowledged also by the authors, are a bit odd since they are estimated in a state-dependent framework. However, despite some contradictory results concerning developing versus high-income countries, it seems that, in general, government expenditure is more effective in increasing output in the advanced than in the emerging countries. In this respect, Ilzetki, Mendoza and Végh (2013) using a panel SVAR as in BP02 on 44 countries, concluded in a clear, logical and consistent manner that: government spending is more potent in expanding output in advanced than in developing economies, in closed than in open economies, and under fixed than under flexible exchange rate regimes; fiscal stimulus may hurt growth in highly-indebted countries; and the composition of government expenditure is of interest mostly within emerging countries (see Batini, Eyraud and Weber, 2014, for an overview of fiscal multipliers literature for the two groups of countries). Finally, the authors give a forelook and suggest that “seeking the Holy Grail of fiscal stimulus could be counterproductive”, with little relation to growth and potential long-run costs (Ilzetki, Mendoza and Végh, 2013, p. 26). But the first author reverts to his paper, extends his approach only on developing countries, includes the tax system in the model and re-affirms the previous results. His main new finding points out that tax cuts are more helpful to economic growth than government spending increases (Ilzetki, 2011). These results are in line with those of Hory (2016), which in addition emphasize that the traditional determinants of fiscal multipliers are insufficient to improve fiscal policy efficiency in the emerging countries.

In order to overcome the puzzles of SVAR fiscal literature, Mountford and Uhlig (2009) developed the sign-restriction approach which formally comprise criteria based on economic knowledge, that is imposing (unique labelled) sign restrictions directly on the impulse response of fiscal variables. Briefly, the authors found similar results as BP02, namely: tax cuts have much power in stimulating output than public spending increases, and investment falls in response to both fiscal shocks in the U.S. (see also Dungey and Fry, 2009). But, unlike BP02, the authors found that consumption does not behave in line with the textbook Keynesian model, i.e. it does not change in response to a spending shock.

In dealing with the endogeneity of fiscal policy instruments, the so-called narrative approach has been framed, assuming exogenous variation in fiscal policy to be identified via military spending (Ramey, 2011a), legislated tax changes (Romer and Romer, 2010) or other historical information. This approach targets mainly the U.S. since, given data availability, is not too practical in many countries. However, it seems that, in general, these studies disagree with the BP02 “standard wisdom”.

Albeit Blanchard and Perotti (2002, p. 11) conducted a “battery of cointegration tests” and reached the conclusion that including a cointegrating relation makes little difference, recent studies claimed misspecification problems if the variables have common long-run paths and proposed the VEC approach. In this respect, using the fiscal foresight, Puonti (2016) provided contrary results to the ones frequently obtained in BP02 analyses. In other words, the author found that a spending shock jeopardizes output, while a revenue shock triggers a positive response of GDP in the U.S. Using anticipation effects in a VECM framework, Mertens and Ravn (2010) found just the opposite: a (permanent!) increase in government expenditure raises output and consumption in the U.S. For 11 CEE economies, the findings of Combes et al. (2016) are in line with the Keynesian theory in most of the cases, except Romania, Latvia and Slovakia (which reported anti-Keynesian effects). Moreover, the authors found significant multipliers in countries with pegged and flexible regimes, lower level of public debt, lower income and lesser degree of openness.

A brief outline of the empirical studies related to the effectiveness of fiscal policy in Romania reflects the same mixed results. Fiscal multipliers identified by means of linear VAR approaches, corresponding to almost identical periods, are reported in Dinu and Marinaş (2014), Combes et al. (2016) and Dumitrescu (2015). While the first two papers identified non-Keynesian effects (even negative spending multipliers in the second study), the last one found responses of Keynesian flavour (higher cumulative spending multipliers in the period 2008Q3-2014Q1). The results of the last paper should be regarded with caution due to the ill-posed decision of dividing the analysis into two subperiods, resulting, thus, an insufficient number of observations for the recession interval. However, the overall picture reveals fiscal multipliers considerably below unit. Here it is worth mentioning that there are three relevant works for the Romanian case that employed different model classes to assess the nexus between government largesse and economic growth. In this regard, Lupu and Asandului (2017) used an ARDL model and demonstrated that the size of public spending was higher than the optimal level that could favour growth. Using a simulation-based approach, the results of Stanica (2011) support the fiscal relaxation in order to accelerate the GDP growth. The Bayesian approach of Simionescu and Albu (2016) indicated that an increase in VAT rates harms economic growth.

As one may see, the identification strategies within a VAR framework are not univocal either, making, thus, a “rather delicate matter to favour one method to another as all are subject to drawbacks” (Hebous, 2011, p. 687). Briefly, the four major pitfalls of fiscal VAR/SVARs emphasized in the literature are: (1) not accounting for fiscal foresight, (2) the potential simultaneity between output and fiscal variables, (3) the existence of several computing definitions for fiscal policy shocks, and (4) the presence of ‘more or less arbitrary’ theoretical assumptions for ordering the data and imposing restrictions (Mountford and Uhlig, 2009; Ramey, 2011a; Petrevski, Bogoev and Tevdovski, 2016; see the very interesting debate on SVAR versus Defense News EVAR between Perotti, 2011 and Ramey, 2011b). Besides these well-acknowledged issues, there are other vexed concerns related to different VAR settings. For instance, not capturing the feedbacks from government debt, the non-linearities in output response to fiscal stimulus, country spillovers or cointegration relationships may

severely compromise the analysis (Afonso and Sousa, 2012; Warmedinger, Checherita-Westphal and Hernández De Cos, 2015; Puonti, 2016). Apart from these drawbacks, VAR in their numerous avatars are still suitable tools for studying fiscal policy effectiveness. Besides their simplicity, there are several advantages that recommend them, to wit: the presence of exogenous fiscal shocks given that the dynamics of fiscal variables are mostly driven by other reasons than stabilization purposes; the absence of discretionary responses of fiscal policy to current changes owing to the long decisions and implementation lags (Blanchard and Perotti, 2002). To our advantage, SVARs are the most used approaches in the recent empirical evidence on the topic, thus, their usage would allow us a comparison between results. Against this background, we estimate the size and persistence of fiscal policy effects on a set of key macroeconomic aggregates within a cointegrated SVAR process.

Summing up, the recent fiscal VAR evidence does not provide a common picture regarding the size (and sign!) and the way to measure the effects of fiscal policy on output. It seems that within this strand of literature the only relatively consistent patterns are: (1) larger spending multipliers in downturns than in expansions, and (2) smaller spending multipliers in the emerging than in the advanced countries. Given the conflicting, even opposed results for the emerging nations, our work seeks to contribute to the fact-finding within this group..

4. Data and Methodology

The benchmark specification of our empirical analysis includes data on government spending (g_t), net taxes (t_t), GDP (y_t), GDP deflator (p_t) and 3-month interbank interest rate (r_t). Following Combes et al. (2016), on the expenditure side, we define g_t as the sum of final consumption expenditure of general government and public investment. Thus, public consumption includes goods and services purchased or produced by the general government. Worth mentioning is the fact that the value of compensations of government employees counts for a major proportion of the total government expenditure, and that starting with 2016 it increased sharply, reaching levels of over 30% of the total public expenditure. This situation is of interest in our analysis because it is assumed to have impact on the economy via their effects on employment and wages and, moreover, public wages are assumed to be less affected by the business cycles than the ones in the private sector (Nickel and Tudyka, 2014). As a reverse side, the level of public investment accounts for 7-15% of the total public expenditure over the analyzed period and starting with 2016 it began to decline. However, we must pay attention to this diminution since we analyse a European emerging country that is supposed to develop. On the revenues side, t_t includes total taxes net of transfers (current and capital); and by total taxes we refer to taxes on production and imports, current taxes on income and wealth and social contributions. The sum of indirect taxes and social contributions accounts for nearly 80% of the total taxes and is characterised by a steadily increasing trend over the analyzed period, except for the crisis. However, until the beginning of 2018, indirect taxes had the largest contribution in the revenues side, but, owing to legislative changes within the social contributions' domain, this situation has reversed. We excluded interest payments on government debt and transfers from our analysis because the fluctuations of the former are outside the current fiscal policy and rather highlight government past decisions, while the variations of the latter are not subject to the direct control of the fiscal authorities (Petrevski, Bogoev and Tevdovski, 2016).

In addition to the well-known 3-variable BP02 model, we include in our analysis the GDP deflator and the interest rate. We argue that in the absence of the deflator our system might

not capture all the relevant information since our variables are expressed in real terms and, thus, might display larger effects of the fiscal shocks.

We want to point out that, as we focus on the case of a small, open economy, namely Romania's, our model incorporates also the effects of foreign macroeconomic innovations on this economy (Caraiani, 2008). Also, since our analysis incorporates the crisis period, we decided to control this different regime by including the unemployment rate (Hernández de Cos and Moral-Benito, 2016). Furthermore, the reason we take the World Uncertainty Index (WUI) into consideration is the fact that uncertainty can play a key role in the efficiency of fiscal policy through changes in the decisions about saving, consumption and investment. Therefore, the block of exogenous variables consists in the Euro zone GDP in real terms (y_t^f), unemployment rate (u_t) and WUI (w_t). In this paper, we refer to the specifications presented up to this point as the benchmark model.

Moreover, we use in our research several alternative VEC models. Firstly, we decided to explicitly consider government debt (d_t) in our analysis for two reasons: the accelerated upward trend of this variable in Romania that started in 2008Q4 due to an increasingly deteriorated fiscal deficit, and its importance in illustrating the credibility of fiscal consolidation. Therefore, in order to analyze the sensitivity of our results and to quantify the importance of public debt, we add to our baseline SVECM, as an additional sixth endogenous variable, the public debt computed as the ratio of government consolidated gross debt to GDP (Afonso and Sousa 2012; Parkyn and Vehbi, 2014). Secondly, for further investigations on the robustness of our results we employ two additional 5-variable SVEC models where GDP is replaced with private consumption (pc_t) and investment (pi_t), respectively.

Quarterly time series ranging from 2000Q1 to 2018Q4 have been used. All the variables are expressed in national currency units and are obtained from Eurostat Database, except for the unemployment rate and WUI, which are retrieved from the National Institute of Statistics and the Economic Policy Uncertainty, respectively. The variables GDP, deflator and private consumption are obtained in the form of seasonally adjusted figures.

Some necessary transformations are performed on the original data, such as: (1) government expenditures, revenues and debt, private investment and unemployment series are seasonally adjusted using the Tramo-Seats procedure; (2) all the variables, except the deflator, interest rate, gross debt, unemployment and WUI are deflated using the GDP deflators to obtain the corresponding real values; (3) all the variables are log-transformed to stabilize the variance, except the interest rate, gross debt, unemployment and WUI.

Before estimating the models, we have checked the stationarity of the time series using the following unit root tests: Augmented Dickey-Fuller, Phillips-Perron and Kwiatkowski-Phillips-Schmidt-Shin. We considered that the variables are stationary if this was suggested by at least two different unit root tests. The results indicate that the interest rate, GDP deflator and public debt are stationary in levels, i.e. $I(0)$, while the GDP (including GDP components), and government expenditure and revenue are stationary in first differences, i.e. $I(1)$. And because the non-stationary series can be cointegrated, we perform the Johansen and Juselius procedure. Following Lutkepohl and Kratzig (2004) we employ the cointegration test firstly in pairs of two $I(1)$ series, then on groups of three series and finally for the whole unconstrained VARs. For an added robustness, we also used the Engle-Granger two-step procedure. Briefly, both methods confirm three cointegration relationships for each model.

Estimation Method

The standard empirical approach to identify the effects of fiscal policy on the economy is based on the structural Vector Autoregressive (SVAR) model (Blanchard and Perotti, 2002; de Castro and Hernández de Cos, 2008; Iizetzki, Mendoza and Végh, 2013). However, even if the structural vector error correction (SVEC) framework is closely related to the SVAR process, the former has several additional advantages, such as: dealing with unit roots, dealing with cointegration restrictions that allow to distinguish shocks that have either permanent or transitory effects (Dungey and Fry, 2009; Puonti, 2016). We know from the previous section that we have a mixture of stationary and nonstationary variables in the system and three cointegrating vectors, therefore, in this paper, we chose to estimate a VEC-type model based on the following equation:

$$\Delta Y_t = \alpha^* \beta' Y_{t-1} + \Gamma_1^* \Delta Y_{t-1} + \dots + \Gamma_{p-1}^* \Delta Y_{t-p+1} + B_0^* X_t + B_1^* X_{t-1} + \dots + B_s^* X_{t-s} + u_t \quad (1)$$

where: $Y_t = (r_t, p_t, g_t, t_t, y_t)'$ is a K-dimensional vector of endogenous variables, $X_t = (r_f, u, w_t)'$ is a M-dimensional vector of exogenous variables, α^* is a $(K \times r)$ matrix of structural loading coefficients, β is the $(K \times r)$ cointegration matrix, Γ_j^* is a $(K \times K)$ matrix of structural short-run coefficients for $j = 1, \dots, p - 1$, B_j^* is a $(K \times M)$ coefficient matrix, and u_t is a white noise error vector with $u_t \sim (0, \Sigma_u)$.

As shown by Lutkepohl and Kratzig (2004), a locally unique B matrix is given by:

$$B = W(\gamma I_n + (1 - \gamma)\Psi)^{1/2} \quad (2)$$

where: γ is the mixture probability, I_n is the identity matrix, a diagonal matrix $\Psi = \text{diag}(\psi_1, \dots, \psi_K)$, $\psi_i > 0$ $i = (1, \dots, K)$ and a $(K \times K)$ matrix W exist such that $\Sigma_1 = WW'$ and $\Sigma_2 = W\Psi W'$, Σ_1 and Σ_2 are $(K \times K)$ covariance matrices that are assumed to be distinct.

The optimal lag length for the observable time series variables was set to three (p-1) as suggested by the frequency of the data, and the LR and AIC tests. The number of lags for the exogenous variables was set to two. Our models' specification includes a constant and a trend. In order to explore whether the VECM(3,3) is correctly specified and stable we conducted residual and stability diagnosis. Briefly, we found the following: the Portmanteau test rejected the null hypothesis of no autocorrelation, the LM test did not reject the null hypothesis of no serial correlation up to lag=8, the normality test did not reject the null hypothesis of normal distribution, the Residual Heteroskedasticity test did not reject the null hypothesis of no ARCH effects. We want to emphasize here that the Portmanteau test suggests that there is autocorrelation up to lag=8 but adding more lags in the benchmark specification signifies a high cost of over-fitting the model. Thus, it is critical to check the property of the estimators in a robustness analysis.

We established that $r = 3$, thus, the normalized cointegrating relations are written as:

$$\alpha^* \beta' Y_{t-1} = \alpha^* \begin{bmatrix} 1 & 0 & 0 & \beta_{41} & \beta_{51} \\ 0 & 1 & 0 & \beta_{42} & \beta_{52} \\ 0 & 0 & 1 & \beta_{43} & \beta_{53} \end{bmatrix} Y_{t-1} \quad (3)$$

Many studies on the behaviour of fiscal policy effects rely on the Cholesky ordering (Caggiano et al., 2015; Petrevski, Bogoev and Tevdovski, 2016). However, these identification schemes bear a strong assumption: the variables are arranged in the right way, justified by the economic grounds. If the fiscal variables are ordered first or last and if tax decisions are taken after spending is determined or vice-versa are all questionable assumptions (for a discussion on the recursive pattern of fiscal policy see Puonti, 2016).

Given these drawbacks, we use in this paper a non-recursively identified model, i.e. a structural model. In our study, the SVEC model implies: $r = 3$ transitory effects and $K - r = 2$ permanent effects. For local just-identification of the structural innovations we need $\frac{K(K-1)}{2} = 10$ linearly independent restrictions. Therefore, we need $\frac{r(r-1)}{2} = 3$ additional contemporaneous restriction to identify the three transitory shocks and $\frac{(K-r)((K-r)-1)}{2} = 1$ additional restriction to identify the two permanent shocks. Thus, the short run matrix B and the long run matrix ΞB in the benchmark five-variable VEC with the variables $(r_t \ p_t \ g_t \ t_t \ y_t)$ will be identified in the following way:

$$B = \begin{bmatrix} * & * & * & * & * \\ * & * & * & * & * \\ 0 & * & * & 0 & 0 \\ * & * & * & * & 0 \\ * & * & * & * & * \end{bmatrix}, \Xi B = \begin{bmatrix} * & * & 0 & 0 & 0 \\ * & * & 0 & 0 & 0 \\ * & * & 0 & 0 & 0 \\ * & * & 0 & 0 & 0 \\ * & * & 0 & 0 & 0 \end{bmatrix} \quad (4)$$

Within our benchmark model, the coefficients of the loading matrix from the cointegration analysis, along with the already established $I(1)$ variables and cointegration vectors provides intuition about the three shocks with transitory effects. In other words, we assume that GDP, government spending and revenues have no long-run effect on the set of macroeconomic variables. The three columns of zeros represent only $(K-r)r=6$ independent restrictions. In order to identify the remaining 4 restrictions, we use the forecast errors variance decomposition and the economic theory. Therefore, in order to identify the permanent shocks for which we need 1 additional restriction, we assume that interest rate do not affect government expenditures on impact (given that interest payments on government debt are excluded from our benchmark model). This contemporaneous restriction is used to identify the permanent shocks because the theoretical model does not suggest an additional long-run restriction (Lutkepohl and Kratzig, 2004). The 3 additional restrictions that identify the transitory shocks imply that: taxes have no contemporaneous effect on government expenditures; government spending and taxes do not react contemporaneously to output shock. The Maximum Likelihood estimates of coefficients of Equations 1 and 2 for the benchmark and alternative models are reported in Tables A1 – A4, in the Online Appendix

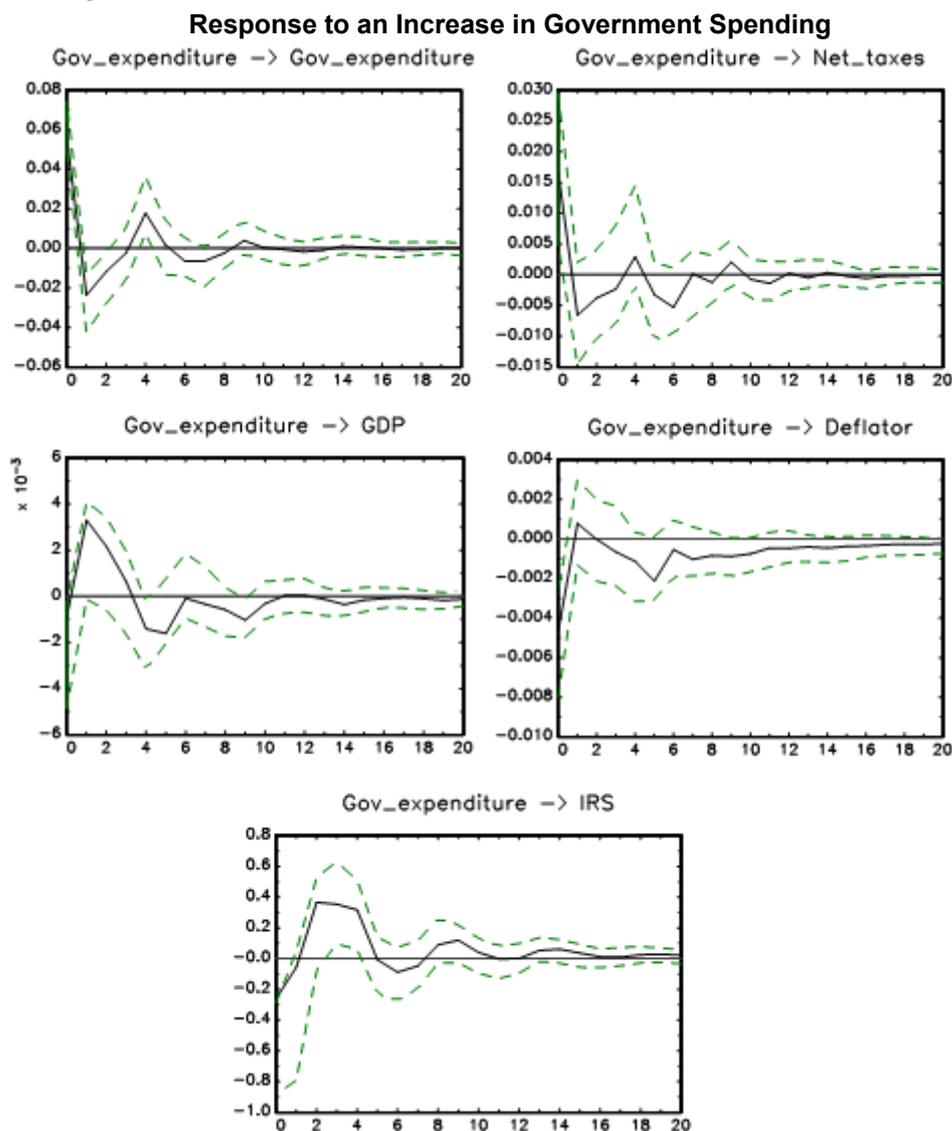
5. The Effects of Government Expenditure Shocks

Within the benchmark model, the coefficients from the contemporaneous impact matrix related to the effects of government spending on output have the expected sign. This means that higher government spending has a negative, statistically significant effect on GDP on impact. On the other hand, the negative immediate reactions of interest rate and deflator to increasing government expenditure are not quite as we expected.

The responses of the endogenous variables of the baseline model to a positive government expenditure shock in Romania are shown in Figure 1. The first two graphs display the responses of fiscal policy variables to a positive government expenditure shock. Firstly, it should be highlighted that both fiscal variables have positive and significant impact responses to a spending increase and that the initial government expenditure increase exceeds the increase in tax revenues. Secondly, the most striking feature of the government spending shock is its lack of persistence. The little persistence of public expenditure shock is a typical finding within the emerging countries (Ilzetzki, Mendoza and Végh, 2013;

Petrevski, Bogoev and Tevdovski, 2016; Hory, 2016). However, these confirm our expectations. The transient responses of fiscal variables and the lower response of net taxes to an increase in public spending find their justification within the Romanian real-life experience: an accelerated deterioration of the primary balance deficit along with a salient increase in government debt, especially starting with the end of 2008.

Figure 1



Note: 95% Hall bootstrap confidence interval based on 500 replications.

The third graph indicates that an increase in government expenditure determines a negative impact response of output. This initial negative reaction of GDP in Romania was also found by Dinu and Marinaş (2014) and Combes et al. (2016). Afterwards, a shock in public spending generates a GDP growth for 3 quarters, reaching the peak in the first quarter by 0.33 basis points. We interpret this short-term positive response as a mild Keynesian effect of fiscal expansion. However, after these three quarters, the GDP response becomes negative. Nevertheless, the magnitude of GDP responses appears to be quite small and, more importantly, the estimated impulse responses are mostly insignificant, with several exceptions. This is somewhat intuitive, since the impact depends on the short-lived fiscal shock. Also, we should bear in mind the picture of the graph below which shows that the fiscal expansion generates higher levels of interest rates after two quarters.

The fourth graph displays a negative response of prices to an increase in public expenditure which is significant only on impact. Likewise, the fifth graph illustrates a negative and statistically significant initial reaction of interest rate in response to a government spending shock that becomes positive, and yet significant, from the second to the fourth quarter. We expected a price increase through the impact on aggregate demand due to a raised level of purchases of goods and services, and public wages. Also, due to additional government borrowing we expected an immediate increase in the interest rate. Anyway, our results confirm the theoretical mechanism, i.e., a lower interest rate as a result of the National Bank of Romania strategy to countervail deflationary tendencies. Although these are counter-intuitive results, it should be noticed that the existing empirical evidence also provide some puzzling results. However, initial negative changes in the deflator and interest rate have been already found in other CEE countries – Poland (Haug, Jędrzejowicz and Sznaiderska, 2013) and Croatia (Grdović Gnip, 2015).

In order to find the measure of the impact on GDP and its components of a unit change in government expenditure, excluding the simultaneous GDP dynamics, we compute the impact and cumulative spending multipliers within the baseline and the alternative specifications. Since the endogenous variables are formulated in logs, the IRFs represent elasticities, thus, we have to correct them in the following way: $\mu^i = \frac{\Delta Y_t}{\Delta G_t} = \frac{M_i}{(G/Y)}$,

with $M_i = \sum_{k=0}^i m_k$, $m_k = \frac{\Delta y_t}{\Delta g_{t-k}}$. We estimate fiscal multipliers for up to $t = 12$ periods, as presented in Table 1.

Table 1

Impact and Cumulative Fiscal Multipliers - Shock in Government Spending

	Impact	Q1	Q4	Q8	Q12	Peak (Quarter)
Output multiplier (benchmark model)	-0.0046*	0.0123	0.0194	0.0061	-0.0005	0.0266 (Q3)
Private consumption multiplier (VEC-5)	-0.0047	0.0006	-0.0027	-0.0041	-0.0064	0.0006 (Q1)
Private investment multiplier (VEC-5)	-0.1438*	-0.1414*	-0.1799*	-0.2597*	-0.2612*	-0.1366 (Q2)
Output multiplier (VEC-6)	-0.0072	0.0015	0.0123	-0.0021	-0.0107	0.0169 (Q3)

Note: ** indicates significance at the 0.05 levels.

In the baseline model, both the impact and the cumulative output multipliers are far below one unit and statistically significant only on impact. Similar sign, magnitude and non-significance of fiscal multipliers was found in the case of Romania by Combes et al. (2016) who explain that not accounting for a common long-term path would underestimate their size and significance. Also, these values are somehow similar to those obtained by Dumitrescu (2015) in the pre-crisis period, and much lower than the ones in the post-crisis period. The difference might be due to data splitting, but as we already stated, the crisis period generates a too small sample to be considered as statistically relevant. However, these relatively small fiscal multipliers found in the case of Romania fit the empirical evidence within the emerging Europe (Muir and Weber, 2013; Haug, Jędrzejowicz and Sznajderska, 2013) and the global emerging countries (Ilzetzi, Mendoza and Végh, 2013; Hory, 2016).

The effect of government spending on private consumption involves roughly similar features as in the case of GDP. Briefly, the private consumption multiplier displays mostly the same weak, non-significant and short-lived features as the output multiplier. However, what is striking is the degree of crowding-out of private investment through increased government spending. For the whole analyzed period, the effects of fiscal stimuli on private investment are negative, statistically significant and larger in magnitude (absolute value) than the previous mentioned; and, interestingly, this crowding-out effect is not driven by a higher interest rate in the short run.

Moreover, it seems that the inclusion of the public debt in the picture plays a key role on the magnitudes of output multipliers, and the results are in accordance with our expectations: multipliers are even smaller on the background of an increased level of government debt. This result highlights the importance of including the degree of indebtedness in analysing the impact of fiscal policy. This result is in line with recent VAR studies which have shown that fiscal multipliers tend to be lower in countries with high levels of debt, assuming that fiscal adjustment is prone to have positive credibility (Ilzetzi, Mendoza and Végh, 2013; Parkyn and Vehbi, 2014; Hernández de Cos and Moral-Benito, 2016).

6. Concluding Remarks

The Keynesianism was and still is in a hostile position towards its relationship with the economic science, but not with politics, while the supply-side doctrine is compatible with the economic science but, from the perspective of economic policy, it has the chance of being labelled as idealistic. Even though the effects of the standard Keynesian approach are counterproductive and risky on long-term, as we showed above, the measures that it proposes are compatible with the political discourse. The inventory of perverse practices generated by such a doctrine highlights an additional part to what was already said: public spending temptation is dangerous and is maintaining the "Santa Claus" role of the state. But at what cost?

In a more parsimonious manner, the empirical analysis highlights these facts. This paper analyzed the effects of the spending side of fiscal policy on GDP and its components, inflation, and interest rates in Romania by means of a structural Vector Error Correction model for the period that ranges from the beginning of 2000 to the end of 2018. The estimated models indicate that an expansionary fiscal policy that involves increasing government spending is not efficient for promoting economic growth, especially in the long run. In other words, the empirical evidence suggests that an increase in public spending determines: (1) an initial negative response of GDP, whereupon it generates a mild, short-lived growth effect; (2) a relatively tepid and short-lived effect on private consumption; (3) a

prominent negative effect on private investment. Also, our empirical results confirm our expectations related to the relative size of the spending multipliers: they are quite small and mostly insignificant. However, we especially delineate a model where public debt is incorporated. In this regard, our findings suggest that it is important to take into consideration the level of government indebtedness in order to avoid misleading fiscal multiplier effects. More precisely, we highlighted that a weak fiscal position inhibits even more the efficiency of fiscal policy in Romania. Overall, this means that an increase in government spending does not justify the cost of a high public debt, and a fortiori an increased tax burden.

Our results suggest that Keynesian “recipe” is not promoting a sustainable and healthy economic growth in the long run in Romania. Therefore, from a sequential perspective, the State must establish the list of public expenditures strictly necessary to the optimum level, and, mostly, these should target investment, and to a lesser extent consumption. In terms of a “minimal state” its trend should be downward. These results generally support the Laffer’s perspective, which, for the political exercise means a clear, open and mimetic lesson.

Acknowledgements

This work was financially supported through the Internal Grant of Alexandru Ioan Cuza University of Iași, Romania (Grant UAIC - 2014), CIM registration number GI-2014-16.

We would like to thank the peer reviewers for their relevant suggestions and observations. We would also want to thank the Editorial Office team for their proofreading support.

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