

FISCAL POLICY AND ECONOMIC GROWTH: THE CASE OF THE FEDERATION OF BOSNIA AND HERZEGOVINA

FISKALNA POLITIKA I EKONOMSKI RAST: PRIMJER FEDERACIJE BOSNE I HERCEGOVINE

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Sažetak

U ovom radu se istražuje da li fiskalna politika stimulira ekonomsku aktivnost u Federaciji Bosne i Hercegovine. U tu svrhu su prikupljeni podaci vremenskih serija u periodu 2008.-2014. godina. Rezultati ukazuju da jedinično povećanje prihoda dugoročno dovodi do smanjenja bruto domaćeg proizvoda. Utvrđeno je da budžetski rashodi samo u početnom periodu stimuliraju bruto domaći proizvod. Međutim, rezultati u dugom roku su zanemarivi. Funkcija impulsnog odgovora ukazuje da je, pored budžetskih rashoda, neophodno sagledati i druge determinante bruto domaćeg proizvoda u Federaciji Bosne i Hercegovine. Dakle, uticaj fiskalne politike na ekonomski rast je samo djelimičan. Stoga će razvojna politika zasnovana na budžetskim rashodima dovesti do minornog povećanja ekonomske aktivnosti.

Ključne riječi: fiskalna politika, ekonomska aktivnost, VAR, VECM

Abstract

The purpose of this paper is to explore whether or not fiscal policy can stimulate the economic activity in the Federation of Bosnia and Herzegovina. For this purpose, the time-series data are collected in the period 2008-2014. The results suggest that a unit increase in revenue leads to a reduction in the gross domestic product in the long-run. Budgetary expenditures are found to stimulate gross domestic product only in initial period. However, results in the long-run are found to be negligible. Moreover, impulse-response function indicates there are many other determinants of gross domestic product in the Federation of Bosnia and Herzegovina besides budgetary expenditures. Therefore, the impact of fiscal policy on economic growth is just partial. Hence, development policy based on budgetary expenditures will lead to only small increase in economic output.

Keywords: fiscal policy, economic activity, VAR, VECM

1. INTRODUCTION

Ability of a state to induce economic growth through fiscal, monetary or income policy, as well as other economic measures is the topic of many economic theories. Economic policy measures are particularly reflected in cases of cyclic economic movements in a country, be it expansive or recession cycles. In the eras of crisis and recession, states apply either restrictive or expansive fiscal policy. According to the public choice theory, the state has important and irreplaceable role in economic activities. If fiscal consolidation measures are implemented, it is also necessary to consider some standard regulations or programs that can achieve impacts on economy. Such regulative policy is mainly reduced to relieve the burden on economy by decreasing the tax rate, increasing the public spending or public debt. The fiscal policy, with public revenues and expenditures of state budget, achieves certain economic, social and political goals. The main task of the fiscal policy is public revenues, expenditures and indebt management. Functionality of the fiscal policy is reflected in gross domestic product (GDP) growth, price stability and a fairer revenue distribution. This analysis is aimed to testing the impact of fiscal policy of GDP growth in the Federation of Bosnia and Herzegovina (FB&H). The influence of fiscal policy on economy is visible through impact on public spending, or on budgetary expenditures. In the situations of evident budgetary expenditures growth, we refer to expansive fiscal policy that is reflected in increased budgetary spending. In the reverse situation increase of budgetary revenues with unchanged public spending results in a restrictive fiscal policy. For the government, or creators of economic policies and state budget management decision-makers, it is very important to understand the impacts of fiscal policy to the state economy.

According to Zagler and Durnecker (2003), the constant increase of fiscal deficit and a high public debt, even in the absence of Ricardian equivalence, may have negative consequences to the growth, considering that the deficit financing decrease resources available for accumulation of capital in the private sector. If the Ricardian equivalence is valid, the impact of fiscal expansion on the growth can be neutral because of proportional reduction of public spending (Barro, 1974). Harmful impacts of fiscal deficit and debt can be additionally increased if the indebt is used to finance less productive expenditure categories (Dalic, 2013). The high level of public debt with permanent increase of state expenditures can have negative impacts on the growth (Blanchard, 1990; Alesina and Ardagna, 2009). Although the government perceives the budget as technical operation for achieving proclaimed economic state goals, the budget process is primarily a political process.

Very often, the short-term interest of certain sides in the budgetary process are subject to desirable and declared long-term goals and policies that needs to be achieved through the budget itself. This disturbs democratic processes, both pub-

lic and general interest of all citizens. This is yet another reason that highlights the importance of understanding the budgeting process, in order to influence, as much as possible, the implementation of long-term goals of a certain state. It can be said that the budgeting process is slightly a technical process, in other words it is primarily a political process in which distribution of power among key political factors of a state is reflected. In this manner certain rules and criteria are defined and a balance is established between executive and representative powers and other factors in the overall process (Bratic, 2010).

Due to unfinished institutional reforms and indefinite deficit financing, in the time of crisis appears reduction of positive impacts' achievements of the state spending to the growth and unemployment (Canh, 2018). Likewise, long standing fiscal deficit questions the fiscal sustainability. The aim of this research is to forecast and identify relations of fiscal policy and economic growth in the FB&H with an empiric analysis and by applying cointegration analysis and vector models (VAR and VECM models), conducted for the period 2008 – 2014. The research question 1 is: Are the results of the fiscal policy action in the FB&H in harmony with economic theory and the practice of fiscal policy impacts on economic growth measured with GDP.

The Federation of B&H is burdened with numerous economic issues, which are related to implementation of a qualitative fiscal policy. Certain movements of public spending in the FB&H can lead to conclusion that fiscal policy does not apply the basic functions of public finances. Until now it has been mainly directed to exhausting fiscal capacity of the economy, supporting the growth rather based on domestic demand, and not on export. The fiscal policy has partially achieved aim of income reallocation, however did not achieve stabilization and development goal.

In the long-term perception, the FB&H's fiscal policy should assist inducement of economic growth and development and intervene in revenue reallocation. Article 8 of Dayton Peace Agreement gave right to entities' governments to regulate fiscal system primarily according to the entities' interest. Thereby to the governments of the entities is given right and responsibility to finance the B&H budget from their own incomes, with the FB&H participating with two thirds and RS with one third.

For the purpose of establishing a unique system of collecting indirect taxes and the system of revenue distribution, the Parliamentary Assembly of Bosnia and Herzegovina adopted the Law on indirect taxation system in Bosnia and Herzegovina in 2003. This created preconditions for establishment of the Indirect Taxation Authority. By adopting the Law on indirect taxation system and the Law on value added taxes, fiscal sovereignty of the entities is limited and a significant part was transferred to the state level. Bosnia and Herzegovina in this manner becomes sovereignty carrier in the field of indirect taxation.

The goal of adopting several laws in the field of indirect taxation is to fortify the basic of macro-economic stability, fiscal sustainability and creating unique economic space in the state. With the Law on payment to single account and revenue distribution it is prescribed incomes to be allocated daily according to the coefficients that are defined by the Management Board of the Indirect Taxation Authority. Bosnia and Herzegovina as of 1 January 2006 replaced the system of sales tax with the added value tax, which appeared to be one of the greatest reforms after the war, considering that until then the entities could trade, which opened space for tax frauds and enormous tax evasions.

In order to secure macroeconomic stability and fiscal sustainability, following recommendation of IMF, the three ministries of finances, prime minister of the entities and Council of ministers made an agreement in 2005 to establish a fiscal policy coordination body within the state, which was followed by the law adoption in 2008. This is why the starting year in this research is 2008. This body consists of the Chairman of the Council of Ministers, minister of finances and treasury of B&H, prime ministers of the entities and ministries of finances, along with the observers Governor of the Central Bank of B&H and the mayor of Brčko District. The decisions are made with qualified majority e.g. with votes of five members of the Fiscal Council. Global framework for the fiscal balance and policies is a document in form of an agreement that is adopted by the Council of Ministers and entities' governments. Fiscal council has advisory, consultative and coordination role and all decisions have to pass the confirmation by the relevant authorities.

The research proceeds as follows. After the Introduction an analysis of the the review of relevant literature (theoretical and empiric) about the influence of fiscal policy on growth is given. Moreover, methodology is explained together with the variables used. The results section summarizes the findings on the matter and we conclude in the last chapter.

2. LITERATURE REVIEW

The literature provides two different views on the role of fiscal policy in the growth of the economy. The first view supported by (Easterly and Rebelo, 1993; Mauro, 1995; Folster and Henrekson, 2001) suggests that the society based on knowledge; the society intensively included in the research and development process, the higher level of productivity and the rule of law tend to have a stimulative effect on the growth process in short- as well as in the long-run. The second view is as opposed to the first one emphasizing that governments tend not to be highly effective and are rather bureaucratic. Thus, such governments may have discouraging rather than encouraging impact on the growth process. In the line with these two

views it is important to emphasize that finance policy acts a positive role in the economic growth by reducing the government expenses that are found to be inefficient. Apart from this, there is still very important question on the real role of fiscal policy in economic growth in the period of interest. This question has motivated the research conducted in this research article. Thus far the debate on the efficacy of fiscal policy in stimulating growth seems to have received scant attention in the case of Federation of Bosnia and Herzegovina. Thus, due to the structural reforms taking place from 2008, we have considered the period between 2008 and 2014.

From the best of our knowledge, this is the first paper to treat the link of interest in the case of Federation of Bosnia and Herzegovina. Thus, we present some recent articles treating the rest of the world's example. For instance, Ko (2018) has employed the Kaleckian model to investigate the impact of the budget deficits and progressive income taxes on the growth of economy in the short- as well as the long-term. The findings suggest a positive impact of the increase in budget deficit on economic growth in the short-run. However, progressive tax is not found to have a significant impact. Thus, the main findings of this paper suggest a great role of the tax rate for capital income in the growth process. With regards to the results in the long-term, the impact of the increase in budget deficit has not found to be clear. However, to make it clear there is a need for acknowledged conditions to be met. Moreover, progressive taxes tend to have an encouraging role in the growth process.

Data series from 1986 to 2010 were collected by Osuala and Jones (2014) to investigate how is fiscal policy correlated with economic growth in Nigeria. In this empirical analysis, unit root test has first been employed in order to check for the variables stationarity. To investigate the existence of the link of interest in the short- and long-term, they have used the ARDL model. The findings of this research article display the link between fiscal policy and economic growth to exist in the long period of time within the period of analysis. The coefficient of determination explains the explanatory power of the independent variables. These are found to explain more than 68% of the variability of economic growth. In terms of the Nigerian case, the expenditure on capital is found to be an important proxy of fiscal policy and is found to contribute positively to the growth process of this African country. On the other hand the two variables that are not found to have a significant impact on real GDP are debts of the government (total) and taxes that are not connected to the oil. Capital expenditure is found to impact the economic performance in the short-term. Thus the authors suggest the necessity to support the transparency system as well as to support the development of fiscal institutions and their responsibility. As a result, tax reforms should lead to the increase in the investment and the reduction of corruption. To take a place, fiscal policy should be supported strongly by the monetary policy that will operate in the effective way.

Spilimbergo (2005) measured the outputs of fiscal policy starting from 1998 (crisis year), including few different magnitudes and indicators. Economic activities have increased rapidly in Russia in the recent years. Russian growth has been high and public debt was considered acceptable and desirable at the first glance. The oil market was in equilibrium, however it tended to have an indirect impact in 2001 and modest indirect impact in 2004. Thus, there was a necessity to include the oil while analyzing the fiscal balance in Russia in order to have more informative results. In terms of Russia, it is important to emphasize that it tended to introduce the fund that aimed to act as oil stabilizer. Moreover, Russia was very efficient in saving the oil based revenues in the period of interest. However, the fiscal policy did not have a supportive role to the demand in the years starting from 2003. This is since there was not enough capacity to deal with the serious impact of the inflation.

Tristin Beckman (2018) has analyzed the case of OECD countries in the period 1998-2015. In terms of methodology, he has employed spatial econometrics to analyze the link between fiscal policies of trade partners and domestic economies. Countries that are considered developed have largely accepted the fiscal incentives policies in the financial crisis in 2008. Most of these countries have changed the course and adopted savings measures in critical years, while their economies were still weak, despite the ability to maintain fiscal expansion. These policy changes tended to be explained by main institutions in domestic economies and also by the political ideologies.

The Theory of economic cycles distinguishes two most significant approaches, namely “neoclassical” and „Keynesian“ (Benzic, 2006). Both of these approaches agree that the positive shock of fiscal spending lead to the increase of gross domestic product, and the positive shock of fiscal revenues lead to the decrease of gross domestic product. According to neoclassical models the reduction of private spending is caused by the decrease of prosperity of individuals due to the state spending increase (Satrovic, 2019; Galic et al., 2020; Jena et al., 2022; Satrovic and Adedoyin, 2022), and Keynesian models anticipate the increase of private spending. According to Benazic (2006) it is possible to find extreme cases in Rikard’s approach who does not anticipate any effects of fiscal policy.

Ocran (2011) has employed the case of South African countries to explore the potential innovations. For the purpose of the empirical analysis, they have collected the data on the investments made by government, the expenditures on consumption, different proxies of fiscal policy, budgeted deficit as well as revenues based on tax. They have employed the VAR model considering two fiscal and one monetary variable in every model. The results that are not clear have been found and also these are not found to be permanent.

Fiscal policy is supposed to have a stabilizing impact on economic activity and employment, according to the economic theory. This impact is best understood through utterly simplified interpretation of Keynesian economic policy, according to which the expansion of public spending increases production. This refers to multiplicative impact of state spending, i.e. impact of discretionary fiscal policy. Researches showed that in also developed countries the contribution of discretionary fiscal policy on recession ending is minimal (Romer and Romer, 1994), which is not hard to explain. The intentions of fiscal measures proposers very often do not get conducted in a political process, and the time needed between recognizing the problem and reacting to it increase the danger of introducing the measures in completely wrong moment. Here can be noticed that Van den Noord (2000) also warned that discretionary fiscal policy can increase hesitations of economic activities, and that they can diminish potential long-term growth.

Ogeh et al. (2008) have been collecting the time-series data for the case of Ghana to investigate the potential link between proxies of fiscal policy, the economic performance, investments as well as private capital. With regards to methodology, they have employed the Engel-Granger two step procedure. The most important evidence of this research article suggests that government spending especially the capital spending and the tax connected with the international taxes tend to have a significant positive role on the economic performance of Ghana. However, tax on the goods and services produced in Ghana as well as income taxes tend to be very important determinants of the investments in the capital. Thus, the impact of fiscal policy on public investments differs from the impact on economic performance. Moreover, the correlation coefficient between the proxy of economic performance and public investment is found to be very low.

Alesina and Ardagna (2009) warned about negative impacts of fiscal expansion on capital allocation. Šonje (2007) provides evidence on the negative impacts of non-transparency in public spending that also have negative structural impact, completely independent from the role of fiscal policy in business cycles stabilization. There is a considerable amount of research pointing to negative connectivity between the relative size of state spending and economic growth (Barro, 1991; Pevcin, 2004; Šonje, 2007). In light of the above, positive impacts of fiscal policy in economy literature are accredited to automatic stabilizer (Cohen and Follette, 2000; Van den Noord, 2000; Di Bella, 2002), although stabilizer factors do not exhaust all possible positive impacts of fiscal policy.

In general, public expenditures, be them productive or non-productive, diminish resources available for potentially more productive private usage, which is why public expenditures productivity depends also on level of complementarity/substitution with private expenses (Irmen and Kuehnel, 2009).

Recent empirical research of fiscal policy, which includes usage of econometric methods and models, proved the mentioned influences of fiscal policy on economy. In that vein, we can mention the following authors: Krušec (2004), Benazić (2006), Bose et al. (2007), Wu et al. (2010), Gemmell et al. (2011), Dalić (2013), Gemmel and Au (2013).

Gogas and Pragidis (2015) were interested in the case of USA. Thus, they have collected the time-series data to explore the potential impact of the shocks in fiscal policy. For the purpose of empirical section, they have suggested the VAR model to be suitable. To provide more explanatory description, the authors were interest in the potential impact of the positive role of the shocks in government spending as well as in the negative role. Besides these, the authors have also employed the positive and negative shocks connected with the public revenues. It is tested whether or not GNP reacts to these shocks and what is the sign of the impact. The VAR model tended to explain the potential misbalance in the fiscal policy. Moreover, the VAR model enables authors to provide some very important policy implications. For instance, the evidence on the dissymmetry in the positive and negative roles of public expenditures has not been found. Apart from these findings, the evidence on the dissymmetry in the positive and negative shocks of public revenues has been found. Thus, it is suggested that the economic performance should be stimulated through the government expenditure instead of regressive income tax.

Benazić (2006) analyzed impacts of tax burden increase, or budget revenues and expenditures on economic activity in Republic of Croatia by using cointegration analysis and vector model with error correction for the 1995 – 2005 period. Dalić (2013) pointed, by analyzing influence of fiscal policy on economic growth in the new EU member states, that fiscal policy can positively affect economic growth by making changes in the structure of overall expenditures, in other words by reducing non-productive or current expenditures and/or by reducing taxes.

Document Fiscal policies in EMU countries: strategies and empirical and evidence provided by Forte and Magazzino (2016) have explained that a unit increase in government spending tends to reduce the growth performance by 0.44. However, the authors have found that capital expenditure directed to capital goods or the reduction in taxes tends to have encouraging role in the growth process. Moreover, the findings of this paper stress the need for the consolidation of fiscal policy to have a better growth performance. There was a need to measure the fiscal consolidation. For this reason the authors have suggested the two different proxy variables. Thus, government expenditure and the progressive income taxes tended to have a negative impact on economic growth. Thus, the main findings of this paper suggest the necessity to reduce the public debt or better to say to reduce the inefficiency in these spending. The public debt as a share of GDP is found to be adequate proxy of the public debt.

3. DATA AND METHODOLOGY

The role of fiscal policy in economic growth has been explored using cointegration analysis and vector model. For this purpose, the time-series data on real economic activity in the Federation of Bosnia and Herzegovina are collected at quarterly level. The data on gross domestic product, consolidated budget revenues and expenditures are collected in the period ranging between 2008 and 2014. The data sources are annual reports of the Ministry of Finance and statistical reports from Federal Bureau of Statistics. In the Federation of Bosnia and Herzegovina there are three levels of budget, namely the federation budget (revenues and expenditures of budget users - ministries, agencies, etc., and all those financed from the federation budget), the budgets of the local units and the canton's budget. All of these budgets make the federal consolidate budget. The government budget is important as a total indicator of how much revenue the state has collected and, most importantly, how it was spent. Consolidated federal budget is the result of consolidation all three components: the federal budget, the cantons budget and the budget of local units.

Based on the revenue and expenditure structure, it is possible to conclude that most of the revenues of all levels of the budget are tax revenues, and the largest part of the expenditures are employees' salaries, social benefits and subsidies. As it is known, government spending can have multiple impacts on economic activity. The analysis of public revenues and expenditures in the FB&H (aggregate data for FB&H, cantons, municipalities and funds) in the period from 2008 to 2014 shows that expenditures always exceeded the realized revenues. For the first time in 2014, revenue surplus was realized. Total public revenues and receipts amounted to BAM 7.380 million, compared to the previous year by BAM 485 million, while total public expenditures and expenditures amount to BAM 7.266 million and are at the same level as in the previous year. Revenue surplus on expenditures amounting to 114 million BAM was realized. The increase in public revenues is a result of the increase in tax revenues, especially indirect taxes. Loans and loans received in the reporting year amounted to BAM 813 million and relate mostly to receipts from long-term bonds and the receipt of treasury bills. However, repayments of loans and loans amounted to BAM 894 million, which is more than 48 million BAM in relation to loans and loans received. Therefore, the overall result in the public finances of the Federation of B&H in 2014 is positive with the realized level of revenues over expenditures in the amount of 66 million BAM. This is why this is taken as the last observed year.

Due to the relatively short time-frame, this analysis uses data on monthly basis. Given that the monthly gross domestic product data are not published, rather quarterly data are announced, data on monthly bases are obtained by the interpolation. In order to control for the influence of seasonal factor, the seasonal adjustment of

all variables is also carried out by using X11 method. In order to stabilize the variance, we have calculated the logarithmic value of the time-series. The dependent variable is gross domestic product while independent variables are consolidated budget revenues and expenditures.

In order to conduct empirical analysis, we have employed the vector autoregression model, VAR. The general form of this model with n variables and k -periods back observation is given as follows (Eq. 1):

$$Z_t = \mu + A_1 Z_{t-1} + \dots + A_k Z_{t-k} + \psi D_t + e_t \quad (1)$$

where Z_t denotes $(n \times 1)$ vector of potentially endogenous variables, A_1, \dots, A_k are $(n \times n)$ quadratic matrix of autoregression parameters, D_t is a vector of no stochastic exogenous variables with the matrix of parameters denoted by Ψ , while μ represents the vector of constants for every variable, e_t is n -dimensional vector of white noise with the mean of zero and covariance matrix Σ (Bahovec and Erjavec, 2009).

One of the advantages of VAR model is that they are suitable to describe the dynamic adjustment of the variables in the process of moving towards the equilibrium state. However, in order to analyze the long-term equilibrium, there is a need to include the data on long-run equilibrium. For this reason, a general VAR model is extended by adding exogenous variables and is known as the error correction model, ECM.

The first step in this analysis is testing for the stationarity of time-series. This analysis employs Augmented Dickey Fuller test which is the most commonly used test for this purpose (Ahmad and Khan, 2018; Muslija et al., 2019; Adedoyin et al., 2022; Abul and Satrovic, 2022). In order to select the appropriate VAR or VECM model, there is a need to analyze the integration and cointegration of the variables of interest. In addition, the Johansen procedure is used to determine the number of cointegrations (Satrovic and Muslija, 2018). To determine the number of cointegration vectors, two tests are used: maximum eigenvalue and trace tests. If VAR models are applied in testing general economic assumptions, the main goal of the VAR model is to analyze the dynamics of a group of phenomena while the estimations of model parameters are not so important by themselves. For this purpose, the innovations analysis that involves the impulse-response function, IRF and decomposition of variance, DVC is employed. The impulse-response function can be analyzed by a means of a table of graphically.

4. THE EMPIRICAL RESULTS

The empirical analysis starts by testing the stationary properties of the variables. Moreover, the impulse reactions are also estimated in the case of the Federation of Bosnia and Herzegovina over the period between 2008 and 2014. The results are presented below.

To estimate the cointegration equations and to define the error correction model, the stationarity of the variables in the model was examined. The results suggest that the time series of GDP and consolidated budget revenues are reported to contain unit root and therefore there is a need to calculate the first differences. All of the first difference variables are reported to be stationary with the I(1). Hence, these data are suitable to explore the long-term relationships. The optimal number of periods back observation is found to be $k=11$.

The trend of stationary data suggests a slow rising trend, where during a slow-down in economic growth, government expenditure highly deviates from gross domestic product. The tests in levels suggest a bidirectional causal relationship between consolidated budget revenues and expenditures at lower k -s, while tests in differences suggest that consolidated budget expenditures cause revenues at the same levels.

Table 1. Johansen trace test

Trend: constant			constant				
rank	parms	LL	eigenvalue	SBIC	HQIC	AIC	
0	93	1095,84610		-25,66546	-27,46616	-28,65275	
1	98	1113,393	0,39428	-25,86334	-27,76085	-29,01123	
2	101	1122,82290	0,23618	-25,95068*	-27,90628*	-29,19494	
3	102	1125,94450	0,08533	-25,97918	-27,95414	-29,25556	
max rank	parms	LL	eigenvalue	trace statistic	critical value		
0	93	1095,84610		60,19680	35,65		
1	98	1113,393	0,39428	25,10300	20,04		
2	101	1122,82290	0,23618	6,24310*	6,65		
3	102	1125,94450	0,08533				

Note: The number of cointegration vectors is determined for a 5% level of significance.

Source: Authors

The results of the tests indicate that higher government expenditure requires the additional increase in revenues. Table 1 suggests that in a model that assumes the existence of deterministic trend in a data, the number of cointegration vectors is found to be 2. In order to test this, we have conducted the stationarity tests and the

results confirm that the number of vectors is in accordance with the expectations. A complete VEC model is established by applying the VECM model from which the insignificant variables are gradually eliminated (Huskic and Satrovic, 2020; Satrovic et al., 2022). By testing the last variables in the model, the elimination of the variables is carried out. The SC (Schwarz) criterion is employed to eliminate the highest number of variables in the model.

The analysis to follow presents the estimated coefficients of the short- and long-term effects. Table 2 summarizes the rules of action of automatic stabilizers and the rules of sustainability of fiscal policy. Automatic stabilizers are taxes and some public expenditures that operate permanently and currently. Within the rules of fiscal policy sustainability, their role is to monitor changes in the amount and type of public revenues and expenditures by applying automatic stabilizers. By doing this, the economic problems are likely to be resolved.

Table 2. The rules of action of fiscal policy in Federation of Bosnia and Herzegovina

Automatic stabilizers	Sustainability
$GDP = 1.171244 * EXPN$	$TAX = 0.3585233 * EXPN$

Source: Authors

Table 2 suggests that budget revenues and expenditures have a long-term impact on GDP, but the relationship is bidirectional. The coefficients can be interpreted as following: if expenditures increase by 1%, GDP will increase by 1.17%. In addition, the increase of 1% in expenditures will increase revenues by 0.35%.

Structural VEC models can be used to identify shocks in the analysis of impulse reactions of variables by setting limits on the matrix of long-term and short-term effects. For this purpose, the impulse reactions of the variables are analyzed and shown in Figure 1. The following variables were used to estimate the impulse response: gross domestic product, consolidated revenues and expenditures of the FB&H. The impulse-response function is graphically analyzed (Figure 1).

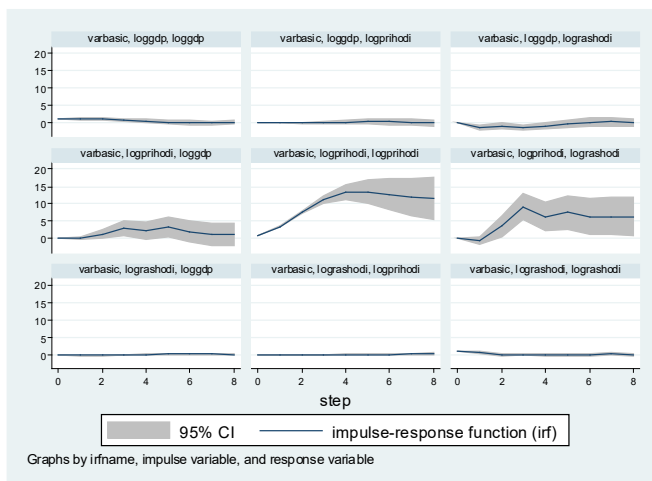


Figure 1. Impulse-response function
Source: Authors

Based on the empirical analysis of impulse reactions, we note that the unit increase of the consolidated budget revenues will not affect the gross domestic product in the first few months (short-term). After that, there would be a significant long-term reduction of gross domestic product in the Federation of Bosnia and Herzegovina. Budget expenditures are increasing much lower than revenues which are in accordance with the theoretical assumptions.

The unit increase in budget expenditures will lead to the initial increase in GDP, after which there would be a decrease in GDP and the performance will decrease gradually. This is attached to the fact that the unit increase in budget expenditures leads to an increase in gross domestic product. On the other hand, the increase in gross domestic product would have a weak long-term positive impact on budget expenditures. The increase in budget revenues would have a positive impact on expenditures only in initial phase, but this impact will ultimately vanish.

The analysis above, suggests that the impact of budget expenditures obtained by analyzing impulse-response function points to other factors influencing GDP in the Federation of Bosnia and Herzegovina. Hence, the impact of fiscal policy is significant but partial. The role of fiscal policy over budget expenditures in economic activity is therefore found to be small. In the long-term, the role of fiscal policy in economic activity can be achieved by increasing or decreasing the tax burden. With all of this, it is of great importance to have a stronger interaction between fiscal and monetary policy in order to achieve macroeconomic goals in the Federation of Bosnia and Herzegovina. However, this is still not being realized.

5. CONCLUSION

The aim of this research is to show whether or not the fiscal policy in Federation of Bosnia and Herzegovina can stimulate economic activity approximated by gross domestic product. For the purpose of empirical analysis of fiscal policy impact on gross domestic product growth in the period 2008 – 2014, we applied econometric model of cointegration analysis and vector models (VAR and VECM) for forecasting. Government interventions in inducement of economic growth can differ in their characters. Through fiscal policy the government most often corrects the state of economy in conjuncture cycles. The theory of public choice affirms that the government has an important role in economic activities. In the FB&H there is still no firm proof of long-term fiscal sustainability as deficit appears to be a constant in fiscal policy. The indicator of fiscal policy sustainability is capability to occasionally create surplus, which is not the case in the Federation of Bosnia and Herzegovina since 2008, even with all introduced measures and the instruments of budgetary fiscal sustainability. From the empiric analysis of impulse reactions, it is visible that unit revenue increase would lead to long-term reduction of GDP. Budget expenditures would only in the initial period result in GDP growth, however in the second phase their influence would be almost negligible. The results of empiric research with the data for the 2008 – 2014 period primarily confirm validity in practice of two main and basic approaches of fiscal policy impacts, namely neoclassical and Keynesian, which emphasize the fact that positive shock of fiscal spending leads to gross domestic product increase, and positive shock of fiscal revenues brings decrease of gross domestic product. Based on impulse reaction analysis it could be observed that unit increase of budgetary revenues in the period 2008 – 2014 would not influence gross domestic product in the first few quarters (short-term). After that, a long-term decrease of the gross domestic product in the FB&H would step in. The volume of budget expenditures impacts is considerably lower than budget revenues. Based on the impulse reactions we can conclude that the impacts of budget expenditures point to other factors that influence mobility of the gross domestic product in the Federation of Bosnia and Herzegovina. Therefore, the impact of fiscal policy on economic growth in the FB&H is partial, and development function that would possibly lead to considerable GDP increase is small.

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