

Maja Baćović<sup>1</sup>

## PUBLIC DEBT AND ECONOMIC GROWTH: TWO PUBLIC DEBT MANAGEMENT SCENARIOS IN MONTENEGRO

### ABSTRACT

*Growing public debt is one of the biggest challenges faced by both developing and developed economies. Available research indicates the negative impact of public debt growth on economic growth. Applying the OLS method to the panel data for the countries of the Western Balkans and the period from 1998 to 2019, we found that one percentage growth in public debt leads to a decrease in the GDP growth rate by 0.036 percentage points. In addition, an increase in public debt by one percentage point leads to a decrease in the productivity growth rate by 0.079 percentage points. The results of the research for Montenegro as a case (two scenarios of fiscal policy and the period 2021-2040), showed that, if expenditures remain intact, due to the small difference between the forecasted average GDP growth rate in the period 2021-2040 and interest rates (assumed constant), such a scenario will lead to a slower change in the public debt-to-GDP ratio (23% decrease in two decades). In addition, the cost of interest in public debt in this scenario over the entire period is higher than 2% of GDP. If the fiscal policy is changed toward a reduction in government spending, the short-term GDP growth rate would be slightly reduced, but both the expenditures for interest (less than 2% of GDP) and public debt (decrease of 63% in two decades) would be reduced significantly. Although reduced government spending will have a negative impact on GDP growth in the short run, the country will benefit in the long run as reduced public debt will have a positive impact on GDP and productivity growth.*

**Keywords:** *Public debt, Government expenditures, Economic growth*

**JEL:** *H6*

---

1 PhD, University of Montenegro, Faculty of Economics, Podgorica. E-mail: majab@ucg.ac.me, ORCID: <https://orcid.org/0000-0002-8865-3924>, Web of Science ResearcherID: <https://publons.com/researcher/R-1533-2019/> <https://www.ucg.ac.me/objava/blog/16989/objava/1>

## 1. INTRODUCTION

Public debt is often a country's large liability, as high debt servicing deprives the resources needed to support long-term economic development and build social and physical infrastructure. "Proper debt management should ensure that a government's financing needs and payment obligations are met at the lowest possible cost over the medium to long term, and that debt is assumed with a prudent degree of risk."<sup>2</sup>

The key idea in borrowing (deficit financing) is to finance the consumption (current and capital) which will stimulate economic growth, later providing growth of budget revenues by increasing the tax base, and therefore enable repayment of the incurred debt. Up to a certain level of public debt, economic benefits may occur. However, a problem arises when this is not the case. As in Casares (2015), "External public debt can have a nonlinear impact on economic growth. Thus, at low levels of indebtedness, an increase in the proportion of external public debt to GDP could promote economic growth; however, at high levels of indebtedness, an increase in this proportion could hurt economic growth." Although there are opinions that budget deficit and growth of public debt in certain conditions can have a positive effect on economic growth, the dominant view is that in the long run, the growth of public debt does not have a positive effect on economic growth. American economist James Madison considered "public debt as a public curse."<sup>3</sup> Romer (2001) emphasises "there is a widespread belief that a high and long-lasting budget deficit slows down economic growth, leading to a crisis."

The problem of public debt is not related only to developing countries. Developed countries are also facing the problem of growing public debt and efforts to reduce it. Reinhart et.al (2012), point out that, after the financial crisis at the end of the last decade, developed countries faced growing public debt, which made the issue of stabilising public debt central to Europe, Japan and the United States.

Public debt in Montenegro, after a reduction in 2007–2008 when the budget surplus was used to repay part of the debt, has been growing steadily since 2009, from 38.1% of GDP to 84.4% in 2020 (gross value of public debt was at the level of 105% of GDP in 2020)<sup>4</sup>. The consequences of growing public debt are high interest costs (2.64% of GDP in 2020), but also a reduction in the credit rating of Montenegro (credit rating was downgraded in March 2021 from B + / B to B, with a stable outlook<sup>5</sup>), which negatively affects interest rates, investments and long-term perspectives of economic growth. This indicates the importance of defining an appropriate public debt management strategy.

---

2 UNCTAD, 2016

3 Mankiw, 2009, p. 467

4 Source: Central bank of Montenegro (CBMN)

5 Standard & Poor's Credit rating agency

The following variables determine the ratio of public debt to GDP: real interest rate, GDP growth rate, the initial amount of debt and the ratio of the primary budget deficit and debt. The growth of public debt in relation to GDP is a consequence of the reduction in the GDP growth rate, the growth of real interest rates, and the growth of the primary deficit and the higher initial value of public debt, which entails higher interest costs.

In the case of Montenegro, given the monetary system, the impact on real interest rates and inflation rates is limited. Therefore, the public debt management approach can go in one of two directions (or a combination of both approaches): stimulating GDP growth and/or creating a primary budget surplus to repay public debt. This study analyses both approaches by applying two fiscal policy scenarios: the first, in which the same course of fiscal policy as during the last decade is implemented, while the public debt management strategy focuses on the GDP growth rate, and the second, in which the restrictive fiscal policy is pursued, leading to an increase in the primary fiscal surplus, which in combination with GDP growth, leads to a higher reduction in public debt.

The elaboration of the second scenario implies an analysis of the specific components of government spending in which reduction is possible. A significant part of public spending in Montenegro goes to social benefits (pensions, health care costs, social assistance), which on average (period 2006-2020) account for 27% of consolidated budget spending or 13% of GDP. Is it possible to reduce these expenditures if we know that Montenegro is in a phase of demographic ageing and that the costs of pension and health insurance will only increase and will definitely not decrease? Another option is to reduce the number of employees in the government administration and the health and education sectors, and/or reduce the salaries financed from the budget (which makes an average of 24% of consolidated budget spending in Montenegro, and 10% of GDP). In this way, if there is no transition of employment from the state to the private sector, domestic demand will decrease, which will consequently affect the volume of production in Montenegro, and thus GDP growth. The negative effect on economic growth will be partially mitigated by the fact that Montenegro is a highly imported economy, as a significant part of household consumption is realised through imports, so reducing household consumption will partly affect the decline in domestic production and partly reduce imports. The effect on GDP growth is determined by the strengths of the first and second determinants. Additional items in which expenditures can be reduced are transfers to institutions, and this approach is elaborated in this paper.

Applying the arithmetic method, we estimated changes in public debt in Montenegro under the scenario of unchanged fiscal policy and the scenario of restrictive fiscal policy (reduction of consumption).

To examine the impact of the reduction in government spending on GDP growth, we created a macroeconomic model of equilibrium in the commodity market (Keynesian model), in which government spending is an exogenous variable. The model allows us to examine the impact of government spending on GDP growth.

This study comprises four sections. The first section presents the basic postulates and the overview of the available results of previous research is presented in the second part. The third section analyses the impact of public debt on economic growth and productivity in Western Balkans, presents the model of equilibrium in the commodity market of Montenegro, budget revenues and expenditures in Montenegro in the period 2006-2020 and two scenarios of fiscal policy in the period 2021-2040. In this section we analyse the implications of different fiscal policy scenarios, after which conclusions and proposals for further research are presented.

## **2. Theoretical basis and literature review**

The literature and research on public debt are vastly available. We present only the selection. A study conducted by Calderon and Fuentes (2013) shows that growth prospects are reduced with high or growing government debt. Their analysis of a sample of a large number of countries in the period 1970-2010 shows a negative and strong effect of public debt on growth. Strong institutions and good domestic and internationally oriented policies partially mitigate this negative effect. The improved political environment and its interaction with public debt helped to explain the improved growth performance of industrialised and developing countries for the period 2001-2005 compared to 1991-1995. A study conducted on a sample of the Caribbean and South American countries showed that a sharp decline in public debt and an improvement in the political environment simultaneously boosted the per capita growth rate of 1.7% in the Caribbean and 2% in South America. A more conservative scenario that considers improved policy quality and reduced public debt leads to lower but still significant benefits for the Caribbean and South American growth, by 0.85% and 1.5%, respectively.

Dombi and Dedak (2019) show that public debt reduces long-run output but also that the burden of public debt is country-specific depending on the saving rate and population growth rate. Ramos-Herrera and Sosvilla-Rivero (2017) investigated the relationship between public debt and economic growth on a data set of 115 economies. They initially find that those countries with the lowest public debt achieve the highest economic growth, while the smallest growth rates are associated with the highest public debt. This conclusion was tempered when they analysed the countries by income level and found that low-income countries have different behaviour with respect to lower-middle, upper-middle and high-income countries.

Nur Hayati Abd, et al. (2019) conclude in their research that there is no mutual consensus on the relationship between public debt and economic growth. The relationship can be positive, negative or even non-linear. Mencinger, Aristovnik and Verbic (2014) examined the limit of public debt measured by the share in GDP in a sample of 25 EU member states and shown that in older member states, after public debt exceeds the threshold of 80-94% of GDP, it begins to show negative effects on economic growth. In the new EU members, the border is significantly lower, 53-54% of GDP. Petrakos, Artelaris and Kallioras (2020) show that the components of public debt that are related to infrastructure development, public goods provision and catching-up with more advanced countries have a positive impact on growth and convergence. A survey conducted by Gomez-Puig and Sosvilla-Rivero (2017), on a sample of Central and Peripheral Eurozone (EA) countries and the period 1961-2013 shows that public debt always has a long-term negative impact on the economic performance of EA countries, although its short-term effect may be positive depending on the country analysed. Silva (2020) studied the effect of Portuguese external debt for the period 1999–2019 and found that external debt was not allocated to positively and significantly increase economic growth. Based on the literature on the relationship between public debt and economic growth, Panizza and Presbitero (2013) conclude that theoretical models give ambiguous results, so the answer to this question is purely empirical. They add that, although a large number of studies confirm the negative connection between public debt and economic growth, in their opinion, that connection is not strong. In further research Panizza and Presbitero (2014), confirm the existence of a negative correlation between public debt and economic growth, but state that this relationship weakens or even disappears completely when they correct the model by endogeneity. Wheeler (1999) shows that “wealth falls as the government debt rises.” He further concludes that “an increase in government debt leads to decreases in interest rates, output, and the price level.” Balassone, Francese and Pace (2013) exploring the impact of public debt in Italy in the period 1861-2009 showed that the growth of public debt has a negative impact on the growth of per capita income and that public spending affects the reduction of income by discouraging investment. Ferreira (2009) in a study on a sample of 20 OECD member countries in the period 1988-2001, shows that there is a mutual causality between the growth of public debt and per capita income. Elmendorf and Scheiner (2017) show that “population ageing affects public debt growth for any given budget policy, and has implications for optimal debt, and thus for optimal policies.” From a macroeconomic perspective, they conclude that “an ageing population will reduce the number of workers relative to the total population, which means a drop in GDP per capita for any given amount of capital, productivity and labour force participation.

Lower fertility (but not increased longevity) also reduces labour growth, which reduces the savings needed to equip new workers with any amount of capital. Together, these two factors will reduce sustainable per capita consumption by a few decades from now by about 11% compared to what it would be if the population did not age.” Asteriou, Pilbeam and Pratiwi (2021) examined the relationship between public debt on both short and long-run economic growth, in a panel of selected Asian countries for the period 1980–2012 and show that an increase in government debt is negatively associated with economic growth in both the short and long-run. Kostarakos (2021) found evidence indicating the presence of a nonlinear relationship between debt and investment. Lee (2018), studying social expenditures in developed countries (34 OECD economies) and its impact on public debt find that the rise in public debt is not attributable to social expenditure.

A study of the effects of different fiscal policy directions in selected countries of Europe and Central Asia, conducted by the World Bank (2007), offers useful recommendations and conclusions. The study points to the effects of fiscal policy on economic growth through four dimensions: the effects of the budget deficit and fiscal consolidation on economic growth, the impact of public spending on growth, the impact of public policy quality, and the impact of expenditure and tax structures on growth. Fiscal adjustment is an integral part of economic policy in all countries in transition, as they have entered the transition process with high public spending and public debt. The World Bank study notes the experience of OECD countries in the process of fiscal adjustment, concluding that, in those countries where fiscal adjustment was aimed at increasing taxes and reducing public investment, it proved unsustainable, while examples, where the focus was on structural public finance reforms, are examples of sustainable structural adjustment policies. The analysis of the public spending in middle-income countries resulted in a similar conclusion. The size of public spending also affects economic growth. A high level of public spending leads to inefficient resource allocation, while the need to finance spending with higher taxes discourages investment, savings and innovation. The analysis indicates that in ECA countries with high government spending, most often accompanied by a high budget deficit, interest payments on debt have doubled (2.9% of GDP) compared to countries with lower government spending (1.4%). The study also suggests that public spending above 35% of GDP has a negative impact on economic growth. An increase in public spending by 1% leads to a decrease in the GDP growth rate by an average of 0.3-0.4% per year. This is particularly a characteristic of economies where public administration is inefficient, while unfavourable administration can significantly reduce negative effects. The structure of public spending is also an important factor that determines the developmental character of fiscal policy.

Costs aimed at increasing the efficiency of the use of productive resources are considered productive, as well as expenditures aimed at strengthening the protection of property rights, efficient legal system, lower transaction costs, etc. In contrast, high government expenditures, especially if they lead to bureaucratization and reduced efficiency of public administration, combined with high defence costs, are not stimulating for economic growth. Also, intensive social policy can have a demotivating effect on the labour market by reducing the motivation for productive economic activity. Research further shows that “productive” expenditures (education, infrastructure) are on average lower in economies where costs for basic government functions and social protection are higher. The tax system also affects growth. Progressive income tax demotivates investment. High tax rates on employees encourage employment in the grey economy. On the other hand, indirect taxes, as a value-added tax, have a less negative direct effect, because they do not demotivate investment and employment, although any growth leads to a decrease in disposable income for personal consumption and savings.

Grosu, Pintilescu and Zugravu (2021) studied governments reactions to the accumulation of debt from 11 CEECs, using annual data from 2000 to 2019, showing that only a few countries have pursued sustainable public debt policies.

### **3. Methods, results and key findings**

In order to investigate the impact of various public debt scenarios on GDP growth, as a first step, we estimated the impact of the changes in the level of public debt to GDP and labour productivity growth on a sample of six Western Balkan countries and the period from 1998 to 2019. Extended samples and the time frame were selected to provide more accurate and reliable results. As analysis of debt scenarios was done using Montenegro as a case, further research was focused on the empirical analysis of the government revenues, expenditures and public debt in Montenegro from 2006 to 2020. Applying the arithmetic approach, we forecasted budget revenues, expenditures and fiscal balance from 2021 to 2040, applying two sets of assumptions in two scenarios. This was followed by applying the macroeconomic model of equilibrium in the commodity market for Montenegro while using budget data forecasts, in order to assess the impact of two approaches in fiscal policy management on GDP growth.

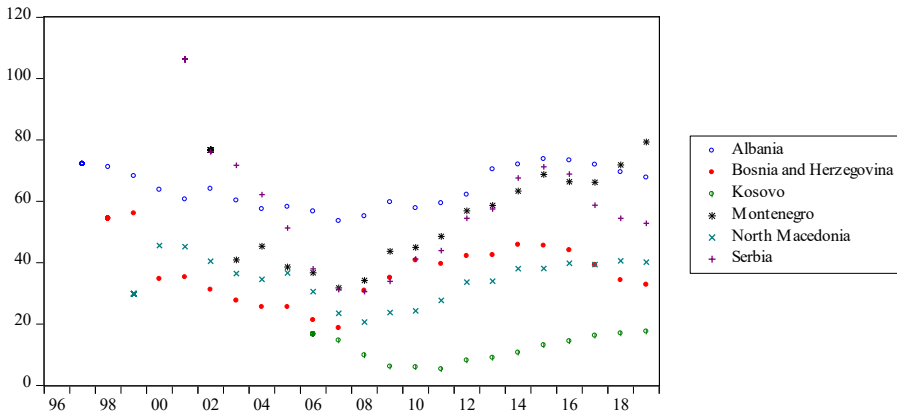


### 3.1. Public debt and economic growth in the Western Balkans

In order to analyse the impact of changes in the level of public debt on GDP growth, we conducted empirical research on a sample of six (five)<sup>6</sup> Western Balkan countries (Albania, Bosnia and Herzegovina, Northern Macedonia, Montenegro, Serbia and Kosovo), and the period from 1998 (2001)<sup>7</sup> to 2019. Data used in this research were extracted from the IMF Economic Outlook database and have annual frequency.

In all Western Balkan countries, after a slight decline in the first decade of this century, public debt (% of GDP) increased in the last decade (Graph 1). The largest public debt in 2019 (79.3% of GDP) was observed in Montenegro, while in Albania, Bosnia and Herzegovina and Serbia we observed a declining trend in recent years.

**Graph 1:** Public Debt (% GDP), Western Balkan countries, 1996-2019



Source: IMF

Applying the ordinary least squares (OLS) method to panel data (fixed effects), we assessed the impact of the public debt growth rate (the level of public debt was originally expressed in the value of fixed dollars in 2010)<sup>8</sup> on GDP growth rate as:

$$LY_{i,t} = c + \alpha LPD_{i,t} + \varepsilon_t, \quad (1)$$

Where  $LY_{i,t}$  - GDP growth rate in the country  $i$  in the period  $t$ ,  $LPD_{i,t}$  represents the growth rate of public debt in the country  $i$  in the period  $t$ ,  $c$  is a constant,  $\alpha$  is the coefficient of elasticity and  $\varepsilon_t$  is the standard error.

Applying the same methodological concept, we examined the impact of public debt growth on productivity growth in the Western Balkans, using a sample of five countries and the time period from 2001 to 2019.

6 Data for Kosovo were not available in all series

7 Based on available data

8 Data source: IMF Economic Outlook database (October 2020)



$$LLp_{i,t} = c + \beta LPD_{i,t} + \varepsilon_t, \quad (2)$$

where  $LLp_{i,t}$  represents labour productivity (GDP per person employed) in the country  $i$  in the period  $t$ ,  $\beta$  is the coefficient of elasticity (other as in the equation (1)).

Estimation results for equation 1, using data for the countries of the Western Balkans (Albania, Bosnia and Herzegovina, Northern Macedonia, Montenegro, Serbia and Kosovo), and the period from 1998 to 2019, are presented in Table 1.

**Table 1:** Impact of public debt growth on GDP growth, Western Balkans, 1998-2019 (panel data analysis)

Dependent Variable: DLOG(GDP US 2010)		
Method: Panel Least Squares		
Sample (adjusted): 1998 2019		
Cross-sections included: 6		
Total panel (unbalanced) observations: 111		
Variable	Coefficient	Std. Error
DLOG(PUBLIC DEBT US2010)	-0.036*	0.016
C	0.036***	0.002
*** p<.01, ** p<.05, * p<.1		

**Source:** Authors' calculation

The result of the estimated equation (1) shows that the impact of public debt growth has a statistically significant effect on the reduction of the GDP growth rate. The growth of public debt by one unit leads to a decrease in the GDP growth rate by 0.036 units.

Estimated results for equation 2 (sample of five countries) are presented in Table 2.

**Table 2:** Impact of public debt growth on productivity growth, Western Balkans, 2001-2019 (panel data analysis)

Dependent Variable: DLOG(PRODUCTIVITY)		
Method: Panel Least Squares		
Sample (adjusted): 2001 2019		
Cross-sections included: 5		
Total panel (unbalanced) observations: 92		
Variable	Coefficient	Std. Error
DLOG(PUBLIC DEBT US2010)	-0.079**	0.034
C	0.02***	0.004
*** p<.01, ** p<.05, * p<.1		

**Source:** Authors' calculation

The result of the estimated equation (2) shows that the impact of public debt growth has a statistically significant effect on reducing the productivity growth rate. The growth of public debt by one unit leads to a decrease in the productivity growth rate by 0.079 units (Table 2).

### 3.2. Fiscal policy and public debt in Montenegro

In order to assess the impact of different public debt management scenarios in Montenegro, the first step is to analyse the structure and dynamics of public finance. Therefore, we will present a detailed overview of the budget expenditures and revenues in Montenegro.

#### 3.2.1. Budget expenditures and revenues in Montenegro

Total budget revenues ( $TT$ ) in Montenegro consist of *basic revenues* ( $T_i T_i$ ): taxes ( $T$ ) - (personal income tax, corporate income tax, real estate transfer tax, value-added tax, excise duties, international trade tax and transactions and other taxes), contributions ( $DD$ ) – (pension and disability insurance, health insurance, unemployment insurance and other contributions), fees ( $T_x T_x$ ), benefits ( $NN$ ), other income ( $OO$ ), receipts from loan repayment ( $K_i K_i$ ) and donations ( $T_d T_d$ ); and *other revenues* ( $T_o T_o$ ): income from sale of assets ( $I I$ ), loans and credits from domestic and foreign sources ( $K_r K_r$ ).<sup>9</sup>

$$T = T_i + T_o$$

$$T_i = T + D + T_x + N + O + K_i + T_d$$

$$T_o = I + K_r$$

In the structure of budget revenues of Montenegro, the tax revenues represent the largest share (23.2% of GDP, average per year in the period 2006-2020), followed by the contributions (11.6% of GDP), while the other revenues account for an average of 3.3% of GDP. Total basic revenues account for an average of 38% of GDP. Revenues from the sale of assets are on average equal to 0.6% of GDP, and loans account for 12.7% of GDP on average per year. With growing debt financing, total revenues, in relation to GDP, increased from 41% in 2005 to 71% in 2020 (Table 3).

9 Source: CBMN (<https://www.cbcm.me/me/statistika/statisticki-podaci/fiskalni-sektor>)

**Table 3:** Budget revenues in Montenegro, % of GDP, 2006-2020.

	Taxes	Contributions	Fees, benefits, other income, loan repayment receipts, dona- tions	Basic revenues	Revenues from the assets sale	Loans	Total revenues
	% GDP	% GDP	% GDP	% GDP	% GDP	% GDP	% GDP
2006	23.0	11.8	4.9	39.7	0.9	1.1	41.7
2007	26.3	11.4	4.2	42.0	1.0	0.4	43.4
2008	26.7	11.0	3.9	41.5	0.8	0.3	42.7
2009	23.8	10.3	5.2	39.3	3.6	8.6	51.4
2010	21.6	12.2	2.8	36.6	0.2	7.2	44.0
2011	21.6	10.8	2.3	34.7	0.1	7.2	42.0
2012	21.6	11.4	2.4	35.4	0.1	10.1	45.6
2013	22.5	11.9	2.7	37.0	0.4	9.9	47.3
2014	24.1	12.8	2.2	39.1	0.2	15.5	54.8
2015	22.0	12.0	2.3	36.3	0.2	22.8	59.3
2016	22.4	11.7	3.5	37.6	0.1	16.4	54.1
2017	22.6	11.5	2.3	36.4	0.1	14.3	50.8
2018	22.9	11.2	3.3	37.4	0.3	24.1	61.9
2019	23.7	11.0	3.4	38.1	0.1	20.5	58.7
2020	23.0	12.7	3.4	39.1	0.2	32.1	71.4
Avg	23.2	11.6	3.3	38.0	0.6	12.7	51.3

**Source:** Authors' calculation based on CBMN data (<https://www.cbcg.me/me/statistika/statisticki-podaci/fiskalni-sektor>)

Total budget expenditures ( $GG$ ) consist of *current expenditures* ( $G_t G_t$ ): gross wages and contributions paid by the employer ( $W_b W_b$ ), other personal income ( $W_l$ ), expenditures for materials and services ( $M M$ ), current maintenance ( $TO TO$ ), interest ( $I_r I_r$ ), rent ( $R R$ ), subsidies ( $SS$ ), other expenditures ( $G_x G_x$ ), capital expenditures in the current budget ( $G_{kt} G_{kt}$ ), while *consolidated expenditures* ( $G_k G_k$ ) in addition to current ones consist of: transfers for social protection ( $T_r T_r$ ), transfers to institutions, individuals and NGOs sector ( $T_{ri} T_{ri}$ ), capital budget-capital expenditures ( $G_k G_k$ ), loans and credits ( $KK$ ), reserves, repayment of guarantees ( $PB_{gar} PB_{gar}$ ) and repayment of liabilities from the previous period (increase / decrease of liabilities) – ( $\Delta G_{t-1} \Delta G_{t-1}$ ). Total budget expenditures are equal to consolidated expenditures increased by repayment of debts to residents and non-residents ( $\Delta PB \Delta PB$ ), repayment of liabilities from the previous period and expenditures for the purchase of securities ( $G_{fi} G_{fi}$ ). The *cash surplus/deficit* is equal to the difference between source revenues and consolidated expenditures, while the *primary balance* is equal to the cash balance adjusted for repayment of liabilities from the previous period and interest paid.

$$G = G_t + G_k$$

$$G_t = W_b + W_l + M + TO + I_r + R + S + G_x + G_{kt}$$

$$G_k = G_t + T_r + T_{ri} + G_k + K + PB_{gar} + \Delta G_{t-1}$$

$$G_u = G_k + \Delta PB + G_{fi}$$

In the structure of budget expenditures of Montenegro, the most significant items are the costs of gross wages (average annual 10.3% of GDP from 2006-2020) and transfers for social protection (13% of GDP). Debt repayment costs to residents and non-residents increase with the growth of public debt, and on average account for 9% of GDP (the difference between total expenditures and consolidated expenditures). The average annual cash deficit is 3.5% of GDP, while gross public debt has increased from 32.3% to 105.1% of GDP in 2020. Total expenditures increased from 41% in 2006 to 65% of GDP in 2020 (Table 4).

**Table 4:** Budget expenditures, deficit and public debt in Montenegro, % GDP, 2006-2020.

	Gross wages and contributions paid by the employer	Expenses for materials and services	Interest	Other current expenditures	Total current expenditures	Transfers for social protection	Transfers to individual NGOs and the public sector	Capital budget-capital expenditures	Other expenditures	Consolidated expenditures	Total expenditures	Cash surplus/deficit	Public debt (gross)
	% GDP	% GDP	% GDP	% GDP	% GDP	% GDP	% GDP	% GDP	% GDP	% GDP	% GDP	% GDP	% GDP
2006	9.8	5.2	1.1	4.1	20.1	12.0	2.2	0.0	2.0	36.3	41.1	3.4	32.3
2007	9.5	5.1	1.0	2.7	18.4	11.1	2.1	3.1	0.7	35.4	41.4	6.6	27.4
2008	8.9	3.7	0.7	4.9	18.2	11.2	6.9	2.4	2.4	41.0	45.0	0.6	28.8
2009	8.7	3.7	0.8	4.0	17.1	13.8	6.8	3.8	2.0	43.5	49.5	-4.2	38.1
2010	9.1	3.6	1.0	3.8	17.4	13.5	5.6	2.0	1.5	40.1	47.0	-3.5	40.6
2011	11.4	3.4	1.4	3.2	19.4	13.9	2.7	2.1	2.4	40.4	45.4	-5.7	45.4
2012	11.8	4.8	1.8	2.6	21.0	15.1	1.0	2.4	2.4	41.9	46.7	-6.5	53.4
2013	11.0	2.3	2.0	2.7	18.0	14.4	2.8	2.3	5.9	43.4	48.1	-6.4	57.5
2014	11.2	2.4	2.2	4.3	20.1	14.2	2.9	2.2	2.9	42.2	54.8	-3.1	59.9
2015	10.5	2.3	2.2	3.0	18.0	13.3	3.7	6.5	2.2	43.9	58.7	-7.6	66.2
2016	10.7	2.3	2.1	3.6	18.7	14.0	4.3	1.6	2.0	40.7	54.2	-3.1	64.4
2017	10.4	2.2	2.3	2.8	17.7	12.5	3.9	6.4	1.8	42.3	50.6	-5.8	64.2
2018	9.9	2.4	2.1	4.2	18.6	11.7	4.5	5.2	1.7	41.7	58.1	-4.2	70.1
2019	9.6	2.2	2.1	4.2	18.1	11.2	4.4	5.5	1.8	41.0	52.4	-2.9	76.5
2020	11.9	2.7	2.6	3.2	20.5	13.3	6.7	5.3	3.3	49.1	65.0	-10.0	105.1
<b>Avg</b>	<b>10.3</b>	<b>3.2</b>	<b>1.7</b>	<b>3.6</b>	<b>18.7</b>	<b>13.0</b>	<b>4.0</b>	<b>3.4</b>	<b>2.3</b>	<b>41.5</b>	<b>50.5</b>	<b>-3.5</b>	

**Source:** Authors' calculation based on CBMN data

### 3.2.2. Two scenarios of public debt management - empirical results

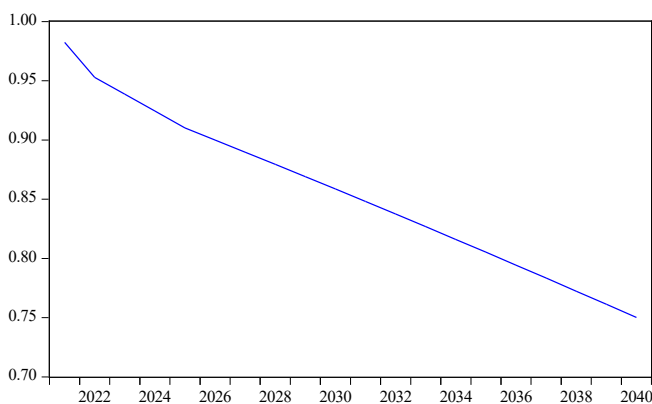
In the analysis of the impact of the two scenarios of public debt management in Montenegro, we start from the assumption of uniform (unchanged) average tax rates and contribution rates during the analysed period and other revenues (23.5%, 11.6% and 3.3% of GDP, respectively). On the expenditure side, transfers for social protection (pension insurance, health care costs, unemployment insurance) are also unchanged in relative terms (in relation to GDP), due to the assumption of population ageing and its impact on this expenditure category. Also, due to the importance of long-term development, capital expenditures of the budget are also uniform compared to the previous period.

The key “flexible” variables used in this study to define different scenarios are the gross wage costs of public sector employees and transfers to institutions, which are reduced in Scenario 2 by 1% of GDP compared to Scenario 1 (uniform fiscal policy).

An additional assumption is that in the period 2021-2040, expenditures for paid guarantees are equal to zero, as well as additional government borrowing to finance current or capital spending, except in conditions when borrowing is necessary to service the existing public debt. Forecasted fiscal indicators were presented in Table 11-13 (annexe).

The dynamics of public debt (% GDP) in scenario 1 is shown in Graph 2. The application of scenario 1 would result in a reduction of public (net) debt from 98% of GDP in 2021 to 75% in 2040.

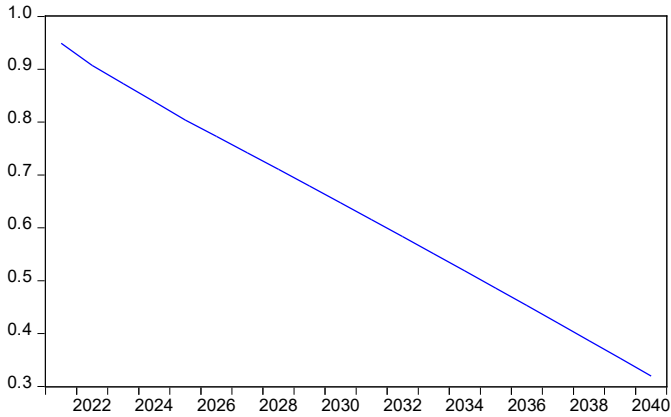
**Graph 2:** Public debt, % GDP (scenario 1)



Source: Authors' calculation

Applying Scenario 2, the share of public debt in GDP decreases to 31.9% in 2040 (graph 3).

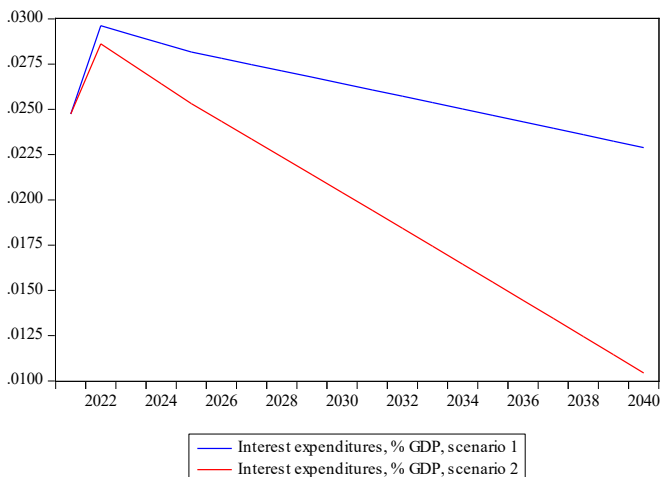
**Graph 3:** Public debt, % GDP (scenario 2)



**Source:** Authors' calculation

The scenarios of unchanged and the restrictive fiscal policy lead to different interest costs based on the public debt of Montenegro. While in the first case (Scenario 1), interest expenditures fall slowly and are in average equal to 2% of GDP, in the second scenario (restrictive fiscal policy), interest expenditures gradually fall to 1% in 2040 (Graph 4). Also, as public debt (% GDP) decreases significantly in the second scenario, this indicates the justification for preferring public debt management policies focused on reducing government spending.

**Graph 4:** Interest expenditures, % GDP, Scenario 1-2



**Source:** Authors' calculation

### 3.2.3. Macroeconomic model of equilibrium in the commodity market

In order to estimate the impact of estimated government expenditures in both scenarios (presented in section 3.3) to GDP growth, we estimated the macroeconomic model of equilibrium in the commodity market (Keynesian type) for Montenegro using data from 2006 to 2020, and later estimated forecasted values from 2021 to 2040.

The model is defined as follows:

$$Y = C + G + I + Z + Ex - Im \quad Y = C + G + I + Z + Ex - Im \quad (3)$$

$$C = c_0 + c_1 Y^d \quad C = c_0 + c_1 Y^d \quad (4)$$

$$Im = d_0 + d_1 Y \quad Im = d_0 + d_1 Y \quad (5)$$

$$Y^d = Y - T + Tr \quad Y^d = Y - T + Tr \quad (6)$$

where: Y – gross domestic product; C – consumption of households; G – government consumption; I – gross investment; Z – stock change; Ex – exports of goods and services; Im – imports of goods and services; T – taxes and contributions; Tr – transfers to the households,  $c_0, c_1, d_0, d_1$  - parameters.

Variables (endogenous and exogenous) in the model are presented in Table 5.

**Table 5:** Variables in the model

Variable	Status
Eq1 GDP, current prices, € 000	Endog
Exog Gross fixed capital formation, current prices, 000	Exog
Exog Exports of goods and services, current prices, 000	Exog
Eq2 Household consumption, current prices, 000	Endog
Exog Government consumption, current prices, 000	Exog
Exog Disposable income, current prices, 000	Exog
Eq3 Imports of goods and services, current prices, 000	Endog
Exog Change in inventories, current prices, 000	Exog
Exog Taxes and contributions, current prices, 000	Exog
Exog Social Protection Transfers, 000	Exog

The values of the parameters estimated in equation (4) - consumption function, are shown in Table 6. The estimated results show that one point increase in disposable income leads to growth in personal consumption for 0.683 points, while autonomous personal consumption is 936.5 million €.

**Table 6:** Consumption function

Dependent Variable: HOUSEHOLDS CONSUMPTION		
Method: Least Squares		
Sample: 2006 2020		
Included observations: 15		
Variable	Coefficient	Std. Error
DISPOSABLE INCOME	0.683***	0.052
C	936515.3***	147109,1
*** p<.01, ** p<.05, * p<.1		

**Source:** Authors' calculation



The values of the parameters estimated in equation (5) - import function, are shown in Table 7. The estimated results show that one unit growth in GDP leads to import growth by 0.486 units, while autonomous import is 645.5 million €.

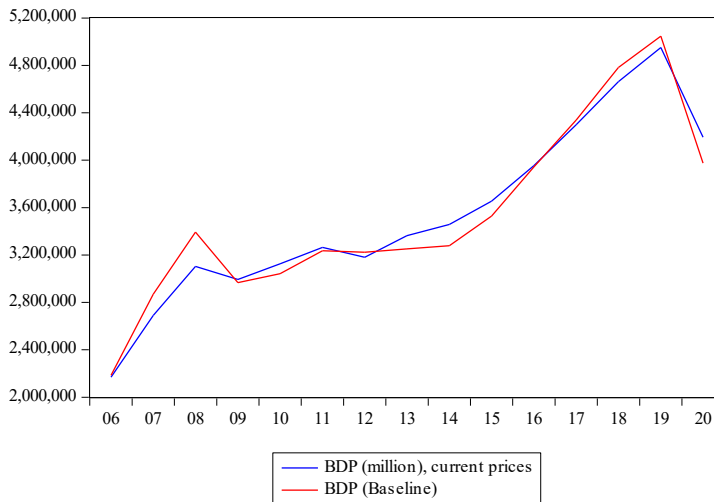
**Table 7:** Import function

Dependent Variable: IMPORTS OF GOODS AND SERVICES			
Method: Least Squares			
Sample: 2005 2020			
Included observations: 15			
Variable	Coefficient	Std. Error	
GDP	0.486***	0.097	
C	645545.3*	352040.5	
*** p<.01, ** p<.05, * p<.1			

**Source:** Authors' calculation

In relation to the official data for GDP in the period 2006-2020, the results obtained by applying the model deviate by an average of 0.1%, which indicates the reliability of the model (Graph 5).

**Graph 5:** Deviation of estimated and actual data - GDP (000 €, current prices)



**Source:** Authors' calculation

After the budget revenues and expenditures were forecasted, the exogenous value of the government consumption was used to assess two different scenarios of GDP growth in Montenegro from 2021 to 2040.

### 3.2.3.1. Scenario 1: Growth of exogenous variables at the average rate in the period 2006-2020

Applying the previously estimated macroeconomic model of the equilibrium in the commodity market (section 3.3.1), we introduced assumptions for all exogenous variables that determine GDP growth. Other than government consumption, which value is defined in two scenarios of fiscal indicators forecast, for all other variables we assume that its growth rate is equal to its average value from 2006 to 2020. Therefore, the value of these variables that have exogenous status in the model (gross investment, inventories, exports) is determined with the average annual share in GDP in the period 2006-2020, while the real GDP growth rate used to estimate their values are as follows: 9% (2021), 5.5% (2022), 3.5% (2023-2025) and 3% (2026-2040). The value of endogenous variables (household consumption, imports) was estimated on the basis of estimated functions of consumption and imports.

The assumptions in the model (scenario 1) are based on the average values of the corresponding variables in the period 2006-2020 and the projected GDP trend explained above. Fiscal policy is unchanged compared to the period 2006-2020, with no reductions in any component of spending (Table 8).

**Table 8:** Assumptions

Variable	Status	Description
Gross fixed capital formation, current prices, 000	Exog	25.2% of GDP
Exports of goods and services, current prices, 000	Exog	39.8% of GDP
Government consumption, current prices, 000	Exog	109% of current government expenditures
Disposable income, current prices, 000	Exog	Average GDP growth rate 2021-2040 - 3.4%
Change in inventories, current prices, 000	Exog	1.5% of GDP
Taxes and contributions, current prices, 000	Exog	33.5% of GDP
Transfers for social protection, 000	Exog	13% of GDP

A detailed overview of the trends in budget revenues, expenditures, balances (surplus/deficit) and public debt in Scenario 1 is shown in Tables 11-12 (Appendix).

Applying the model presented in section 3.3.1, with exogenously defined value of government spending in accordance with the fiscal policy defined in scenario 1, the dynamics of GDP in Montenegro in the period 2021-2040 was estimated. The average GDP growth rate in the period 2021-2040 is equal to 3.5%. The absolute values of GDP and expenditure components are presented in Table 9.

**Table 9:** GDP and expenditure components (€ 000), scenario 1, 2021-2040

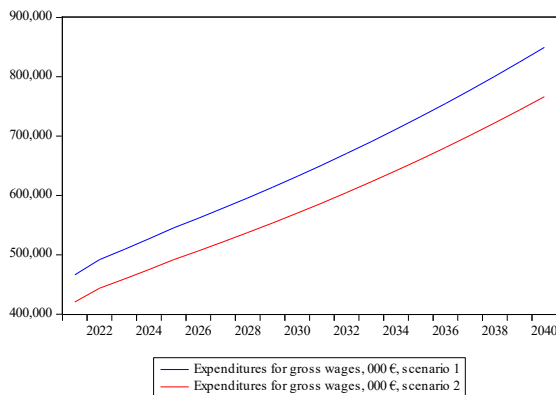
	GDP	Households consumption	Government consumption	Investment	Stock change	Exports	Imports
2021	4,521,023	3,389,114	939,398	1,151,789	68,559	1,819,096	2,846,933
2026	5,384,511	3,891,377	1,098,631	1,387,662	82,599	2,191,625	3,267,385
2031	6,202,504	4,362,010	1,261,047	1,608,681	95,755	2,540,694	3,665,684
2036	7,149,332	4,907,602	1,447,177	1,864,902	111,006	2,945,361	4,126,717
2040	8,013,077	5,406,008	1,615,428	2,098,964	124,938	3,315,030	4,547,293

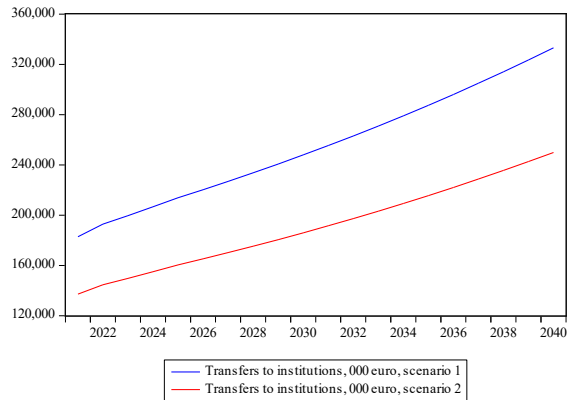
Source: Authors' calculation

### 3.2.3.2. Scenario 2: Reduction of government spending through reduction of gross salaries and transfers to institutions; growth of other exogenous variables at the average rate in the period 2006-2020

The assumptions in the model (scenario 2) are based on the average values of the corresponding variables in the period 2006-2020 and the projected GDP trend explained in the previous section. Fiscal policy is restrictive compared to the period 2006-2020 (reduction of gross salaries and transfers to institutions by 1% of GDP, respectively). There is also the possibility of reducing the category of “other current expenditures”, which average 6.7% of GDP, which can also be considered as an alternative in further research.

The differences in the values of expenditure budget categories in the scenarios of unchanged fiscal policy (1) and restrictive fiscal policy (2) are shown in Graphs 6-7.

**Graph 6:** Expenditures for gross salaries, 000 €, scenario 1-2

**Graph 7:** Graph 7. Transfers to institutions, 000 €, scenario 1-2

A detailed overview of budget revenue trends in Scenario 2 is presented in Table 11 (Appendix) and the trends in budget expenditures, balances (surplus / deficit) and public debt in Scenario 2 in Table 13 (Appendix).

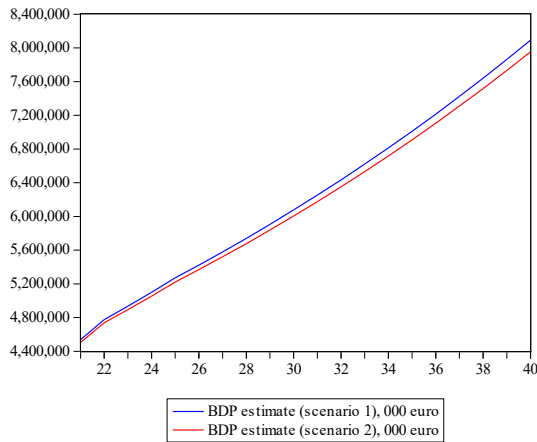
Applying the model presented in section 3.3.1, with an exogenously defined value of government spending in accordance with the fiscal policy defined in scenario 2, dynamics of GDP in Montenegro in the period 2021-2040 was estimated. The average GDP growth rate in the period 2021-2040 is equal to 3.41%. The absolute values of GDP and expenditure components are presented in Table 10.

**Table 10:** GDP and expenditure components (€ 000), scenario 2, 2021-2040

	GDP	Households consumption	Government consumption	Investment	Stock change	Exports	Imports
2021	4,521,023	3,389,114	939,398	1,151,789	68,559	1,819,096	2,846,933
2026	5,330,092	3,891,377	1,017,716	1,387,662	82,599	2,191,625	3,240,887
2031	6,124,576	4,362,010	1,145,176	1,608,681	95,755	2,540,694	3,627,740
2036	7,041,607	4,907,602	1,286,999	1,864,902	111,006	2,945,361	4,074,263
2040	7,876,029	5,406,008	1,411,650	2,098,964	124,938	3,315,030	4,480,562

**Source:** Authors' calculation

The scenarios of the uniform and the restrictive fiscal policy lead to different GDP in Montenegro (Graph 8), due to the reduction of government spending in the second scenario, although the difference is not high as for all other exogenous variables assumptions were identical. The average annual GDP growth rate in scenario 1 is 3.5%, in scenario 2 it is 3.41%.

**Graph 8:** GDP (000 €), scenarios 1 and 2

**Source:** Authors' calculation

#### 4. CONCLUSION

Growing public debt is one of the biggest challenges faced by both developing and developed economies. Available research indicates the negative impact of growing public debt on economic growth. As in Casares (2015), “at low levels of indebtedness, an increase in the proportion of external public debt to GDP could promote economic growth; however, at high levels of indebtedness, an increase in this proportion could hurt economic growth.”

In all Western Balkan countries, after a slight decline in the first decade of this century, public debt (% of GDP) increased in the last decade, with a slight recovery in some countries in recent years. The highest and growing public debt in relation to GDP was observed in Montenegro.

Applying the OLS method on panel data using a sample of Western Balkan countries and the period from 1998 to 2019, we found that the growth in public debt by one unit leads to a decrease in the GDP growth rate by 0.042 units. Also, an increase in public debt by one unit leads to a decrease in the productivity growth rate by 0.086 units.

The results of the research (using Montenegro as a case) showed that the continuation of the fiscal policy approach implemented in the last decade (borrowing approach to finance expenditures) in the period from 2021 to 2040, due to the small difference between the average GDP growth rate (3.5%) and the interest rate (3.21%) leads to a slow change in the ratio of public debt and GDP during the analysed period (98% in 2021 and 75% at the end of the period). If the course of fiscal policy changes in the direction of reducing government spending, public debt would be reduced to 31.9%

of GDP in 2040. Although due to reduced government spending, GDP growth will slow down as a consequence of a decline in aggregate demand, a 1% reduction in public debt will have a positive impact on GDP (0.36%) and productivity (0.8%) growth in the long run. This indicates the justification for preferring a public debt management policy focused on reducing government spending.

Further research should incorporate more variables relevant for economic growth and productivity, but also impact from fiscal policy to them, so the wider picture of the prospects of various public debt management policies can be assessed.

## REFERENCE:

1. Asteriou, D, K Pilbeam, and C.E. Pratiwi. (2021). "Public debt and economic growth: panel data evidence for Asian countries." *Journal of Economics and Finance*, 45 270-287.
2. Bacovic, Maja. (2007). "Demographic Changes in transition countries: Opportunity or Obstacle for Economic Growth? Case of Montenegro." *European Research Studies*, XI (3-4) 31-44.
3. Balassone, Fabrizio, Maura Francese, and Angelo Pace. (2013). *Public Debt and Economic Growth in Italy*. Economic History Working Paper, 11, Bank of Italy.
4. Baro, J Robert. (1998). *Macroeconomics, 5th edition*. Cambridge, Massachusetts; London, England: The MIT Press.
5. Blanchard, Olivier. 2012. *Macroeconomics, 5th ed*. Pearson/Prentice Hall.
6. Calderon, Cesar, and Rodrigo J Fuentes. (2013). *Government Debt and Economic Growth*. IDB Working paper series No. IDB-WP-424, Chile: Inter-American Development Bank.
7. Casares, Enrique R. (2015). "A relationship between external public debt and economic growth." *Estudios Economicos*, 30(2).
8. Dombi , Akos, and Istvan Dedak. (2019). "Public debt and economic growth: what do neoclassical growth models teach us?" *Applied Economics*, 51(29) 3104-21.
9. Elmendorf, Douglas W., and Louise M. Sheiner. (2017). "Federal Budget Policy with and Aging Population and Persistently Low Interest Rates." *Journal of Economic Perspectives*, 31(3) 175-194.

10. Ferreira, Maria Candida. (2009). *Public debt and economic growth: a Granger causality panel data approach*. UECE - Working Papers 24/2009/DE/UECE, ISEG - Departamento de Economia.
11. Gómez-Puig, M, and S Sosvilla-Rivero. (2017). *Public debt and economic growth: Further evidence for the euro area*. Working Paper 2017/15, Barcelona: Research Institute of Applied Economics.
12. Grosu, Alexandra-Claudia, Carmen Pintilescu, and Bogdan Zugravu. (2021). "Trends in public debt sustainability in Central and Eastern EU countries." *Post-Communist Economies*.
13. Kostarakos, Ilias. (2021). "Public debt and aggregate investment in the EU." *Applied Economic Letters*.
14. Lee, Insook. (2018). "Is social expenditure responsible for recent rise in public debt in OECD countries?" *Applied Economics Letters*, 25(1) 43-46.
15. Lee, Ronald D. (2014). "Macroeconomic Consequences of Population Aging in the United States: Overview of a National Academy Report." *American Economic Review: Papers & Proceedings*, 105(5) 234-239.
16. Maestas, Nicole, Kathleen J. Mullen, and David Powell. (2016). "The Effect of Population Aging on Economic Growth, the Labor force and Productivity." *NBER Working Paper Series*. Cambridge, MA: National Bureau of Economic Research, July.
17. Mankiw, Gregory. (2009). *Macroeconomics, 7e*. Worth Publishers.
18. Mencinger, Jernej, Aleksander Aristovnik, and Miroslav Verbic. 2014. "The Impact of Growing Public Debt on Economic Growth in the European Union." *Amfiteatru Economic Journal*, 16(35) 403-414.
19. Nur Hayati Abd, Rahman, Ismail Shafinar, and Ridzuan Abdul Rahim. (2019). "How does public debt affect economic growth? A systematic review." *Cogent Business & Management*, 6(1) 1-16.
20. Panizza, Ugo, and Andrea F Presbitero. (2013). "Public debt and economic growth in advanced economies: A survey." *Swiss Journal of Economics and Statistics*, 149 175-204.
21. Panizza, Ugo, and Andrea F Presbitero. (2014). "Public debt and economic growth: Is there a causal effect?" *Journal of Macroeconomics*, 41 21-41.
22. Petrakos, George, Panagiotis Artelaris, and Dimitris Kallioras. (2020). "Convergence and public debt in the European Union: An overlooked trade-off?" *Regional & Federal Studies*.



23. Ramos-Herrera, María del Carmen, and Simón Sosvilla-Rivero. (2017). “An empirical characterization of the effects of public debt on economic growth.” *Applied Economics*, 49(35) 3495-3508.
24. Reinhart , Carmen M, Vincent R Reinhart, and Kenneth S Rogoff. (2012). “Public Debt Overhangs: Advanced Economy Episodes Since 1800.” *Journal of Economic Perspectives*, 26(3) 69-86.
25. Romer, David. (2001). *Advanced Macroeconomics*, 2e. McGraw-Hill Higher Education.
26. Silva, J. 2020. “Impact of public and private sector external debt on economic growth: the case of Portugal.” *Eurasian Economic Review*, 10 607-634.
27. The World Bank. 2017. “Montenegro Policy Notes (2017).” Washington, DC.
28. UNCTAD. (2016). “Managing Public Debt.” *United Nations Conference on Trade and Development*, 14. [https://unctad.org/system/files/official-document/iaosmisc200520\\_en.pdf](https://unctad.org/system/files/official-document/iaosmisc200520_en.pdf).
29. Varoudakis, A, L Kasek , T Pushak, A Ryonca, E Skrok, and Tiongs. (2007). “Do Public Finance Systems Matter for Growth?” In *Fiscal Policy and Economic Growth, Lessons for Eastern Europe and Central Asia*. The World Bank.
30. Wheeler, Mark. (1999). “The Macroeconomic Impacts of Government Debt: An Empirical Analysis of the 1980s and 1990s.” *American Economic Journal*, 27(3) 273-284.

## ANNEX

**Table 11:** Budget revenues (000 €)

	Taxes	Contributions	Other basic revenues	Total revenues
2021	1,105,088	581,841	199,274	1,886,203
2022	1,109,054	554,527	154,303	1,817,884
2023	1,147,871	573,936	159,704	1,881,511
2024	1,188,047	594,023	165,293	1,947,363
2025	1,229,628	614,814	171,079	2,015,521
2026	1,266,517	633,259	176,211	2,075,987
2027	1,304,513	652,256	181,497	2,138,266
2028	1,343,648	671,824	186,942	2,202,414
2029	1,383,957	691,979	192,551	2,268,487
2030	1,425,476	712,738	198,327	2,336,541
2031	1,468,240	734,120	204,277	2,406,638
2032	1,512,288	756,144	210,405	2,478,836
2033	1,557,656	778,828	216,717	2,553,201
2034	1,604,386	802,193	223,219	2,629,798
2035	1,652,518	826,259	229,915	2,708,691
2036	1,702,093	851,047	236,813	2,789,953
2037	1,753,156	876,578	243,917	2,873,651
2038	1,805,751	902,875	251,235	2,959,861
2039	1,859,923	929,962	258,772	3,048,657
2040	1,915,721	957,860	266,535	3,140,116

**Source:** Authors' calculation

**Table 12:** Table 12. Budget expenditures, balance and public debt (000 €) - SCENARIO 1

	Gross wages	Interest	Other current expenditures	Transfers for social protection	Transfers to institutions	Consolidated expenditures	Surplus/deficit	Public debt, net	Public debt, net % GDP
2021	523,223	113,075	225,535	574,252	257,809	2,369,159	-482,956	3,569,276	98.2
2022	491,841	114,770	284,497	626,857	192,879	1,869,969	-52,084	3,621,360	95.3
2023	509,056	116,445	294,454	648,797	199,630	1,933,076	-51,565	3,672,925	93.9
2024	526,873	118,103	304,760	671,505	206,617	1,998,316	-50,952	3,723,878	92.4
2025	545,313	119,741	315,426	695,007	213,848	2,065,762	-50,241	3,774,118	91.0
2026	561,673	121,357	324,889	715,857	220,264	2,125,758	-49,771	3,823,889	90.0
2027	578,523	122,957	334,636	737,333	226,872	2,187,490	-49,224	3,873,113	89.0
2028	595,879	124,540	344,675	759,453	233,678	2,251,009	-48,595	3,921,708	87.9
2029	613,755	126,103	355,015	782,237	240,688	2,316,366	-47,879	3,969,587	86.9
2030	632,168	127,642	365,666	805,704	247,909	2,383,613	-47,072	4,016,658	85.9
2031	651,133	129,156	376,636	829,875	255,346	2,452,806	-46,168	4,062,827	84.8
2032	670,667	130,640	387,935	854,771	263,007	2,524,000	-45,163	4,107,990	83.7
2033	690,787	132,092	399,573	880,414	270,897	2,597,253	-44,051	4,152,041	82.7
2034	711,510	133,509	411,560	906,827	279,024	2,672,624	-42,826	4,194,867	81.6
2035	732,856	134,886	423,907	934,032	287,394	2,750,175	-41,483	4,236,349	80.5
2036	754,841	136,220	436,624	962,053	296,016	2,829,967	-40,015	4,276,364	79.4
2037	777,487	137,506	449,723	990,914	304,897	2,912,066	-38,415	4,314,779	78.3
2038	800,811	138,742	463,214	1,020,642	314,044	2,996,538	-36,678	4,351,457	77.2
2039	824,835	139,921	477,111	1,051,261	323,465	3,083,452	-34,795	4,386,252	76.1
2040	849,581	141,040	491,424	1,082,799	333,169	3,172,876	-32,760	4,419,012	75.0

*Source: Authors' calculation*

**Table 13:** Budget expenditures, balance and public debt (000 €) - SCENARIO 2

	Gross wages	Interest	Other current expenditures	Transfers for social protection	Transfers to institutions	Consolidated expenditures	Surplus/deficit	Public debt, net	Public debt, net % GDP
2021	523,223	113,075	225,535	574,252	137,118	2,174,232	-333,000	3,419,320	94.9
2022	443,622	109,948	284,497	626,857	144,659	1,768,708	49,177	3,370,143	90.7
2023	459,148	108,367	294,454	648,797	149,722	1,825,183	56,328	3,313,815	87.3
2024	475,219	106,556	304,760	671,505	154,963	1,883,460	63,903	3,249,912	83.9
2025	491,851	104,501	315,426	695,007	160,386	1,943,597	71,924	3,177,988	80.4
2026	506,607	102,188	324,889	715,857	165,198	1,996,457	79,529	3,098,459	77.3
2027	521,805	99,631	334,636	737,333	170,154	2,050,728	87,538	3,010,921	74.2
2028	537,459	96,816	344,675	759,453	175,258	2,106,446	95,968	2,914,952	71.1
2029	553,583	93,730	355,015	782,237	180,516	2,163,649	104,838	2,810,115	67.9
2030	570,190	90,359	365,666	805,704	185,932	2,222,376	114,166	2,695,949	64.7
2031	587,296	86,688	376,636	829,875	191,510	2,282,665	123,972	2,571,977	61.5
2032	604,915	82,702	387,935	854,771	197,255	2,344,558	134,278	2,437,698	58.3
2033	623,063	78,384	399,573	880,414	203,173	2,408,096	145,106	2,292,593	55.1
2034	641,754	73,718	411,560	906,827	209,268	2,473,322	156,476	2,136,117	51.8
2035	661,007	68,687	423,907	934,032	215,546	2,540,278	168,414	1,967,703	48.6
2036	680,837	63,271	436,624	962,053	222,012	2,609,011	180,942	1,786,761	45.3
2037	701,262	57,453	449,723	990,914	228,673	2,679,565	194,086	1,592,675	42.0
2038	722,300	51,212	463,214	1,020,642	235,533	2,751,987	207,873	1,384,801	38.7
2039	743,969	44,528	477,111	1,051,261	242,599	2,826,326	222,330	1,162,471	35.3
2040	766,288	37,379	491,424	1,082,799	249,877	2,902,631	237,485	924,986	32.0

**Source:** Authors' calculation

Maja Baćović

## JAVNI DUG I PRIVREDNI RAST: DVA SCENARIJA UPRAVLJANJA JAVNIM DUGOM U CRNOJ GORI

### SAŽETAK

*Rast javnog duga jedan je od najvećih izazova s kojim se suočavaju i zemlje u razvoju i razvijene ekonomije. Dostupna istraživanja ukazuju na negativan uticaj rasta javnog duga na privredni rast. Primjenjujući OLS metod na panel podacima za zemlje Zapadnog Balkana i period od 1998. do 2019. godine, ocijenili smo da procentni rast javnog duga dovodi do smanjenja stope rasta BDP -a za 0,036 procentnih poena. Osim toga, povećanje javnog duga za jedan procentni poen dovodi do smanjenja stope rasta produktivnosti za 0,079 procentnih poena. Rezultati istraživanja za Crnu Goru (dva scenarija fiskalne politike i period 2021-2040), pokazali su da, ako rashodi ostanu nepromijenjeni, zbog male razlike između prognozirane prosječne stope rasta BDP-a u periodu 2021-2040 i kamatne stope (pretpostavljene konstantne), takav scenarij će dovesti do sporije promjene omjera javnog duga u BDP-u (smanjenje od 23% u dvije decenije). Osim toga, trošak kamata na javni dug u ovom scenariju tokom cijelog perioda veći je od 2% BDP -a. Ako se fiskalna politika promijeni u smjeru smanjenja državne potrošnje, kratkoročna stopa rasta BDP-a bi se neznatno smanjila, ali i rashodi za kamate (manje od 2% BDP-a) i javni dug (smanjenje od 63% za dvije decenije). Iako će smanjena državna potrošnja imati kratkoročni negativan utjecaj na rast BDP -a, zemlja će imati dugoročne koristi jer će smanjeni javni dug imati pozitivan utjecaj na BDP i rast produktivnosti.*

**Ključne riječi:** Javni dug, državna potrošnja, ekonomski rast

**JEL:** H6