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# TESTING FISCAL SUSTAINABILITY IN BOSNIA AND HERZEGOVINA

# TESTIRANJE FISKALNE ODRŽIVOSTI U BOSNI I HERCEGOVINI

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**Summary**

Considering contemporary economic trends and the importance of fiscal policy instruments for ensuring macroeconomic stability, the research focuses on fiscal sustainability. Accordingly, special attention is paid to the empirical approach to fiscal sustainability, where the central question in considering the long-term sustainability of public finances is the concept of intertemporal budget constraint. The potential cointegrating relationships between public revenues and public expenditures, which represent the basic condition for fiscal sustainability, were tested on the example of Bosnia and Herzegovina. Testing the cointegration of time series was performed using the Engle-Granger two-step procedure and then using the Johansen procedure based on the VAR model. Finally, based on the above, the results of the fiscal sustainability analysis of Bosnia and Herzegovina were summarized, which are relevant for defining macro-fiscal goals and development-oriented policies.

**Keywords**: fiscal policy, fiscal sustainability, time series, cointegration, VAR JEL classification: E62, C22

**Sažetak**

Uzimajući u obzir savremena ekonomska kretanja i značaj instrumenata fiskalne politike za osiguranje makroekonomske stabilnosti, istraživanje je fokusirano na fiskalnu održivost. U skladu sa tim, posebna pažnja posvećena je razmatranju empirijskog pristupa fiskalnoj održivosti, gdje je kao centralno pitanje u razmatranju dugoročne održivosti javnih finansija predstavljen koncept intertemporalnog budžetskog ograničenja. U nastavku su na primjeru Bosne i Hercegovine testirane potencijalne kointegracijske veze između javnih prihoda i javnih rashoda što predstavlja osnovni uslov fiskalne održivosti. Testiranje kointegriranosti vremenskih serija izvršeno je primjenom Engle-Granger dvostepene procedure, a zatim i pomoću Johansenove procedure zasnovane na VAR modelu. Konačno, na bazi navedenog rezimirani su rezultati analize fiskalne održivosti Bosne i Hercegovine koji su relevantni za definisanje makro-fiskalnih ciljeva i razvojno orijentisane politike.

**Ključne riječi**: fiskalna politika, fiskalna održivost, vremenske serije, kointegracija, VAR JEL classification: E62, C22

## 1. INTRODUCTION

Fiscal policy generally has numerous implications on movements in a national economy. By ensuring fiscal sustainability and balance of public finances, fiscal policy has a direct impact on macroeconomic stability. Therefore, it is important that fiscal policy is conceived as a sustainable subsystem within the overall economy. In cases of inadequate fiscal policy implementation by the government and failure to achieve planned fiscal goals, macroeconomic stability and the sustainability of the public sector as a whole are called into question. Fiscal sustainability is directly related to the solvency of the state. Unsustainable fiscal policy can threaten the solvency of the state if necessary adjustments and changes are not made in the fiscal area. Such a situation inevitably reflects on the movement of the entire economy, the economic growth that is achieved, and ultimately on economic development (Hemming, 2000). After the global debt crisis recorded in the early 1980s, the importance of the debate primarily on public debt, but also on the sustainability of fiscal policy, has increased. In addition, the emergence of high budget deficits in the United States has led to the publication of various empirical studies on fiscal sustainability. There is no precisely defined procedure or definition on the basis of which fiscal sustainability would be assessed. Different authors approach the definition and assessment of fiscal sustainability in different ways. Thus, the concept of fiscal sustainability has many definitions, although it almost always refers to the fiscal policy of the government or the public sector.

One concept in defining fiscal sustainability relates to solvency, or the ability of a government to service its debt. However, assessments of fiscal sustainability rarely conclude that a government is insolvent, unless creditors and all other key players in this area are already aware of this fact. Another concept in assessing fiscal sustainability relates to the government's ability to continue implementing existing policies while maintaining solvency (Chalk and Hemming, 2000). With this approach, the analysis of fiscal sustainability has a wider scope. In this case, special attention is paid to the analysis of the effects of fiscal and monetary policies and adjustments related to maintaining solvency. The background to this approach is the fact that fiscal policy, coupled with monetary policy, is one of the fundamental and most significant instruments of macroeconomic policy (Alfonso and Sousa, 2009).

Analyses of fiscal sustainability are mostly focused on the question of the theoretical concept of optimal fiscal policy, disregarding the issue of feasibility and implementation possibilities. In addition, one of the drawbacks of the analysis of fiscal sustainability is the fact that the possibility of error, or the certainty of the estimate, is often not taken into account. Academic studies on fiscal sustainability focus on research that is focused on the cointegration between public revenues and expenditures, as well as research that analyzes fiscal sustainability from

the perspective of sustainable public debt with specified movements of certain macroeconomic parameters (Krznar, 2002). Blanchard (1990) notes that the issue of fiscal sustainability is related to the analysis of whether the current deficit, and therefore the current borrowing of the central government, leads to an excessive accumulation of public debt. In this context, fiscal policy needs to maintain a sustainable level of deficit that the government can cover without excessive growth of public debt. Many other theorists also place particular emphasis on the level of public debt when assessing fiscal sustainability. Thus, Cuttington (1997) warns that fiscal policy is sustainable if the economy achieves a constant debt-to-GDP ratio with a certain rate of growth and a constant real interest rate.

In academic and other circles where fiscal policy is discussed, fiscal sustainability is often linked to the engagement of the International Monetary Fund (IMF). It is important to note that the IMF's actions primarily involve ensuring balance of payments equilibrium, which is achieved through credit lines provided to countries that are members of this organization. Specifically, if these countries face difficulties in financing international payments, the IMF provides them with a financial assistance instrument. This ensures continuous financing of foreign obligations, as well as stability of the currency and foreign reserves. Ultimately, this paves the way for potential economic recovery and provides the basic prerequisites for economic growth (DEP, 2010).

The complexity of the state system is reflected to a great extent in fiscal sustainability, and this issue needs to be approached in a special way depending on the country under analysis. Like many other countries, Bosnia and Herzegovina (BiH) has problems with determining and defining the optimal level of fiscal decentralization. The existing framework of fiscal policy in BiH is limited by the state system, which gives entities a high degree of sovereignty and leads to fragmentation of the fiscal structure. Such a system largely results in a lack of stronger coordination in creating fiscal policy at the state level, which is of paramount importance for a small country like BiH. The ultimate result of this situation is an unsatisfactory level of real economic growth due to the absence of fiscal coordination (Međedović, 2010). Additionally, it should be noted that BiH is classified as a small open economy whose growth model is based on consumption largely financed by credit expansion and transfers from abroad (DEP, 2011). Therefore, the BiH's economy is largely tied to global economic trends. Moreover, the BiH is unable to adequately withstand external shocks, which inevitably also reflects on public finances. Thus, the global financial crisis, whose effects were visible in the last quarter of 2008 and throughout 2009, led to a decline in economic activity and aggregate demand, worsening the fiscal situation in the BiH. A special challenge for fiscal sustainability in the BiH, but also globally, is the emergence of the COVID-19

pandemic, which brings about a structural shift in the functioning of economies since 2020. The pandemic has had a strong impact on economic trends, simultaneously leading to shocks in aggregate supply and demand. The strong economic contraction seriously jeopardizes the labor market and brings numerous negative repercussions. Such a situation inevitably reflects on the BiH's fiscal policy, as a key instrument for responding to the negative effects of the pandemic.

The previous discussion highlights the necessity of quality analysis of the BiH's fiscal policy and its impact on fiscal sustainability and economic development, which also provides an opportunity to gain insight into the information necessary for defining macro-fiscal goals and thus a basis for creating an adequate and development-oriented policy. In support of the previous conclusion, it should be noted that this problem has not been given adequate attention in scientific circles in the BiH, although BiH faces numerous difficulties in balancing the fiscal system. Based on this defined problem, it seems justified and necessary to scientifically process and investigate the issue of fiscal policy sustainability in the BiH.

## 2. EMPIRICAL APPROACH TO EVALUATING FISCAL SUSTAINABILITY

The intertemporal budget constraint is central to the discussion of long-term sustainability of public finances. If the intertemporal budget constraint is not met, public spending is not sustainable in the long run (Bravo and Silvestre, 2002). Assuming that the government does not engage in a Ponzi game, relying permanently on refinancing debt through new borrowing to pay off maturing principal plus interest is not a viable option. A Ponzi game implies the possibility of the government servicing debt through new borrowing (Bartolini et al., 1991). Despite this fiscal policy constraint, it should be noted that there are models in which any movement in the time series of deficits is sustainable because it is possible to borrow and finance interest with even more borrowing. In Diamond's neoclassical growth model, such a fiscal policy is possible. In such dynamically inefficient economies, current public debt growth does not have implications for future surpluses (Wilcox, 1989). On the other hand, governments in dynamically efficient economies face intertemporal budget constraints. With the inclusion of the possibility of monetary financing of deficits, the intertemporal budget constraint implies that the value of public debt must be equal to the sum of the present value of expected future primary surpluses and the present value of expected future gains from money issuance-seigniorage (Buiter, 1985). Based on this, empirical studies that address fiscal sustainability focus on testing the consistency of time series of public revenues, public expenditures, and public debt. Tests include checking the stationarity and cointegration of fiscal variable series. The existence of cointegration between public revenues and public expenditures is determined

based on certain assumptions by testing and analyzing the relationship between primary public revenues and expenditures, or between total public revenues and expenditures.

Econometric methods for modeling fiscal variables, whether they focus on univariate characteristics of time series such as public debt or primary budget balance, or those that establish the existence of cointegration between public revenues and expenditures, are widely used in various empirical studies addressing the issue of fiscal sustainability (Jevđović, 2018). In this context, particular attention has recently been given to the assessment of the fiscal reaction function and sustainability (Bohn, 2005). New cointegration techniques that include structural changes in cointegration testing now also allow for more precise tests of cointegration between fiscal variables. Inconsistency with respect to intertemporal budget constraint found as a result of testing and analysis directly reflects on fiscal variables, suggesting changes aimed at ensuring sustainability. In cases where changes in unreliable fiscal policy patterns cannot realistically be expected, it is possible that creditors may reasonably suspect government borrowing through a Ponzi scheme strategy. This leads to a situation where some creditors will bear the public debt at some future time. The result of this will be that these creditors will have lower consumption in at least one period and therefore a lower level of well-being compared to the situation in which the creditor had decided not to bear the public debt. Accordingly, their negative response to further government borrowing requests is understandable and expected. Rational creditors would not be willing to buy public debt. In this way, the government would not have the possibility of prolonging the debt, which would ultimately lead to insolvency of public finances (Krznar, 2002).

The wide approach in analyzing fiscal sustainability was tackled by the high budget deficits recorded in the US. The first studies on the topic of intertemporal budget constraint analyzed time series of deficit and public debt movements, testing them for stationarity. This was the approach applied in the pioneering engagement of Hamilton and Flavin (1986) on the example of the US, followed by other theorists. These include analyses by Hamilton and Flavin (1986), Kremers (1998), Wilcox (1989), Trehan and Walsh (1991), Haug (1991), Hakki and Rush (1991), Tanner and Lia (1994), Quintos (1995), and others. The focus of all studies is the verification of the level of budget deficits in terms of intertemporal budget constraint. The approach has further been used and applied to the example of other countries, individually and within groups of countries.

Hamilton and Flavin (1986), Trehan and Walsh (1988), and Haug (1991) focused directly on public revenues and expenditures, applying conventional cointegration tests, and came to the same conclusion that US government policy in the field of public finances is consistent with intertemporal budget constraints. Trehan and

Walsh had previously shown that meeting the government's present-value budget balance is equivalent to the condition that public expenditures (including interest payments) and tax revenues are cointegrated. In this case, cointegration between expenditures and revenues, whether real or as a share of GDP, is a sufficient condition for fiscal policy sustainability. Wilcox (1989) included an exogenously determined structural break in the series in the analysis and found oscillations regarding fiscal sustainability in the work of Hamilton and Flavin. Wilcox's involvement is followed by sustainability analyses that encompass exogenously determined structural changes in fiscal variable time series, tested with different tests. For example, Hakkio and Rush (1991) and Quintos (1995), based on a long time series sample, also confirm that expenditures and revenues are cointegrated, with certain breakpoints that indicate years or periods of unsustainability (Bravo and Silvestre, 2002). This is further supported by analyses that deal with endogenously determined structural breaks (Tanner and Liu, 1994; Quintos, 1995; Fountas and Wu, 1996). The structural break itself can affect the final result of the test, which Wilcox indirectly proved by dividing the time series with an exogenously marked discontinuity point that determined the structural change and therefore tested separately for each series. By applying a cointegration test between total public revenues and expenditures that encompasses a structural break, the mentioned theorists conclude that the government, since public revenues and expenditures are not cointegrated, faces pressures related to debt repayment. This situation implies that expenditures grow faster than revenues over time, thus questioning fiscal sustainability.

Here we want to highlight an analysis in which two studies attempted to present medium-term forecasts for European countries, although this is not the focus of our research. Uctum and Wickens (1997) used data on debt-to-GDP ratios for 13 EU member states from 1970 to 1995 to assess long-term sustainability, which requires debt or deficit stationarity as a test of intertemporal budget constraints and medium-term sustainability. They used the fiscal stress indicator developed by Blanchard et al. (1991) to test the effects of imposing debt and deficit constraints on fiscal policy sustainability in the US and European countries. Artis and Marcellino (1998) also used data on debt and deficit ratios to test the long-term sustainability state. They required the discounted debt-to-GDP ratio to represent a stationary zero mean variable, which was accepted for countries where integrated movements of debt and deficit ratios were recorded. With the exception of some countries, fiscal sustainability was generally uncertain. It is important to note that newer research and analyses of fiscal sustainability that apply the intertemporal budget constraint approach have improved cointegration tests that encompass structural changes in series, significantly improving the quality of fiscal data and contributing to better fiscal management.

Cointegration is a relatively new statistical concept that has completed the relationship between economic theory and econometric modeling. It was developed by Robert Engle and Clive Granger in 1987, creating a key framework for econometric modeling of macroeconomic time series (MacKinnon, 2010). Cointegration is inherent to certain non-stationary time series. Assuming the existence of at least two time series with stochastic trends, the concept of cointegration implies their movement over time within certain limits, with a tendency for the difference between them to be stationary. The causal relationship between many economic variables, including expenditures and revenues that are the focus of our research, explains such movements. In this way, the concept of cointegration offers the possibility of analyzing various economic trends based on the interaction and causal relationship of the economic variables under consideration. The special significance of applying the concept of cointegration in time series analysis lies in the fact that it focuses on examining the goal of long-term equilibrium, as well as short-term movements that can lead to certain deviations from the overall goal. This approach achieves the necessary compromise in economic research, enabling a better understanding of the overall economic perspective and the creation of a policy mix.

## 3. DATA AND METHODOLOGY

The main limitation of econometric modeling of macroeconomic variables for developing economies is the unavailability of relevant data to conduct empirical research. Namely, the problem often faced in this context is the insufficiently long time series data with frequent structural breaks caused by macroeconomic instability. The data for the subject research is based on quarterly data for the period from the third quarter of 2004 to the third quarter of 2020. For this purpose, data on total revenues and expenditures in nominal value were used, taken from the statistical portal of the Central Bank of Bosnia and Herzegovina. They are based on the government finance statistics (GFS) system, developed by the IMF with the aim of presenting statistical data consistently and systematically, which enables policy makers and analysts to analyze trends in the fiscal sector and the liquidity position of the general government (IMF, 2001). The basis for data acquisition is the quarterly report on the operations of the central government sector for consolidated Bosnia and Herzegovina. Accordingly, it should be noted that it does not include the local government level (municipalities and cities), two public companies (JP Ceste and JP Autoceste), as well as Funds for Professional Rehabilitation and Employment of Disabled Persons at all levels of government. Before econometric modeling, all time series were seasonally adjusted, taking into account the quarterly frequency of the data used, using the TRAMO/SEATS method.

Using econometric techniques commonly used for time series analysis, an empirical analysis of fiscal sustainability in the BiH was conducted. The basic assumption of classical econometric analysis involves the stationary property of the variables under consideration, which generally implies the constancy of the mean and variance within the observed time frame. However, given the reflections of the business cycle on the movement of economic variables and the inevitable influence of various social and political factors, there is a tendency for instability in the mean and variance of most variables. Therefore, testing the order of integration of time series is an initial activity in econometric research as the validity of the basic assumption of stationary variables under consideration is crucial for the development of econometric models and interpretation of the results. There are various methods used for testing integration, or stationary properties of time series. One of the methods described below is the unit root test, which was used in our research. In addition, testing the stationary properties of time series is also done by applying tests for stationarity and unit root tests in the presence of a structural break (Afonso and Jalles, 2012).

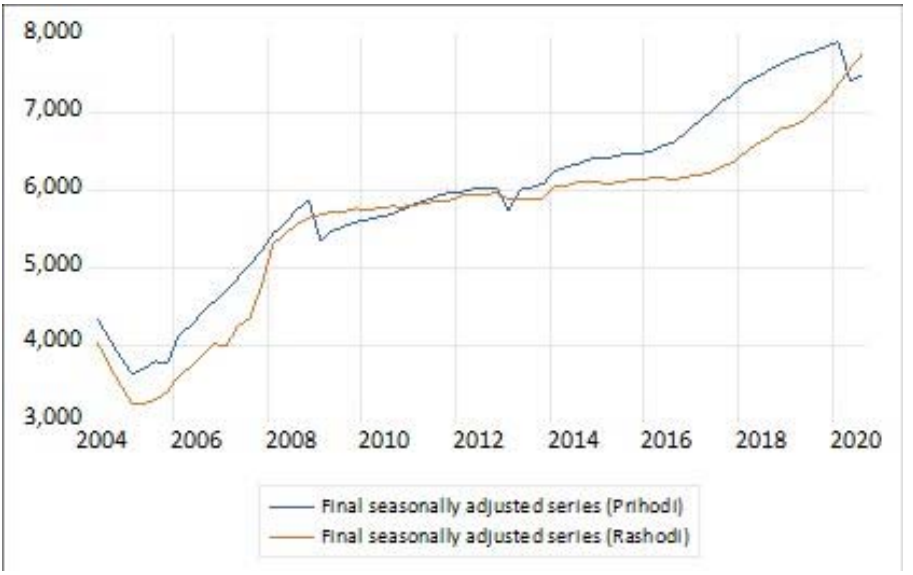
In line with the generally accepted approach, the unit root tests were initially used to test the level of integration of the time series variables under investigation, using the BiH as an example. Potential cointegrating relationships between the fiscal variables were then tested using the Engle-Granger two-step procedure and Johansen's procedure. Finally, in addition to examining the cointegrating properties, possible causal relationships between the observed variables were analyzed. In order to diagnose potential models, the existence of normal distribution, homoscedasticity, and absence of autocorrelation in the residuals were tested at all stages of the research, which will be further discussed.

## 4. EMPIRICAL RESULTS

Access to empirical research implies a preliminary analysis of collected data, which includes graphical representation of variables of interest. The graphical representation of deseasonalized time series of public revenues and public expenditures (Graph 1) shows their relatively coordinated movement in the period from 2004 to 2008.

The financial crisis that occurred in 2008 brought challenges to the Bosnian fiscal sector, which faced a deficit budget gap. Accordingly, activities and measures aimed at consolidating public finances are being implemented. The BiH committed to implementing restrictive fiscal policy measures as part of an arrangement it had with the IMF. This approach brings stability to public finances, resulting in a budget surplus recorded in 2015. A similar trend continued until 2020 when the emergence of the COVID-19 pandemic caused a structural shift in the economy.

The inability to adequately respond to external shocks, as well as the pandemic-induced decrease in public revenues and increase in public expenditures, negatively affected fiscal sustainability.




Graph 1. Deseasonalized public revenues and expenditures (in million BAM)
Source: Author's creations

Using the example of the BiH, the movement of public revenues and public expenditures was assessed. Accordingly, a cointegration test was conducted between total revenues and total expenditures. The test aimed to determine the existence of a potential long-term relationship between the variables under consideration, which is indicative in the context of assessing fiscal sustainability. Cointegration between total revenues and total expenditures implies the possibility of corrective action by fiscal policy in accordance with the intertemporal budget constraint. The initial step in the econometric analysis of fiscal sustainability involves examining the order of integration of the time series under consideration. In accordance with the aforementioned methodological explanation, the Augmented Dickey-Fuller test of unit roots was applied. The results of testing the stationarity of the variables under consideration and the order of integration are presented in Table 1. The lag length to avoid residual autocorrelation in the autoregressive model was defined based on the Schwarz information criterion.

The null hypothesis assumes a unit root, i.e. non-stationarity of the time series, while the alternative hypothesis implies stationarity of the time series. The

decision on stationarity/non-stationarity of the time series is made by comparing the test statistic and critical values of the Dickey-Fuller distribution. The test statistic represents the ratio of the estimated parameter value and the respective standard error. The null hypothesis is rejected if the value of the empirical test statistic is less than the critical value (MacKinnon, 1996). The null hypothesis of the existence of a unit root can generally also be rejected if the p-value (prob.) is less than 5%. The stationary tests of the seasonally adjusted variables of total revenue and total expenses in levels, at a 5% significance level, show that the test statistic is greater than the critical value (Table 1). Accordingly, we conclude that the observed variables are non-stationary in levels. Furthermore, the tests of the first differences of the variables of total revenue and expenses and the testing of the stationarity of the differenced series in all forms of the autoregressive model confirm their stationarity, as the test statistics are less than the critical values. Since both non-stationary time series induced stationarity after one differencing, we conclude that the series are integrated of order 1, i.e. I(1). Therefore, both variables are non-stationary in levels and stationary in first differences. Consequently, there is a possibility that the series are cointegrated, which supports conducting a cointegration test (Bahovec and Erjavec, 2009).

Table 2 below presents the results of the cointegration test, which represents the second part of the EG two-step procedure. The stationarity of the residuals was tested using the ADF method. From the obtained results, we can see that the value of the test statistic is greater than the critical value. Since the null hypothesis, i.e. non-stationarity of the residual series, has been confirmed, there is no cointegration between revenue and expenses. The absence of cointegration indicates non-fulfillment of the basic condition of fiscal sustainability. The variables under our research focus, revenue and expenses, are characterized by unbalanced movement over time. Accordingly, the absence of stationarity in the difference between them in the observed time frame is evident. This ultimately suggests to us that there is no long-term equilibrium between public revenue and public expenses in Bosnia and Herzegovina. In accordance with the defined research method, the existence of cointegration between the variables under consideration was tested using the Johansen procedure (Table 2, column 3). This also verified the results obtained by the EG procedure.

Table 1. Testing the integration of the series

| ADF - Unit root (constant and trend) - REVENUES | | | ADF - Unit root (constant) - REVENUES | | | ADF - Unit root (constant) - first differences<br>ADF - Unit root (constant) - REVENUES | | |
|---|---|---|---|---|---|---|---|---|
| Null Hypothesis: REVENUES has a unit root | | | Null Hypothesis: REVENUES has a unit root | | | Null Hypothesis: D(REVENUES) has a unit root | | |
| **Exogenous: Constant, Linear Trend** | | | **Exogenous: Constant** | | | **Exogenous: Constant** | | |
| Lag Length: 0 (Automatic - based on SIC, maxlag=10) | | | Lag Length: 0 (Automatic - based on SIC, maxlag=10) | | | Lag Length: 0 (Automatic - based on SIC, maxlag=10) | | |
| | t-Statistic | Prob.* | | t-Statistic | Prob.* | | t-Statistic | Prob.* |
| **Augmented Dickey-Fuller test statistic** | **-1.960473** | **0.6114** | **Augmented Dickey-Fuller test statistic** | **-0.600953** | **0.8626** | **Augmented Dickey-Fuller test statistic** | **-7.185957** | **0.0000** |
| Test critical values: 1% level | -4.105534 | | Test critical values: 1% level | -3.534868 | | Test critical values: 1% level | -3.536587 | |
| 5% level | -3.480463 | | 5% level | -2.906923 | | 5% level | -2.907660 | |
| 10% level | -3.168039 | | 10% level | -2.591006 | | 10% level | -2.591396 | |
| *MacKinnon (1996) one-sided p-values. | | | *MacKinnon (1996) one-sided p-values. | | | *MacKinnon (1996) one-sided p-values. | | |
| Augmented Dickey-Fuller Test Equation | | | Augmented Dickey-Fuller Test Equation | | | Augmented Dickey-Fuller Test Equation | | |
| Dependent Variable: D(REVENUES) | | | Dependent Variable: D(REVENUES) | | | Dependent Variable: D(REVENUESI_SA,2) | | |
| Method: Least Squares | | | Method: Least Squares | | | Method: Least Squares | | |
| Date: 05/19/21 Time: 13:41 | | | Date: 05/19/21 Time: 13:42 | | | Date: 05/19/21 Time: 13:42 | | |
| Sample (adjusted): 2004Q3 2020Q3 | | | Sample (adjusted): 2004Q3 2020Q3 | | | Sample (adjusted): 2004Q4 2020Q3 | | |
| Included observations: 65 after adjustments | | | Included observations: 65 after adjustments | | | Included observations: 64 after adjustments | | |

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| REVENUES(-1) | -0.121496 | 0.061973 | -1.960473 | 0.0544 |
| C | 538.2038 | 250.7198 | 2.146635 | 0.0357 |
| @TREND("2004Q2") | 7.008677 | 3.755975 | 1.866007 | 0.0668 |

| | | | |
|---|---|---|---|
| R-squared | 0.058571 | Mean dependen var | 48.12663 |
| Adjusted R-squared | 0.028203 | S.D. dependent var | 146.5895 |
| S.E. of regression | 144.5076 | Akaike info criterion | 12.82960 |
| Sum squared resid | 1294712. | Schwarz criterion | 12.92995 |
| Log likelihood | -413.9619 | Hannan-Quinn criter. | 12.86919 |
| F-statistic | 1.928678 | Durbin-Watson stat | 1.572609 |
| Prob(F-statistic) | 0.153961 | | |

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| REVENUES_SA(-1) | -0.009658 | 0.016071 | -0.600953 | 0.5500 |
| C | 105.4675 | 97.15064 | 1.085608 | 0.2818 |

| | | | |
|---|---|---|---|
| R-squared | 0.005700 | Mean dependent var | 48.12663 |
| Adjusted R-squared | -0.010083 | S.D. dependent var | 146.5895 |
| S.E. of regression | 147.3267 | Akaike info criterion | 12.85347 |
| Sum squared resid | 1367424. | Schwarz criterion | 12.92037 |
| Log likelihood | -415.7377 | Hannan-Quinn criter. | 12.87987 |
| F-statistic | 0.361145 | Durbin-Watson stat | 1.671323 |
| Prob(F-statistic) | 0.550027 | | |

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| D(REVENUES(-1)) | -0.873047 | 0.121493 | -7.185957 | 0.0000 |
| C | 46.81006 | 18.73706 | 2.498261 | 0.0151 |

| | | | |
|---|---|---|---|
| R-squared | 0.454408 | Mean dependent var | 4.954739 |
| Adjusted R-squared | 0.445608 | S.D. dependent var | 191.3440 |
| S.E. of regression | 142.4700 | Akaike info criterion | 12.78689 |
| Sum squared resid | 1258457. | Schwarz criterion | 12.85436 |
| Log likelihood | -407.1805 | Hannan-Quinn criter. | 12.81347 |
| F-statistic | 51.63798 | Durbin-Watson stat | 2.103567 |
| Prob(F-statistic) | 0.000000 | | |

| ADF-Unit root (constant and trend) - EXPENDITURES | | | | |
|---|---|---|---|---|
| Null Hypothesis: EXPENDITURES has a unit root | | | | |
| **Exogenous: Constant, Linear Trend** | | | | |
| Lag Length: 5 (Automatic - based on SIC, maxlag=10) | | | | |
| | | | t-Statistic | Prob.* |
| **Augmented Dickey-Fuller test statistic** | | | **-3.020672** | **0.1353** |
| Test critical values: | 1% level | | -4.118444 | |
| | 5% level | | -3.486509 | |
| | 10% level | | -3.171541 | |
| *MacKinnon (1996) one-sided p-values. | | | | |
| Augmented Dickey-Fuller Test Equation | | | | |
| Dependent Variable: D(EXPENDITURES) | | | | |
| Method: Least Squares | | | | |
| Date: 05/19/21 Time: 13:44 | | | | |
| Sample (adjusted): 2005Q4 2020Q3 | | | | |
| Included observations: 60 after adjustments | | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |

| ADF-Unit root (constant) - EXPENDITURES | | | | |
|---|---|---|---|---|
| Null Hypothesis: EXPENDITURES has a unit root | | | | |
| **Exogenous: Constant** | | | | |
| Lag Length: 1 (Automatic - based on SIC, maxlag=10) | | | | |
| | | | t-Statistic | Prob.* |
| **Augmented Dickey-Fuller test statistic** | | | **-1.032118** | **0.7368** |
| Test critical values: | 1% level | | -3.536587 | |
| | 5% level | | -2.907660 | |
| | 10% level | | -2.591396 | |
| *MacKinnon (1996) one-sided p-values. | | | | |
| Augmented Dickey-Fuller Test Equation | | | | |
| Dependent Variable: D(EXPENDITURES) | | | | |
| Method: Least Squares | | | | |
| Date: 05/19/21 Time: 13:45 | | | | |
| Sample (adjusted): 2004Q4 2020Q3 | | | | |
| Included observations: 64 after adjustments | | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |

| ADF-Unit root (constant) - first differences ADF-Unit root (constant) - EXPENDITURES | | | | |
|---|---|---|---|---|
| Null Hypothesis: D(EXPENDITURES) has a unit root | | | | |
| **Exogenous: Constant** | | | | |
| Lag Length: 0 (Automatic - based on SIC, maxlag=10) | | | | |
| | | | t-Statistic | Prob.* |
| **Augmented Dickey-Fuller test statistic** | | | **-4.212877** | **0.0013** |
| Test critical values: | 1% level | | -3.536587 | |
| | 5% level | | -2.907660 | |
| | 10% level | | -2.591396 | |
| *MacKinnon (1996) one-sided p-values. | | | | |
| Augmented Dickey-Fuller Test Equation | | | | |
| Dependent Variable: D(EXPENDITURES,2) | | | | |
| Method: Least Squares | | | | |
| Date: 05/19/21 Time: 13:37 | | | | |
| Sample (adjusted): 2004Q4 2020Q3 | | | | |
| Included observations: 64 after adjustments | | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |

| | | | | |
|---|---|---|---|---|
| EXPENDITURES (-1) | -0.078078 | 0.025848 | -3.020672 | 0.0039 |
| D(EXPENDITURES (-1)) | 0.548117 | 0.121303 | 4.518581 | 0.0000 |
| D(EXPENDITURES (-2)) | 0.141353 | 0.125786 | 1.123761 | 0.2663 |
| D(EXPENDITURES (-3)) | 0.136385 | 0.123817 | 1.101504 | 0.2757 |
| D(EXPENDITURES (-4)) | -0.430218 | 0.124398 | -3.458387 | 0.0011 |
| D(EXPENDITURES (-5)) | 0.391491 | 0.114019 | 3.433561 | 0.0012 |
| C | 345.7821 | 105.9048 | 3.265028 | 0.0019 |
| @TREND("2004Q2") | 3.561755 | 1.374445 | 2.591414 | 0.0124 |

| | | | |
|---|---|---|---|
| R-squared | 0.555230 | Mean dependent var | 74.36604 |
| Adjusted R-squared | 0.495357 | S.D. dependent var | 103.6487 |
| S.E. of regression | 73.63021 | Akaike info criterion | 11.55955 |
| Sum squared resid | 281913.2 | Schwarz criterion | 11.83880 |
| Log likelihood | -338.7866 | Hannan-Quinn criter. | 11.66878 |
| F-statistic | 9.273468 | Durbin-Watson stat | 2.037665 |
| Prob(F-statistic) | 0.000000 | | |

| | | | | |
|---|---|---|---|---|
| EXPENDITURES (-1) | -0.010664 | 0.010332 | -1.032118 | 0.3061 |
| D(EXPENDITURES (-1)) | 0.634267 | 0.091077 | 6.964042 | 0.0000 |
| C | 87.57555 | 58.63116 | 1.493669 | 0.1404 |

| | | | |
|---|---|---|---|
| R-squared | 0.442912 | Mean dependent var | 62.56380 |
| Adjusted R-squared | 0.424646 | S.D. dependent var | 115.9679 |
| S.E. of regression | 87.96405 | Akaike info criterion | 11.83747 |
| Sum squared resid | 471998.1 | Schwarz criterion | 11.93867 |
| Log likelihood | -375.7992 | Hannan-Quinn criter. | 11.87734 |
| F-statistic | 24.24894 | Durbin-Watson stat | 2.317283 |
| Prob(F-statistic) | 0.000000 | | |

| | | | |
|---|---|---|---|
| D(EXPENDITURES (-1)) | -0.379662 | 0.090119 | -4.212877 | 0.0001 |
| C | 28.35640 | 12.07162 | 2.349013 | 0.0220 |

| | | | |
|---|---|---|---|
| R-squared | 0.222554 | Mean dependent var | 7.420642 |
| Adjusted R-squared | 0.210015 | S.D. dependent var | 99.02030 |
| S.E. of regression | 88.01034 | Akaike info criterion | 11.82354 |
| Sum squared resid | 480240.8 | Schwarz criterion | 11.89100 |
| Log likelihood | -376.3532 | Hannan-Quinn criter. | 11.85011 |
| F-statistic | 17.74833 | Durbin-Watson stat | 2.266629 |
| Prob(F-statistic) | 0.000083 | | |

Source: Author's calculations

Table 2. Testing Cointegration of Time Series

**EG procedure: Long-run equation**

Dependent Variable: REVENUES

Method: Least Squares

Date: 05/17/21 Time: 21:12

Sample: 2004Q2 2020Q3

Included observations: 66

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 399.4008 | 215.5105 | 1.853277 | 0.0685 |
| EXPENDITURES | 0.987172 | 0.037534 | 26.30093 | 0.0000 |

| | | | |
|---|---|---|---|
| R-squared | 0.915315 | Mean dependent var | 5960.819 |
| Adjusted R-squared | 0.913991 | S.D. dependent var | 1152.953 |
| S.E. of regression | 338.1290 | Akaike info criterion | 14.51457 |
| Sum squared resid | 7317200. | Schwarz criterion | 14.58092 |
| Log likelihood | -476.9807 | Hannan-Quinn criter. | 14.54079 |
| F-statistic | 691.7387 | Durbin-Watson stat | 0.176797 |
| Prob(F-statistic) | 0.000000 | | |

**Testing of residual stationarity**

Null Hypothesis: REZIDUALI has a unit root

Exogenous: None

Lag Length: 0 (Automatic - based on SIC, maxlag=10)

| | | t-Statistic | Prob.* |
|---|---|---|---|
| **Augmented Dickey-Fuller test statistic** | | **-1.295715** | **0.1782** |
| Test critical values: | 1% level | -2.601024 | |
| | 5% level | -1.945903 | |
| | 10% level | -1.613543 | |

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(REZIDUALI)

Method: Least Squares

Date: 05/21/21 Time: 00:40

Sample (adjusted): 2004Q3 2020Q3

Included observations: 65 after adjustments

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|

**Johansen procedure**

Date: 05/18/21 Time: 17:59

Sample (adjusted): 2004Q4 2020Q3

Included observations: 64 after adjustments

Trend assumption: Linear deterministic trend

Series: REVENUES EXPENDITURES

Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

| Hypothesized No. of CE(s) | Eigenvalue | Trace Statistic | 0.05 Critical Value | Prob.** |
|---|---|---|---|---|
| **None** | **0.112772** | **9.512159** | **15.49471** | **0.3201** |
| At most 1 | 0.028558 | 1.854323 | 3.841466 | 0.1733 |

Trace test indicates no cointegration at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

| | | | | |
|---|---|---|---|---|
| REZIDUALI(-1) | -0.068816 | 0.053110 | -1.295715 | 0.1997 |
| R-squared | 0.022202 | Mean dependent var | | -8.269273 |
| Adjusted R-squared | 0.022202 | S.D. dependent var | | 141.9294 |
| S.E. of regression | 140.3450 | Akaike info criterion | | 12.74135 |
| Sum squared resid | 1260590. | Schwarz criterion | | 12.77480 |
| Log likelihood | -413.0938 | Hannan-Quinn criter. | | 12.75455 |
| Durbin-Watson stat | 1.642466 | | | |

| Hypothesized No. of CE(s) | Eigenvalue | Max-Eigen Statistic | 0.05 Critical Value | Prob.** |
|---|---|---|---|---|
| **None** | **0.112772** | **7.657836** | **14.26460** | **0.4146** |
| At most 1 | 0.028558 | 1.854323 | 3.841466 | 0.1733 |

Max-eigenvalue test indicates no cointegration at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):

| REVENUES | EXPENDITURES |
|---|---|
| -0.002923 | 0.003391 |
| 0.001500 | -0.000672 |

Unrestricted Adjustment Coefficients (alpha):

| | | |
|---|---|---|
| D(REVENUES) | -21.65451 | -20.55585 |
| D(EXPENDITU.) | -28.79337 | 2.074827 |

1 Cointegrating Equation(s): Log likelihood -774.6309

Normalized cointegrating coefficients (standard error in

| | | |
|---|---|---|
| | | parentheses)<br>REVENUES EXPENDITURES<br>1.000000 -1.160097<br>(0.11771)<br>Adjustment coefficients (standard error in parentheses)<br>D(REVENUES) 0.063294<br>(0.05130)<br>D(EXPENDITU.) 0.084161<br>(0.03083) |

Source: Author's calculations

Non-stationary time series are cointegrated if there exists a stationary linear combination among them. The condition for confirming cointegration is that the observed variables contain a trend, i.e., they are integrated with the same order of integration (Bahovec and Erjavec, 2009). In the observed model, such a combination was not confirmed, as the null hypothesis that there is no cointegration equation cannot be rejected. The test of the null hypothesis is based on comparing the Trace Statistic and the Max-Eigen Statistic at a significance level of 5%. As we can see in the previous table 2, the test value is lower than the critical value. Such a result indicates the absence of cointegration between public revenues and public expenditures, which corresponds to the results of the EG test.

From the perspective of our research, it is necessary to refer to the study by Hurić-Bjelan and Hadžiahmetović (2020), which analyzes external debt and fiscal sustainability in BiH, and is thus similar to the research in this dissertation. Upon reviewing this study, we primarily noted differences in methodological approach, data used, and time span. The main focus of Hurić-Bjelan and Hadžiahmetović (2020) is to consider the growth of BiH's external debt in relation to the trade deficit. The time horizon of their study is from 2004 to 2017. In contrast, our research focuses on the movement of public revenues and expenditures in BiH and evaluates the existence of long-term fiscal sustainability. The data we considered span from 2004 to 2020 and provide a more comprehensive view of fiscal policy sustainability, including the early effects of the COVID-19 pandemic on fiscal policy in BiH, which represent a structural shift that has not been studied before. Therefore, it is not surprising that, unlike Hurić-Bjelan and Hadžiahmetović (2020), our research finds the absence of a long-term cointegrating relationship between public revenues and expenditures, which is due to differences in method, data, and the structural shift that occurred during the period marked by the COVID-19 pandemic.

Given the absence of confirmed cointegration between the observed variables, the VAR model is estimated in the first differences of the stationary variables (Table 3). This practically means that the VAR model order is increased until the observed variables exhibit appropriate econometric characteristics, such as normal distribution, homoscedasticity, and the absence of autocorrelation.

The initial order of the VAR model within the Johansen procedure on which the cointegration tests are based is defined by the Schwarz information criterion (SC). The SC criterion suggests that the optimal lag is 1 (Table 3, column 1). Accordingly, the VAR estimation was performed in first differences (Table 3, column 2 ).

Following the obtained model, diagnostic tests are performed. It is important to note that the estimation of the model parameters is not as important, although the VAR model finds application in the estimation of general economic assumptions.

The main goal of the VAR model is to enable the analysis of the dynamics of observed variables, which we present below.

In line with this, an innovation analysis is applied, which primarily includes the analysis of the impulse response function (IRF) and the decomposition of variance. The advantage of the innovation analysis is found in the adequate interpretation of parameters and the simplicity of drawing conclusions about the dynamics of observed variables (Asteriou, 2006).

Table 3. Testing VAR model

**Selecting the optimal lag for VAR model**

VAR Lag Order Selection Criteria

Endogenous variables: DREVENUES DEXPENDITURES

Exogenous variables: C

Date: 05/18/22 Time: 20:03

Sample: 2004Q2 2020Q3

Included observations: 61

| Lag | LogL | LR | FPE | AIC | SC | HQ |
|---|---|---|---|---|---|---|
| 0 | -751.9595 | NA | 1.87e+08 | 24.71998 | 24.78919 | 24.74711 |
| **1** | **-740.3309** | **22.11331** | **1.45e+08** | **24.46987** | **24.67749*** | **24.55124*** |
| 2 | -738.7744 | 2.857887 | 1.58e+08 | 24.54998 | 24.89603 | 24.68560 |
| 3 | -738.2594 | 0.911837 | 1.77e+08 | 24.66424 | 25.14870 | 24.85411 |
| 4 | -726.3378 | 20.32538* | 1.37e+08* | 24.40452* | 25.02740 | 24.64863 |

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

**VAR estimation in first differences (REVENUES and EXPENDITURES) with one lag (based on the SC criterion)**

Vector Autoregression Estimates

Date: 05/19/22 Time: 21:25

Sample (adjusted): 2004Q4 2020Q3

Included observations: 64 after adjustments

Standard errors in ( ) & t-statistics in [ ]

| | DREVENUES | DEXPENDITU. |
|---|---|---|
| DREVENUES (-1) | 0.034149 | 0.009100 |
| | (0.13503) | (0.08495) |
| | [ 0.25289] | [ 0.10712] |
| DEXPENDITURES (-1) | **0.244991** | **0.615368** |
| | **(0.16214)** | **(0.10201)** |
| | **[ 1.51097]** | **[ 6.03243]** |
| C | 37.74966 | 28.19420 |
| | (19.4914) | (12.2629) |
| | [ 1.93673] | [ 2.29915] |
| R-squared | 0.052759 | 0.433290 |

**Variance decomposition of forecast errors in the VAR model**

Variance Decomposition of D REVENUES:

| Period | S.E. | DREVENUES | DEXPENDITUR. |
|---|---|---|---|
| 1 | 141.0183 | 100.0000 | 0.000000 |
| 2 | 143.0127 | 97.95460 | 2.045398 |
| 3 | 143.7246 | 97.12044 | 2.879555 |
| 4 | 143.9961 | 96.80348 | 3.196517 |
| 5 | 144.1000 | 96.68257 | 3.317431 |
| 6 | 144.1399 | 96.63630 | 3.363695 |
| 7 | 144.1551 | 96.61858 | 3.381419 |
| 8 | 144.1610 | 96.61179 | 3.388211 |
| 9 | 144.1632 | 96.60918 | 3.390815 |
| 10 | 144.1641 | 96.60819 | 3.391814 |

Variance Decomposition of DEXPENDITU.:

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

| | | |
|---|---|---|
| Adj. R-squared | 0.021702 | 0.414709 |
| Sum sq. resids | 1213056. | 480150.5 |
| S.E. equation | 141.0183 | 88.72046 |
| F-statistic | 1.698763 | 23.31937 |
| Log likelihood | -406.0047 | -376.3472 |
| Akaike AIC | 12.78140 | 11.85460 |
| Schwarz SC | 12.88260 | 11.95580 |
| Mean dependent | 52.89640 | 62.56380 |
| S.D. dependent | 142.5738 | 115.9679 |

| | |
|---|---|
| Determinant resid covariance (dof adj.) | 1.39E+08 |
| Determinant resid covariance | 1.26E+08 |
| Log likelihood | -778.4598 |
| Akaike information criterion | 24.51437 |
| Schwarz criterion | 24.71676 |
| Number of coefficients | 6 |

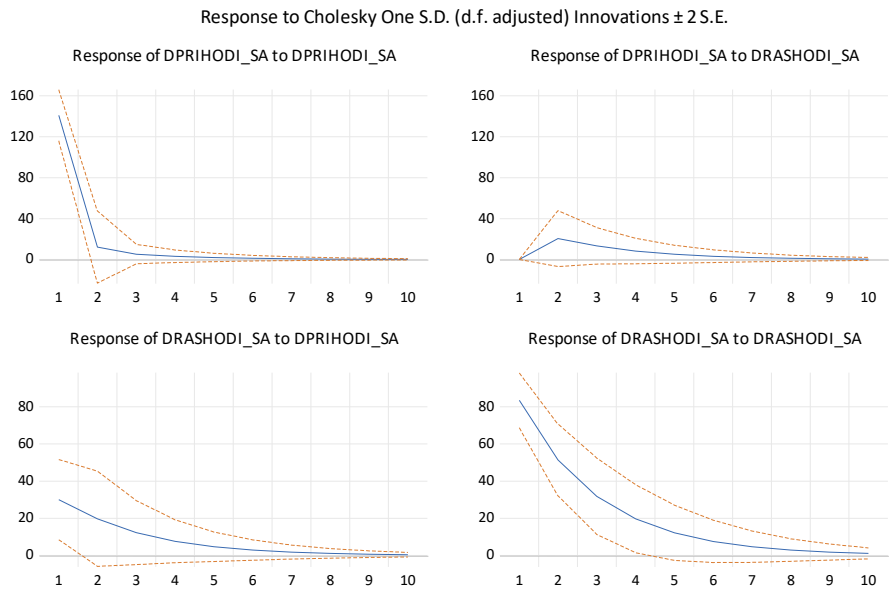
| Period | S.E. | DREVENUES | DEXPENDITUR. |
|---|---|---|---|
| 1 | 88.72046 | 11.45212 | 88.54788 |
| 2 | 104.4082 | 11.85069 | 88.14931 |
| 3 | 109.8312 | 11.95735 | 88.04265 |
| 4 | 111.8406 | 11.99311 | 88.00689 |
| 5 | 112.6014 | 12.00616 | 87.99384 |
| 6 | 112.8917 | 12.01107 | 87.98893 |
| 7 | 113.0029 | 12.01293 | 87.98707 |
| 8 | 113.0454 | 12.01365 | 87.98635 |
| 9 | 113.0617 | 12.01392 | 87.98608 |
| 10 | 113.0680 | 12.01403 | 87.98597 |

Cholesky Ordering: DREVENUES DEXPENDITURES

Source: Author's calculations

The impulse response function represents the dynamic response of endogenous variables to a unit shock of one of the variables in the model. In this way, an estimate is made of how changes in a particular variable through the dynamic structure of the model affect the current and future values of the considered endogenous variables (Kennedy, 2003). Given that the primary goal of this study is the analysis of fiscal sustainability, which largely depends on the mutual influence of public revenues and expenditures, in the following, we present the impulse responses of public revenues and expenditures to a change in the public revenue variable, as well as the impulse responses of public revenues and expenditures to a change in the public expenditure variable. The shocks are generated by a one-time increase in revenue or expenditure by one standard deviation compared to the average of the observed period of 10 quarters. In Graph 2, the impulse functions are represented by solid lines, while dashed lines represent deviations of two standard deviations. The abscissa represents time in quarters, and the ordinate represents the level of movement of the observed variable.

Graph 2. Impulse responses of variables




Source: Author's creations

As can be seen, a revenue shock has a positive impact on revenues, which persists even after six quarters. Rafael Ravnik and Ivan Žilič, who analyzed the effects of fiscal shocks in Croatia in 2011, come to a similar conclusion. The impact of

an expenditure shock on expenditures is of a permanent nature. The initial effect of the expenditure shock has a positive impact on the level of public revenues. However, the impulse function shows a decreasing trend after the second quarter, and the effect disappears by the end of the seventh quarter. We argue that this is due to the moderate indebtedness of the state. Given that the impulse function tends towards 0, we can point out the potential problem of public debt growth. In other words, if revenues do not respond to the growth of public expenditures, they are financed by borrowing. The effect of a revenue shock on expenditures, with a decreasing trend, persists at the level of 10 quarters. Based on this, we can conclude that expenditures do not grow proportionally to the growth of revenues, leaving room for generating a surplus. In the subsequent analysis (Table 3, column 3), we present the variance decomposition of forecast errors. Variance decomposition is a standard VAR tool that represents the share of certain shocks in explaining the variance of a particular variable in the next periods. Based on the obtained results, it is possible to present the relative share of each variable in explaining the variability of a certain variable in the future periods. Thus, the variability of each variable can be analyzed and divided into the part that is caused by the shock of the variable itself and the part that is caused by shocks in other variables (Bahovec and Erjavec, 2009). The obtained results provide insight into the importance of public revenues and expenditures in explaining their individual variability over time. The study used the Cholesky variance decomposition (Radunović, 2003; Ravnik and Žilić, 2011) of forecast errors of variables carried out for ten quarters.

Since the procedure for conducting variance decomposition according to the Cholesky decomposition can depend on the order of variables in the model, a variance decomposition was also performed with the reverse order of variables (Benazić, 2006). The variance decomposition estimation shows that the variation of the variable public revenues is mainly determined by shocks in the variable itself. Thus, the public revenues variable explains 100% of the variance of its forecast error in the first quarter. That share has a slight decreasing trend and amounts to 96.6% at the end of the tenth quarter. Conversely, considering the reverse order of variables, the public expenditures variable explains 88.5% of its variation in the first quarter. After ten quarters, that share amounts to nearly 87.9%. Similarly, the public revenues variable explains 11.4% in the first, and 12% of the variation of public expenditures in the tenth quarter. This indicates that the movement of public expenditures is not adequately aligned with the movement of public revenues.

## 5. CONCLUSION

Empirical results of the analysis indicate the absence of cointegration between total revenues and total expenditures, which in turn indicates the vulnerability of fiscal

sustainability in BiH. We arrived at this conclusion by considering the movements of time series of the observed variables and taking into account the highly fragmented fiscal structure of the BiH. Generally speaking, public expenditures in BiH are growing faster than public revenues, leading to the generation of budget deficits that are ultimately financed through borrowing. In support of this, it should be noted that the absolute amount of external debt increased by over 100% from 2005 to 2016. The total public debt as a share of GDP was around 35% in 2017. By the end of 2018, the public debt of BiH reached around 11.1 billion BAM, which is a decrease of about 2 percentage points relative to GDP compared to 2017. Taking into account the fact that capital expenditure has not been growing at a rate that would ensure significant economic growth, we return to the initial thesis about the vulnerability of fiscal policy.

Upon examining the structure of public expenditures over the observed time series (2004-2020), we can see that on average, 90% of them consist of allocations for public spending and social benefits. This to some extent indicates the possibility of the absence of a cointegrative relationship between public expenditures and public revenues, which we confirmed by applying EG and Johansen procedures, two of the most widely used cointegration tests. Another reason for concern in the context of Bosnia and Herzegovina's fiscal sustainability is found in the country's credit rating. Namely, according to Standard and Poor's, BiH has the worst credit rating compared to countries in the region and beyond, which directly affects the possibility of borrowing at favorable terms, and hence borrowing generates higher costs and related expenses.

The results of the analysis indicate the need for a comprehensive fiscal policy reform and the continuation of fiscal consolidation measures, aimed at ensuring long-term fiscal sustainability. In this context, it is important to note that after a period of generating a budget deficit in 2008-2014, fiscal consolidation measures were initiated in 2015, which brought some progress in the quality of public expenditure management and the overall fiscal balance. This was largely due to the increase in public revenues and limited possibilities for foreign financing. In addition, rationalizations implemented in the public sector have led to a downward trend in current expenditures viewed as a percentage of GDP.

In order to improve the fiscal position, it is necessary to sustainably continue efforts to reduce current spending and increase capital expenditures to promote growth. Strengthening the public financial management framework in this context is a key activity that contributes to enhancing overall fiscal discipline and transparency in public finances. This enables proactive use of fiscal policy instruments, which is essential for mitigating fiscal risks and ensuring fiscal sustainability.

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