

# External Debt and Economic Growth in the Western Balkan Countries, with Special Focus to Albania, Kosovo and North Macedonia in the course of the Pandemic COVID-19

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*Abstract:* - The objective of this study is to offer an empirical valuation of the relationship between external debt and economic growth in the Western Balkan (WB) countries, focusing specifically on the countries like Albania, Kosovo and North Macedonia, combined with other WB countries like Bosnia and Herzegovina, Montenegro and Serbia. The empirical model provides the impact of external debt and other control variables like total investments, population growth, inflation, literacy ratio, trade openness on economic growth in the Western Balkan countries, using a panel level data for 6 Western Balkan countries, covering a yearly time span: 2000-2022. Different estimation methodologies like Fixed Effects with Driscoll and Kraay standard errors, robust LSDV and GMM estimates, were employed for the purpose of the research. The findings of the research confirm growth-deteriorating effect of external debt for target group of countries like Albania, Kosovo and North Macedonia and growth enhancement effect of external debt for the second group of countries like Bosnia and Herzegovina, Montenegro and Serbia. Other control variables like total investments, trade openness, inflation and population growth are found as crucial factors on explaining growth performance of the WB countries. In addition, COVID-19 interacted with external debt and financial crisis interacted with external debt, appears as crucial factors explaining growth pattern of the WB countries.

*Key-Words:* - Economic Growth, Fiscal Policy, Western Balkan Countries, Public Finances, COVID-19.

Received: August 8, 2021. Revised: June 7, 2022. Accepted: June 24, 2022. Published: July 25, 2022.

## 1 Introduction

The association between external debt and economic growth is of essential importance for the Western Balkan (WB hereafter) countries, once having regard the general public debt limit that these countries should impose for fulfilling economic prerequisites for EU adherence criteria, in line with fiscal policy framework of the European Union [16]. Moreover, the debt component of the WB countries is heavily dependent upon external debt. The last two decades of the transition period, covering the years of 90<sup>th</sup> and 20<sup>th</sup>, WB countries possessed low level of capital accumulation, due to different problematic political and economic circumstances the region went through in the near past, thus, making these countries very much likely to finance their investment needs at their early stage of

development using external debt. Albania, Kosovo and North Macedonia, subjected as specific countries in the study, constitute extreme cases with respect to debt cyclical component in relation to GDP. While Albania and Kosovo have almost constantly recorded debt to GDP ratio at thrilling values, representing the highest values for Albania and lowest one for Kosovo, North Macedonia on the other hand, follows debt rule limit specified by the Commission of the European Union, which is 60 % of GDP [16]. Therefore, the study gives a special priority to these three countries, within the sample of the Western Balkan countries, once having regard the heterogeneous nature of the debt cyclical component in the sample countries of WB-6. Many scholars have empirically tested the growth effect of external debt, by confirming a growth

deteriorating effect of external debt, due to costly investments raised by costly servicing activities [12, 24] and growth enhancement effect of external debt, which mainly arise in cases when the domestic capital is insufficient to finance growth [15, 18]. Furthermore, the relationship between external debt and economic growth in terms of practical institutional life is also crucial in the academic debate. External debt has a catalyst impact on investments; savings and capital inflow, implying that foreign savings complement domestic savings, thus, satisfying the investment demand, especially in transition countries who face limited financial resources for financing investment needs [18]. However, due to ‘‘debt overhang’’<sup>1</sup> and ‘‘crowding out’’<sup>2</sup> effect of external debt on investment activities, a deteriorating effect of external debt on economic growth is foreseen, making foreign capital inflow to drop down, due to macroeconomic instability, which on the other hand can utilize further growth adverse effects [30; 26]. The empirical evidence on growth deteriorating effect of external debt advocates that countries with lack of institutional efficiency are more likely to experience growth adverse effects from the external debt, in cases when external debt approaches to 15-30 percent of GDP [11] or is in the range of 20 percent of GDP [13]. However, other studies suggest that growth-deteriorating effect of external debt becomes more severe even in cases when the threshold level of debt limit reaches on average, 35-40 percent of GDP [37].

The main motivation of the study is to empirically examine the ‘‘external debt-growth nexus model’’ in a sample of the six WB countries, with a special focus on the selected WB countries like Albania, Kosovo and North Macedonia, using a panel regression analysis, during the yearly period from 2000 to 2022<sup>3</sup>. There are three-research questions addressed in the study: What is the nature of the impact of external debt in the two group of WB

countries, whether it is growth declining or growth enhancement? What is the impact of the pandemic COVID-19 on external debt in both group of WB countries, once having regard that external debt during the COVID-19 crisis went through positive cyclical movement, with the aim of keeping stable, the sustainability of public finances and what is the impact of external debt on economic growth during the financial crisis turmoil. The outlined results of the study are likely to offer an intuition for the policy makers of these countries regarding whether or not the accumulation of additional external debt should be stimulated or depressed. Furthermore, the results of the study suggest growth-declining effect of external debt for the WB countries like Albania, Kosovo and North Macedonia and growth enhancing effect of external debt for countries like Bosnia and Herzegovina, Montenegro and Serbia. The findings of the paper also suggests growth-deteriorating effect of external debt during COVID-19 period and growth enhancement effect of external debt during financial crisis period, for the whole sample of the WB – 6 countries. The structure of the paper is organized as follows: The coming section present a review of literature on debt nexus-growth relationship. Third section stylizes some facts regarding the debt cyclical behaviour in relation to GDP and debt policies in the WB countries. Section four presents the research methodology as well as the empirical models of the panel data followed by hypothesis. Section five presents the results of the study and the last section concludes the study.

## 2 Literature Review

The growth nexus debt based relationship has produced ambiguous results with respect to estimated impact of external debt on economic growth. The growth enhancement effect of external debt in the developing countries is mainly supported in cases where borrowed funds take place in profitable projects, subjected by lasting macroeconomic stability of these countries [37]. The growth adverse effect of external debt is explained through ‘‘debt overhang effect’’, which makes the country’s debt repaying ability costly in relation to the benefit of the earlier borrowings, thus, discouraging further domestic and foreign investments [30]. Furthermore, as concern to developing and transition countries, as it is the case of the Western Balkan countries, external debt is valued in a foreign currency, being exposed to risks associated with exchange rate fluctuations, which increases the likelihood of debt adverse effect of

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<sup>1</sup>Exists in the cases where actual debt overcomes the anticipated debt, thus, making the countries repaying ability problematic.

<sup>2</sup>If the external debt is serviced mainly through the foreign capital, a little room is left for enhancement effect of investments on growth, on the second cycle of the economic activity. In this case, the cost of servicing the public debt, via external debt can *crowd out* public investment expenditures, thus, reducing the total investments and complementing the private investments [25]

<sup>3</sup>The data for the year of 2022 are projected based on a three years moving average, covering in principle the years of 2019, 2020 and 2021.

external debt into these countries [6]. Growth enhancement effect of external debt is grounded on capital accumulation and productivity growth that external debt usually causes on transition countries, who typically do not have sufficient domestic capital and investment opportunities at early stage of development. Further one, in this section as outlined in the following table, we show the results, which confirm growth deteriorating and growth enhancement effect of external debt and growth neutral effect of external debt on economic growth, through different channels.

Table 1. Some of the late empirical studies on the external debt nexus economic growth

Author and year	Sample and period	Methodology	Findings
Growth deteriorating effect of external debt			
[12]	CEE: period: 1995-2003	Panel data analysis; fixed effects	Growth adverse effect of external debt by decreasing the investments, due to allocation of savings on debt servicing activities and increases of the overall macroeconomic risks for domestic and foreign investors leading to further reduction in investments.
[24]	20 high external debt countries selected from Asia and Latin-America: period 1991-2004	Pooled OLS, fixed effects, and difference GMM	External debt as a share of GDP is negatively associated to growth, signifying that excessive debt is unfavourable to economic growth.
[28]	Oman: period: 1990-2015.	Autoregressive Distributed Lag cointegration approach	The study exposes a negative effect of external debt on economic growth in Oman.
[41]	five Sub-Sahara	Panel cointegration analysis,	The findings indicate that external debt is

	n African (SSA) countries: period 1990~2015	OLS and dynamic OLS	negatively and significantly associated to economic growth.
[1]	23 Low-income countries. Using data over the period 2000-2017	SUR model	External debt meaningfully declines investment and economic growth for both, the total sample and the sub-samples.
Growth enhancement effect of external debt			
[2]	111 countries; period 1971-2010	FE and 2SLS estimations 071-879-009	<i>Continental</i> countries (AUT, BEL, FRA, GER, ITA, and NETH) face more growth decreasing public debt effects than mainly <i>Liberal</i> states (AUS, CAN, IRL, NZ, CH, USA, UK). Public debt seemingly utilises unbiased or positive growth effects, while for <i>Nordic</i> states (DEN, FIN, NOR, SWE) a non-linear relationship is exposed, with negative debt effects, by around 60% of GDP.
[17]	10 former communist countries, member countries of the EU	Quadratic regression equation	A non-linear relationship between government debt to GDP ratio and the per capita GDP growth rate is found. Moreover, the authors found that turning point of government debt is 50%. If the government debt to GDP ratio surpasses this level, it could generate a negative impact on the GDP growth rate.
[41]	32	Dynamic	Public debt has

	states from 1993 to 2012	Models of panel data and the Generalized Method of Moments	enhancement impact on investments, which in turn stimulates growth, suggesting that a production based generation of public debt.
[36]	Ghana; period 1970 to 2012	Johansen cointegration and the vector error correction model (VECM)	The study claim positive long-run relationship between public debt and economic growth. In addition, in the short run a bidirectional Granger causality link exists between public debt and economic growth.
Growth effect of external debt based on threshold level			
[35]	38 African countries; period 1980-2010	Non-dynamic and dynamic panel threshold regression	a low (high) level of debt does not have a significant effect on growth,
[43]	Vietnam; period 2000-2013	VECM model from a linear and non-linear perspective in the period from 2000 to 2013	1% increase of external debt, increases growth by 1.29%; above (below) 21.5%, threshold level of external debt it deteriorates (stimulate) growth.
[44]	10 countries; period 2005-2015	Panel data analysis, the fixed effect and random effect	External debt below (above) the threshold level of 33.17% is positively (negatively) associated to growth. However, at the threshold of 33.17%, a 1% increase in external debt decreases GDP growth by 0.02%.

**Note:** Summary papers with empirical studies.

As concern to the relationship between external debt and economic growth, at panel level, some of the studies, as presented on table 1, confirm growth-enhancing effect of external debt, mainly driven by public investment, financed by the debt component [42]. In line with these findings, at country level, is the study of the relationship between public debt and economic growth in Ghana, which confirm growth-enhancing effect of external debt, using

VECM and Johansen Cointegration technique [36]. Some other studies confirm non-linear relationship between external debt and economic growth, depending from the threshold level of external debt [44; 17] and some other studies outline growth deteriorating effect of external debt driven by macroeconomic risks associated by debt financing component of private investments [12]. For the Western Balkan countries, at panel level, the empirical literature on external debt growth nexus relationship is scare, being in general of a descriptive nature. The paper will add value on the tested hypothesis related to the impact of external debt as a crucial fiscal sustainability factor on economic growth for the WB countries and hence contribute to maintaining a healthy fiscal convergence policy for the EU economic approximation path of the WB countries.

### 3 Data and Stylized Facts

Global development finance (2000) and World Bank reports, gives a special insight on defining countries indebtedness level, based on the ratio of the stock of external debt (ED) to Gross National Income (GNI). For less indebted countries, this ratio is below 48 percent; for countries that are more indebted it is in between 48 and 80 percent and highly indebted countries have a ratio of ED/GNI above 80 percent. As viewed from figure 1 the higher average intendedness level for WB-6 is recorded in 2020, generally accepted as a pandemic year, which provoked debt level due to borrowing from international financial institutions to finance liquidity concerns of the private sector of the respective WB countries [16].

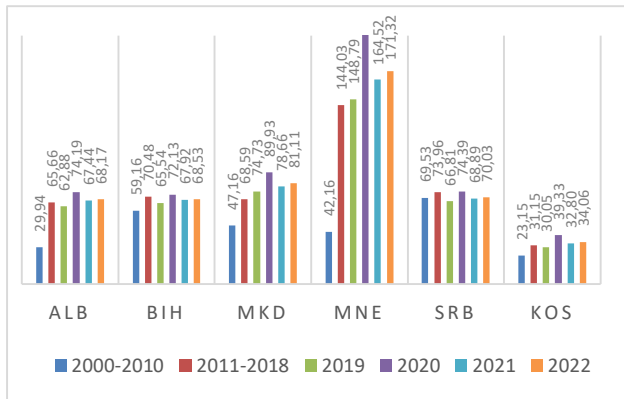


Fig. 1: External debt stock as a share of Gross National Income in the Western Balkan Countries.

**Note:** Total external debt is the sum of public, publicly guaranteed, and private nonguaranteed long-term debt, use of IMF credit, and short-term debt. GNI – Gross National Income (formerly GNP – Gross National Product) is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad.

Source: World Bank, World Development Indicator, 2022 and author’s calculations.

The leading country in terms of debt level during the last decade, observed in two periods (2011-2018) and (2019-2022), on average, is Montenegro, with average recorded external debt in terms of Gross National Income by 144.03 and 171.32 percent, respectively, and followed by North Macedonia and Serbia. Among the WB countries, the lowest debt level sourced from external sources was recorded in Kosovo, which is an example of country, being less likely to finance the economic activities from foreign sources.

## 4 Methodology and Econometric Framework

### 4.1 Unit Root Test

The unit root tests for the variables employed in the model are performed in order to examine the stationary trend of the data, and therefore avoid spurious regression and incorrect inferences. We employ panel unit root test, to allow for fixed effects and unit specific time trends, since their test includes a degree of heterogeneity [32]<sup>4</sup>. The

<sup>4</sup> Following Leving et al. (2002), null and alternative hypotheses are  $\rho_q = 1$ , where  $i = 1 \dots N$ , and  $\rho_1 = \rho_2 =$

variables in levels (integrated at order zero) and first difference (integrated at order 1), for 0 and 1 time lag are found to be significant by the definition panel unit root test, implying the rejection of the null hypothesis for the presence of a unit root in the data, making the panels stationary [32].

Table 2. Unit root tests 2000-2020

Variables	Lin – Levin and Chu unit root test: Ho: Panels contain unit roots; Ha: Panels are stationary		
	Adjusted t statistic [p value]	Adjusted t statistic [p value]	ADF regression
	I (0) levels	I (1) First difference	Nr of lags
$G_{it}$	-7.67[0.00]***	-15.67[0.00]***	0
$G_{it-1}$	-2.78[0.02]**	-3.23[0.00]***	1
$ED_{it}$	-3.47[0.00]***	-13.69[0.00]***	0
$ED_{it-1}$	-1.70 [0.04]**	-5.63[0.00]***	1
$INF_{it}$	-1.851[0.03]**	-5.751[0.00]***	0
$INF_{it}$	-0.81 [0.20]	-4.24[0.00]***	1
$INV_{it}$	-3.06[0.00]***	-8.52[0.00]***	0
$INV_{it}$	-1.41[0.07]*	-5.56[0.00]***	1
$TO_{it}$	-4.64[0.00]***	-11.06[0.00]***	0
$TO_{it}$	-1.72[0.04]**	-4.79[0.00]***	1
$SCH$	-3.35[0.00]***	-9.86[0.00]***	0
$SCH$	-3.25[0.00]***	-6.02[0.00]***	1
$POP$	-1.32[0.09]*	-10.36[0.00]***	0
$POP$	-0.48[0.31]	-1.37[0.08]*	1

**Note:** \*\*\*, \*\* and \*, indicate rejection of the unit-root hypothesis at the significance level of 1%, 5% and 10%, respectively.

All the variables are stationary in levels, with exception to population growth variable, which is becoming stationary at the first difference. Therefore, the stationary variables in the regression equation are specified in levels, with exception of population growth, which is considered in the first difference, as a non-stationary variable.

### 4.2 Econometric Framework

The paper will try to shed light on the impact of external debt on economic growth, as a crucial fiscal sustainability factor, in the Western Balkan countries, relying on a yearly panel data set for the period 2000-2022. The reduced form of the growth equation for the estimation purpose is as follows:

$$G_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 Y_{it} + \beta_3 X_{it} \times D_1 + \beta_4 X_{it} \times D_2 + \beta_5 X_{it} \times D_3 + D_1 + D_2 + D_3 + \theta_i + \gamma_t + u_{it} \quad (1)$$

... =  $\rho_n < 1$ , respectively. The alternative hypothesis assumed the same degree of stationarity across countries.

Where  $g_{it}$  is the dependent variable denoting the growth level of the WB countries,  $lnX_{jt}$  is the focus variable of external debt,  $lnY_{jt}$  is the vector of control variables,  $D_1$  is the regional dummy variables denoting the geographical location of the southern WB countries.  $D_2$  is the dummy variable denoting the pandemic COVID-19 period.  $D_3$  is the dummy variable denoting the financial crisis.  $\beta_0$  is the constant.  $\theta_i$  is country dummy,  $\gamma_t$  is year dummy and  $u_{it}$  is usual error term. Extending the approach of Abdelaziz et al (2019), the equation for estimating the impact of external debt on economic growth in the Western Balkan countries is the following:

$$G_{it} = \beta_0 + \beta_1 ED_{it-1} + \beta_2 INF_{it} + \beta_3 INV_{it} + \beta_4 TO_{it} + \beta_5 SCH_{it} + \beta_6 dPOP_{it} + \beta_7 ED_{it} \times D_1 + \beta_8 ED_{it} \times D_2 + \beta_9 ED_{it} \times D_3 + D_1 + D_2 + D_3 + \theta_i + \gamma_t + u_{it} \quad (2)$$

Where  $i = 1, 2, \dots, n$  is the country index,  $t = 1, 2, \dots, t$  is the time index, denoting the years from 2000 to 2022. The empirical model assumes that growth level of the WB countries is a function of initial level of growth, external debt<sup>5</sup> and the control variables<sup>6</sup> like: inflation, total investment, trade openness, schooling, population growth, the interaction terms between external debt with regional dummy  $D_1$ , COVID dummy  $D_2$  and financial crisis dummy,  $D_3$ , as well as the constitutive terms of the respective dummy variables. With respect to the role of the interaction terms with the regional dummy, the aim of the study is to differentiate the debt impact on economic growth across two group countries, the southern group of the WB countries, like Albania, Kosovo and North Macedonia and the north group of the WB countries, like Bosnia and Herzegovina, Montenegro and Serbia. In the same way, as concern to the interaction term between external debt and  $D_2$ , denoting covid dummy, the aim of the study is to differentiate the impact of external debt on economic growth across two periods, the pandemic period and the normal period, which is considered as a benchmark category of period in relation to the covid period. Following this logic, the inclusion of the interaction term between external debt and financial crisis dummy  $D_3$  in the model,

<sup>5</sup> This variable constitute the main interest of the study.

<sup>6</sup> The control (regime) variables are included in the model to augment the regression model of the growth equation, which explain the variation of growth level of the WB countries that may affect the relationship between growth and external debt.

serves for differentiating the impact of external debt on economic growth across two periods, the financial crisis period, which occurred during the year 2008 and the normal period. For the static panel model, we rely on fixed effects with Driscoll and Kraay standard errors (FEDK). The FEDK estimates are asymptotically efficient in the panel samples where time series, ‘T’ exceeds the number of panels ‘N’ [15, 23]. By relying on large T asymptotic, FEDK estimates are robust to general forms of cross-sectional as well as temporal dependence as well as to heteroscedasticity and autocorrelation [23]. We also control for time and country fixed effects FEDK estimates. As a robustness check to the FEDK estimates, we also use Least Square Dummy Variable estimates, in order to evaluate the net effect of each regressor, accounting also for unobserved heterogeneity [8, 22]. We address the issue of the lagged dependent variables, as well as the concerns with respect to unobserved fixed effects and endogenous independent regressors, accounting also for heteroskedastic and auto correlated standard errors across panel members, by using General Method of Moments (GMM) [3; 5; 7; 39; 40]. The dynamic panel data model can be expressed as follows:

$$Y_{it} = aY_{it-1} + aX'_{it}\beta + u_{it} \quad (3)$$

Where,  $Y_{it}$  is the dependent variable,  $Y_{it-1}$  is the lagged dependent variable,  $X'_{it}$  is the set of explanatory variables and  $u_{it}$  is the standard error. Dynamic panel data regression using Arellano-Bover/Blundell/Bond estimation procedure [3; 5] is considered as a robustness check to LSDV estimates. Following Roodman’s approach, we have employed the *stata* command *xtdpdsys*. The new *xtdpdsys* jointly offer most of *xtabond2*’s features, while moving somewhat towards its syntax and running significantly faster [39; 40]. The lagged dependent variable and the variables that potentially show high inertia with the dependent variable are treated as endogenous components, like *population growth*, *trade openness as a share of GDP* and *investments as a share of GDP*. We use only one lag for the dependent variable in the GMM and exclude the dummy variables employed in static panel models, like *regional dummy*  $D_1$ , *covid dummy*  $D_2$  and *financial crisis dummy*  $D_3$ .

### 4.3 Variable Description and Hypothesis

**The dependent variable**  $G_{it}$  denotes economic growth of WB countries, calculated as a percentage change of real GDP growth, and sourced from IMF, world economic outlook (WEO) database of January 2022. Lagged dependent variable  $G_{it-1}$  is introduced

in the GMM model to control for initial level of growth and potential endogeneity problem.

**External debt variable** denoted by  $ED_{it-1}$ , is the external debt as a share of gross national income, sourced from WEO. The empirical literature suggest twofold relationship between external debt and economic growth. This variable is lagged by one period to allow the external debt the grace period before it starts impacting growth. We expect a growth heightening effect of external debt, due to capital accumulation and productivity growth that external debt usually causes on transition countries, which typically do not possess sufficient domestic capital and investment opportunities at early stage of development [9; 10]<sup>7</sup>. External debt is considered as a catalyst factor for investments, savings and capital inflow, implying that foreign saving complement domestic savings, thus, satisfying the investment demand [18]. However, due to “debt overhang”<sup>8</sup> and “crowding out”<sup>9</sup> effect of public debt on investment activities, we expect a deteriorating effect of public debt variable on economic growth [30; 26]. The specified null hypothesis is that the coefficient of external debt is zero; i.e. external debt has no impact on economic growth ( $H_0: ED_{it} = 0$ ) and the alternative hypothesis is that the external debt impacts economic growth and the coefficient of external debt is statistically different from zero ( $H_a: ED_{it} \neq 0$ ). By studying the relationship between external debt and economic growth, we test the hypothesis that indebted countries due to low capital accumulation at early stage of development are expected to record lower economic growth.

**Inflation** denoted by  $INF_{it}$  is the percentage change of the average consumer prices, sourced from WEO. Inflation rate is the first control (regime) variable

<sup>7</sup>WB countries usually possessed low level of capital accumulation at the late years of 2000, due to different political and economic circumstances they went through, in the late years of 90th, like devastating wars and conflicts, which caused significant macroeconomic turbulences in these countries.

<sup>8</sup>Exists in the cases where actual debt overcomes the anticipated debt, thus, making the countries repaying ability problematic.

<sup>9</sup>If the external debt is serviced mainly through the foreign capital, a little room is left for enhancement effect of investments on growth, on the second cycle of the economic activity. In this case, the cost of servicing the public debt, via external debt can *crowd out* public investment expenditures, thus, reducing the total investments and complementing the private investments [25].

employed in the model<sup>10</sup>. The empirical literature support growth-deteriorating effect of inflation rate, growth enhancement effect of inflation rate and non-linear relationship between inflation and economic growth [21; 25; 27; 33;]. We expect bidirectional relationship between inflation and economic growth for the WB countries, once having regard the heterogeneous nature of the WB countries, with respect to macroeconomic performance. The null hypothesis in this case is that inflation rate has no impact on economic growth; i.e. ( $H_0: INF_{it} = 0$ ) and the alternative hypothesis is that inflation rate impacts economic growth ( $H_a: INF_{it} \neq 0$ ). Based on the relationship between inflation and economic growth, the developed hypothesis is that high inflation is expected to be associated with less growth in the WB countries.

**Total investment** denoted by  $INV_{it}$  is the total value of gross fixed capital formation and changes in inventories and acquisitions less disposal of valuable for a unit or sector, as a percent of GDP<sup>11</sup>, sourced from IMF, World Economic Outlook. The Gross Fixed Capital Formation (GFCF) is consisted from the investments components, which mainly come from private, public and government sector. The empirical evidence regarding the impact of each investment category within GFCF on economic growth is mostly positive. Private investment is considered to have growth enhancement effect due to the increase of productivity from technology spillover effect [4]. In addition, public investment increases productivity of the private sector, which in turn rises the economic growth [4]. Public investments applied by governments may enhance growth in the long run through positive spillover effects provided by the value added from the public goods, in terms of positive externalities that public investments in education, physical infrastructure and research and development contribute to growth [38]. The variable  $INV_{it-1}$  is included in the model in its lagged form, in order to avoid endogeneity problem between the growth and investments, due to the high inertia that both variables expose to each other subjected by the two-way interactions in both

<sup>10</sup>Control variables are included for increasing the explanatory power of the model and chose the best fit of the data that minimizes the error sum of square as mention by Hansen (2000). vc

<sup>11</sup>More specifically, Gross fixed capital formation is a flow value who measures net investments resulting from the difference of acquisition and disposals in fixed capital assets by enterprises, government and households within the domestic economy, during an accounting period.

directions<sup>12</sup>. Following the empirical evidence regarding the nexus between investments and growth, we expect growth enhancement effect of investments in WB countries. The null hypothesis is that total investments have no impact on economic growth; i.e.  $(H_0: INV_{it} = 0)$  and the alternative hypothesis is that total investments impact economic growth  $(H_a: INV_{it} \neq 0)$ . Accordingly, we develop the hypothesis of a growth enhancement effect of total investments.

**Trade openness** denoted by  $TO_{it}$ , is trade openness measured by the sum of exports and imports over GDP, data sourced from UNCTAD. This variable is included in the model to capture trade liberalization progress in the WB countries. The empirical literature support positive association between trade liberalization and economic growth, mainly due to the gains that trade liberalization provides to economic growth, like providing a steady state level of income, reduction of corruption and smuggling, greater economies of scale and scope, knowledge and technology spillovers and stimulation of export platform FDI [31; 20]. Positive relationship between trade liberalization and economic growth is expected for the case of the WB countries [19]. The null hypothesis is that trade openness have no impact on economic growth; i.e.  $(H_0: TO_{it} = 0)$  and the alternative hypothesis is that trade openness impact economic growth  $(H_a: TO_{it} \neq 0)$ . In this case, we test the hypothesis of a positive association between trade openness and economic growth.

**Schooling**  $SCH_{it}$ , measured in terms of the percentage of total working-age population with advanced education, data sourced from the World Bank, is included in the model to account for the impact of human capital development on economic growth of the WB countries. There is growing empirical literature related to positive association of human capital with the economic growth, which is mainly supported by the hypothesis that human capital developments through raising of the marginal product of physical capital, induces further accumulation of human capital, influencing the raise of output [4]. Both, microeconomic and macroeconomic research approach on the relations between education and productivity appear quite consistent with each other and are strongly recalling of a causal interpretation of Barro's finding of a positive effect of educational investments on economic growth. Therefore, it is expected that

human capital developments in the WB countries to be positively related to economic growth. The null hypothesis in this case is that schooling has no impact on economic growth; i.e.  $(H_0: SCH_{it} = 0)$  and the alternative hypothesis is that schooling affects economic growth  $(H_a: SCH_{it} \neq 0)$ . On the grounds of the relationship between schooling and economic growth, we test the hypothesis that schooling has a positive impact on economic growth.

**Population growth**  $POP_{it}$  is the percentage change of population on yearly basis, sourced from WEO. This variable is used on the model on behalf of the theoretical reflection of a Solow - standard neo-classical growth model, in the steady state. It is expected to reduce income per capita and therefore reduce growth via second round impact, due to the increase of the likelihood of an economy to use scarce savings and resources. In a rapidly growing population, it becomes costly to satisfy public needs through extending of services [29]. On the other hand, population growth is regarded as a growth of labor force and production process, which for the WB countries is an important input of growth prospects. Therefore, the expected impact of population growth on economic growth is ambiguous. The null hypothesis is that population growth has no impact on economic growth; i.e.  $(H_0: POP_{it} = 0)$  and the alternative hypothesis is that population growth impacts economic growth  $(H_a: POP_{it} \neq 0)$ . With respect to the direction of the impact of population growth and economic growth, we test the hypothesis of a growth enhancement effect of population growth.

**Dummy variables;**  $D_1$  denotes the regional dummy, where  $D_1 = 1$ , stands for south group of the WB countries<sup>13</sup> and  $D_1 = 0$  captures the benchmark category of north group of the WB countries<sup>14</sup>.  $D_2$  denotes the dummy variable capturing the outlier effect of the pandemic COVID-19, where  $D_2 = 1$ , stands for the COVID-19 pandemic years of 2020, 2021 and 2022, and  $D_2 = 0$  captures the benchmark category of the normal years without pandemic.  $D_3$  denotes the dummy variable capturing the outlier effect of the financial crisis, where,  $D_3 = 1$  stands for the financial crisis year of 2008 and  $D_3 = 0$  captures the benchmark category of the normal years without financial crisis. The interaction term between the variable of interest, external debt and the dummy variables  $D_1$ ,  $D_2$  and  $D_3$  are included in the model to estimate the difference in the effects of external debt on economic growth between two groups of

<sup>12</sup>In the theoretical premises, supported by many empirical evidences, investment is potential source of growth. In addition, Gross Capital Formation derives Economic growth of the country (IMF, 2012).

<sup>13</sup>Albania, Kosovo and North Macedonia.

<sup>14</sup>Bosnia and Herzegovina, Montenegro and Serbia.



countries<sup>15</sup>, two periods (COVID and non-COVID period) and two periods (financial crisis and non-financial crisis), respectively. With respect to the relationship between interaction terms and economic growth, the hypothesis is that economic growth may to a certain extent, be independent of the country-specific determinants and therefore be related to the geographical region of the WB countries, which have been plagued by political instability in the near past and to both crisis, pandemic COVID-19 and financial crisis. Therefore, the specified countries in the study (Albania, Kosovo and North Macedonia) may be more likely to finance their growth potentials relying on external resources, once, outlining the insufficiencies of the domestic capital that these countries possessed during the early transition period. In addition, a negative effect of the pandemic COVID-19 and financial crisis on economic growth in the addressed countries (Albania, Kosovo and North Macedonia) is expected due to the reasons that these countries were more likely to finance the consequences of these two crisis with debt from International Financial Institutions.

## 5 Results and Discussion of the Results

In this section, we present the estimated coefficients of the augmented growth model using Fixed Effects with Driscoll and Kraay standard errors with year and country dummies (column 1) and robust LSDV estimate (column 2-4). Among LSDV estimates, to interpret the results we consider robust LSDV estimates, accounting for time and country dummies (column 3 and 4). Moreover, the LSDV estimates with time and country dummies fit the data much better, with an R-square of 68.3 per cent and 70.5 percent, respectively. We discuss the economic interpretation of the models summarized in table 3, bearing in mind that significant coefficients from the FEDK estimates and LSDV estimates, accounting for country and year dummies will be interpreted and discussed. These specifications are robust to heteroscedasticity and serial correlation.

To distinguish the effect of external debt on economic growth, with respect to regional differentials of the WB countries, the pandemic COVID-19 and the financial crisis, we have

included the interaction terms between external debt and  $D_1$  dummy variable<sup>16</sup>, external debt and  $D_2$  dummy variable<sup>17</sup> and external debt and  $D_3$  dummy variable<sup>18</sup>, respectively. By these interactions, we test the hypothesis that the effect of external debt on the economic growth of the WB countries is different among the WB countries, based on regional differentials, pandemic differentials and financial crisis differentials, respectively.

Table 3. Results from static panel estimation techniques

Dep variable	(1)	(2)	(3)	(4)
$G_{it}$	FEDK	LSDV	LSDV	LSDV
$ED_{it-1}$	0.035** [2.93]	0.049*** [2.75]	0.022** [2.05]	0.035*** [2.74]
$INF_{it}$	-0.022** [-2.74]	-0.063*** [-3.26]	-0.021 [-0.10]	-0.022* [-1.94]
$INV_{it}$	0.094* [2.07]	0.041 [0.68]	0.134*** [3.99]	0.094*** [2.63]
$TO_{it}$	0.020 [0.67]	0.119** [2.61]	-0.025 [-1.49]	0.020 [0.79]
$SCH_{it}$	0.004 [0.10]	-0.084 [-1.11]	-0.048 [-1.38]	0.004 [0.07]
$dPOP_{it}$	0.326 [1.77]	0.209 [1.56]	0.328** [2.09]	0.326** [2.11]
$ED_{it} \times D_1$	-0.040 [-1.79]	-0.125*** [-4.26]	-0.031** [-2.01]	-0.040* [-1.76]
$ED_{it} \times D_2$	-0.076*** [-7.73]	-0.035* [-1.68]	-0.079*** [-4.44]	-0.076*** [-4.57]
$ED_{it} \times D_3$	0.055** [3.84]	0.088** [2.14]	0.052 [0.87]	0.055 [1.06]
$D_1$		2.211	0.777	-1.056

<sup>16</sup>Since the interaction indicates that the effect of external debt on economic growth is different for two different values of regional dummy, the unique effect of external debt is not limited to  $B_1$ , but also depends on the values of  $D_1$  dummy variable, which captures the regional indicator.  $D_1 = 1$  stands for countries belonging to the southern part of the WB region (Albania, Kosovo and North Macedonia) and  $D_1 = 0$  captures the benchmark category of the northern part of the WB region (Bosnia and Herzegovina, Montenegro and Serbia).

<sup>17</sup>In the same way, here, the presence of a significant interaction indicates that the effect of external debt on economic growth is different for two different values of  $D_2$  dummy ( $D_2 = 1$  for the years of 2020, 2021 and 2022, 0=otherwise; capturing the benchmark category of the years within the period of the sample, without COVID).

<sup>18</sup>In the same way, here, the presence of a significant interaction indicates that the effect of external debt on economic growth is different for two different values of  $D_3$  dummy ( $D_3 = 1$  for the year of 2008, 0=otherwise; capturing the benchmark category of the years within the period of the sample, without financial crisis).

<sup>15</sup>WB countries that belong to the southern part of the WB region and WB countries that belong to the northern part of the WB region.

		[0.88]	[0.80]	[-0.59]
$D_2$	0.054	1.132	-0.286	0.054
		[0.05]	[1.06]	[-0.33]
$D_3$	-0.255	-2.846		-0.255
		[-0.36]	[-1.27]	[-0.09]
Year dummies	Yes	No	Yes	Yes
Country dummies	Yes	Yes	No	Yes
Constant	0.210	4.379	4.409*	0.272
		[0.06]	[0.86]	[1.90]
Observations	132	132	132	132
R-squared	0.697	0.357	0.683	0.705
Number of groups	6			

**Note:** Note: \*\*\*, \*\* and \*, indicate rejection of the null hypothesis for B coefficients at the significance level of 1%, 5% and 10%, respectively. Model 1 is the FEDK estimates with country and year dummies. Models 2 – 4 are the robust LSDV estimates.

Focusing on the results of the robust LSDV estimates accounting for year dummies (column 4), the estimated coefficient of external debt for the WB countries that belong in the southern region, (WBSR, hereafter), in the equation of growth is  $-0.005(0.035 - 0.040 \times 1)$  percent. For the WB countries that belong to the northern region (WBNR, hereafter), namely Bosnia and Herzegovina, Montenegro and Serbia, the coefficient of external debt is  $0.035(0.035 - 0.040 \times 0)$  percent. The difference of 0.040 percentage point lower for WBSR countries is statistically significant at 10 percent level of significance (column 4). Thus, we conclude that there is sufficient evidence against the hypothesis that the size of economic growth between two groups of countries, does not vary with respect to the level of external debt. These results indicate that a considerable 10 percent increase in the level of external debt in the WBSR (WBNR) countries, decreases (increases) economic growth by 0.05 (0.35) percent, *ceteris paribus*. Positive (negative) association of the external debt with economic growth for the case of the WBNR (WBSR) countries confirm the growth enhancement effect (growth deteriorating effect) of external debt, although in terms of magnitude the size of the economic impact is very small in both cases. The positive relationship between external debt and economic growth for the sample of WBNR countries, namely Bosnia and Herzegovina, Montenegro and Serbia, in general, is an indication that WBNR countries, due to insufficient level of

domestic capital, at early stages of development rely pretty much on a foreign resources to finance the domestic productive activities, mainly via external debt. The negative relationship between external debt and economic growth for countries like Albania, Kosovo and North Macedonia can be explained by the crowding out effect of the debt on private investments, thus, diminishing growth prospects in these countries, in the long run. The same estimated elasticities of the coefficients of external debt for the WBSR and WBNR countries are confirmed in other estimates also, including both FEDK estimates (column 1) and GMM estimates (see table 4, columns 1-2). The growth enhancement effect of external debt favours the Keynesian approach of fiscal policy by endorsing the governmental intervention, by using external debt as a valid resource to increase the public and private investments [15].

The interaction term of external debt with COVID dummy is statistically significant at 1 percent level of significance. Focusing on the LSDV estimates (column 4), regarding this interaction term, the estimated coefficient of external debt for the COVID years is  $-0.041(0.035 - 0.076 \times 1)$  percent, whereas, for the normal years, without COVID, it is  $0.035(0.035 - 0.076 \times 0)$  percent. The statistically significant difference of 0.076 percentage points in favor of normal years, without COVID-19, means that the size of economic growth between two periods vary with respect to the level of external debt. Hence, 10 percent increase in the level of external debt, decreases (increases) the economic growth in the COVID period (normal period), on average by 0.41 and 0.34 percent, respectively, *ceteris paribus*. The explanation of the growth deteriorating effect of external debt in the pandemic COVID-19 years can be attributed to the fact that public spending during the COVID-19 period went through rapid restructuring in all WB countries. Public spending's were mainly focused on unproductive activities, like maintaining the service sector with government subsidies to save jobs and liquidity in the private sector and not on productive sectors of the economy where the value added activity is generated. These government subsidies during the COVID-19 years were financed mostly from external resources via external debt, although the subsidies from the World Bank were not missing (World Bank, 2021). On the other hand, the growth enhancement effect of the external debt in the normal years (without COVID-19), is a signal that WB countries rely their development level on external resources, due to insufficient domestic capital to finance growth. Contrary to expectations,

the results confirm a growth enhancement effect of external debt during the financial crisis period, although its impact on economic sense is confirmed to be very small. The estimated elasticity of growth enhancement effect of external debt during the crisis period is almost 0.09 percent,  $0.09(0.035 + 0.055 \times 1)$  whereas, during the normal period the estimated elasticity of growth enhancement effect of external debt is  $0.035(0.035 + 0.055 \times 0)$ . The statistically significant difference of 0.055 percentage points in favor of financial crisis year means that the size of economic growth between two periods, vary with respect to the level of external debt. Hence, based on these results, a considerable increase of external debt during the financial crisis period (normal period), by 10 percent, increases economic growth of the WB countries by average 1.0 (0.3) percent, respectively, ceteris paribus. The explanation behind the scope of this result can be attributed to the fact that short recession should not affect the pace of growth, leaving potential growth unharmed in the longer run [19].

The coefficient of investment is statistically significant at one percent level of significance, at the FEDK (column 1) and LSDV (column 4) specifications which confirm that investments are positively associated to growth level, as expected, although in magnitude the size of the investment coefficient is relatively small. The growth enhancement element of investments may be originated from the public investments that the region of WB countries have undertaken in the late years, to accomplish the target of converging their economies with the EU standards [16]. These public investments in the form of government investments manifested mainly on service sector, contributed to the efficiency of public goods, like education and physical infrastructure. In addition, private investments may lay behind the scope of growth enhancement effect of total investments, due to the increase of productivity spillover effect [4]. Based on the estimated coefficient of the total investments as a share of GDP, a considerable increase of the investments, say by 10 percent increases growth level by average 1 percent, ceteris paribus (LSDV and FEDK estimates).

The coefficient of the population growth is statistically significant and positively associated to growth level in the LSDV specification, accounting for year and country dummies (column 4). Hence, 10 percent increase on population growth, increases growth level of the WB countries by average 3.2 percent, holding other variables constant. In addition, the coefficient of inflation is statistically

significant at 5 percent level of significance in the LSDV estimates, accounting for year and country dummies, laying on a negative relationship with growth, although in magnitude its size is very small. Therefore, average growth-deteriorating effect of inflation differential per 10 per cent change is just 0.22 per cent, ceteris paribus. We also present the results from the dynamic panel models: General Method of Moments (GMM), using Arrellano-Bond (using *xtabond stata command*) on column (1), Arrellano-Bover/Blundell/Bond estimation procedure (using *xtpdsys stata command*), shown on column (2).

Table 4. Results from dynamic panel estimation techniques

Dep variable	1	2
$G_{it}$	GMM	GMM
$G_{it-1}$	-0.272*** [-3.12]	-0.188*** [-2.61]
$ED_{it-1}$	0.044* [1.86]	0.052*** [2.63]
$INF_{it}$	-0.085*** [-3.97]	-0.069*** [-4.83]
$INV_{it}$	0.042 [0.45]	0.086 [1.06]
$TO_{it}$	0.247*** [5.48]	0.168*** [4.55]
$SCH_{it}$	0.129 [0.97]	0.088 [0.92]
$dPOP_{it}$	0.245 [0.82]	0.224 [0.78]
$ED_{it} \times D_1$	-0.223*** [-4.15]	-0.213*** [-4.89]
$ED_{it} \times D_2$	-0.046*** [-4.95]	-0.041*** [-4.89]
$ED_{it} \times D_3$	0.071 [1.06]	0.108 [1.59]
$D_1$		3.820 [1.56]
$D_2$	2.007** [2.29]	2.574*** [3.22]
$D_3$	-3.129 [-1.01]	-4.703 [-1.57]
Year dummies	No	No
Country dummies	No	No
Constant		-10.921 [-1.50]
Observations	132	132
R-squared		
Number of groups	6	6
Wald test	102.87	102.87
p-value	0.000	0.000

**Note:** \*\*\*, \*\* and \*, indicate rejection of the null hypothesis for B coefficients at the significance level of 1%, 5% and 10%, respectively. Model 1 shows one-step results from system GMM using Arellano Bond dynamic panel estimation technique. Model 2 shows one-step results from the system GMM using Bover/Blundell Bond estimation technique, using stata command xtpdys. Z-statistics in brackets, \*\*\*, \*\* and \* indicate significance of coefficients at 1, 5 and 10 per cent, respectively. For the GMM results (column 1-2), internal instruments are used for endogenous variables (population growth, trade openness and total investments). Lag limits are ½ for lagged dependent variable and 2/3 for endogenous components.

The coefficient of COVID dummy is economically large and statistically significant in GMM estimates. This coefficient measures the external debt differentials on economic growth, between WB countries with respect to the pandemic COVID-19, assuming that the interacted regressors are zero. Since the interacted regressors of the external debt are continuous variables, it is unlikely they are equal to zero. The positive coefficient of COVID dummy,  $D_2$  in both system GMM estimates shows that the level of growth enhancement of external debt during the pandemic COVID-19 period, is higher in magnitude in comparison to the normal period, whereas, the coefficient of regional dummy,  $D_1$  and financial crisis dummy,  $D_3$  are insignificant in all estimates.

The lagged dependent variable, captured by the initial growth level of the WB countries is statistically significant, laying on a negative relationship with current growth, confirming that the persistence effects subject the current growth level of the WB countries. One of the crucial features of the neoclassical growth model is the prediction of a low coefficient of elasticity of the initial growth (less than one), which predicts conditional convergence. The negative sign of the initial growth level, referring to neoclassical theory, means that holding other variables constant, the WB economies are tending to not approach to their long – run position at the rate indicated by the magnitude of the coefficient [34]. The variable of trade openness results significant in the dynamic specifications. A considerable increase of trade openness, say, by 10 percent, increases economic growth of the WB countries by 2.4 percent, on average, ceteris paribus. The explanatory variables of schooling resulted insignificant in all specifications. The fact that this insignificant regressor reported in both

specifications, static (FEDK and LSDV) and dynamic panel models (GMM) estimates, suggest that the expounding power of the lagged dependent variable in the dynamic specification is being originally ascribed to other variables in the static specifications.

## 6 Conclusion

The research has identified some of the determinants of economic growth in the Western Balkan countries. Using different estimation methodologies from the static and dynamic panel models, we focused the research mainly on the importance of external debt which largely explain the size of the growth level in the WB countries, once having regard the insufficiency of the domestic capital that these countries possessed during the long transition period to finance the initial development stages. The results of the paper proved the hypothesis that external debt alongside with other control variables, like: total investments as a share of GDP, population growth and inflation differentials measured by the average consumer price index, have significant impact on growth level in both group of the WB countries. The growth enhancement effect of external debt is confirmed for northern countries of the WB region, like Bosnia and Herzegovina, Montenegro and Serbia, whereas, the growth deteriorating effect of external debt is confirmed for southern countries of the WB region, like Albania, Kosovo and North Macedonia. From the control variables, investments and population growth are found to be growth-enhancing factors, although in terms of economic impact their effect is relatively small, whereas inflation rate is confirmed as a growth-deteriorating factor for the WB countries. The findings of the paper also confirm a growth deteriorating impact of COVID-19, due to the increase of emergency spending on unproductive sectors in order to save jobs and liquidity in the private sector and growth enhancing impact of financial crisis, which is mainly a result of short run expansionary fiscal policies.

The economic importance of the findings of this research paper are on providing an analytical foundation for the evaluation of the economic policies of the WB countries aimed at increasing growth level in the region. The paper contributes to the literature review in the field of the nexus model between growth and external debt as well as on the determinants of growth level in the transition countries, especially Western Balkan countries, relying on different methodologies. The limitations of the study are pertaining to the institutional control

variables, which can be regarded as growth enhancement factors, considering the fact that institutional performance of the WB region is subjected target by the governments, for being considered as a crucial force for leading the growth performance of the WB region. Due to these conditions, a permanent institutional approach is needed in Public Financial Management through a fiscal risk assessment instrument, where all fiscal parameters will be recorded, analysed and managed. Therefore, the need for intervention and medium-system is highly recommended. The intervention measures may include designing an effective system for managing public finances in difficult times, with various actions from actively monitoring macroeconomic developments, establishing a regular fiscal risk assessment, considering the possibilities for flexibility and fiscal space and managing the public investments that will positively affect the acceleration of economic recovery. The mixed evidence with respect to the impact of external debt on economic growth at the WB countries implies that both group of WB countries, WBNR and WBSR countries, shall focus on their macroeconomic performance, at country level, in order to have a better view with respect to using debt component for stimulating growth.

#### References:

- [1] Abdelaziz, H., Rim, B.O., & Majdi, K., External debt, investment, and economic growth. *Journal of Economic Integration*, Vol. 34, No. 4, 2019, pp. 725-745.
- [2] Ahlborn, M., & Schweickert, R., Public debt and economic growth—economic systems matter. *International Economics and Economic Policy*, Vol. 15, No.2, 2018, pp. 373-403.
- [3] Arellano, M., & Bover, O., Another look at the instrumental variable estimation of error-components models, *Journal of econometrics*, Vol. 68, No.1, 1995, pp. 29-51.
- [4] Barro, R. J., Human capital and economic growth. In *Policies for long-run economic growth*, a symposium sponsored by the Federal Reserve Bank of Kansas City, Jackson Hole, WY. Kansas City, MO: Federal Reserve Bank of Kansas C, Wyoming, 1992, pp. 99-216.
- [5] Blundell, R., & Bond, S., Initial conditions and moment restrictions in dynamic panel data models. *Journal of econometrics*, Vol.87, No.1, 1998, pp. 115-143.
- [6] Bordo, M. D., Meissner, C. M., & Stuckler, D., Foreign currency debt, financial crises and economic growth: A long-run view. *Journal of international Money and Finance*, Vol. 29, No. 4, 2010, pp. 642-665.
- [7] Bowsher, C. G., On testing overidentifying restrictions in dynamic panel data models. *Economics letters*, Vol. 77, No. 2, 2002, pp. 211-220.
- [8] Bun, M. J., & Kiviet, J. F., On the diminishing returns of higher-order terms in asymptotic expansions of bias. *Economics Letters*, Vol. 79, No. 2, 2003, pp. 145-152.
- [9] Chowdhury, K., A structural analysis of external debt and economic growth: some evidence from selected countries in Asia and the Pacific, *Applied Economics*, Vol. 26, No. 12, 1994, pp.1121-1131.
- [10] Chowdhury, A. R., External debt, growth and the HIPC initiative: is the country choice too narrow? In *Debt relief for poor countries*, Palgrave Macmillan, London. 2004, pp. 158-180.
- [11] Cordella, T., Ricci, L. A., & Ruiz-Arranz, M., Debt Overhang Or Debt Irrelevance?: Revisiting the Debt-growth Link. *IMF Working Paper*, WP/05/223, 2005.
- [12] Ciftcioglu, S., & Begovic., The relationship between economic growth and selected macroeconomic indicators in a group of Central and East European countries: a panel data approach. *Problems and Perspectives in Management*, Vol. 6, No. 3, 2008, pp. 24-30.
- [13] Clements, B., Bhattacharya, R., & Nguyen, T. Q., External debt, public investment, and growth in low-income countries. *International Monetary Fund*. No 3-249, 2003.
- [14] Dauti, B., Determinants of foreign direct investment in transition economies, with special reference to Macedonia. Evidence from gravity model. *The South East European Journal of Economics and Business*, Vol.10, No. 2, 2015, pp. 7-28.
- [15] Dauti, B., & Elezi, Sh., Economic growth in the Central East European Union and the Western Balkan countries in the course of Stability and Growth Pact and COVID-19, *Zbornik radova Ekonomskog fakulteta u Rijeci: časopis za ekonomsku teoriju i praksu*, Vol.40, No.1, pp.29-61.
- [16] Dauti, B., Fiscal Policy of the European Union, in *Qorraaj, G. & Hashi, I. (eds), European Union and the Western Balkans*, 2021, ISBN / 978-83-65020-33-8/159-178.
- [17] Dinca, G., & Dinca, M.S., Public debt and economic growth in the EU post-communist countries, *Romanian Journal of Economic Forecasting*, Vol.18, No.2, 2015, pp. 119-132.

- [18] Eaton, J., Sovereign debt: A primer, *The World Bank Economic Review*, Vol. 7, No. 2, 1993, pp. 137-172.
- [19] European Commission., Impact of the Current Economic and Financial Crisis on Potential Output, *Occasional Papers No. 49*, 2009.
- [20] Falvey, R., Foster, N., & Greenaway, D., Trade liberalization, economic crises, and growth. *World Development*, Vol. 40, No. 11, 2012, pp.2177-2193.
- [21] Gillman, M., & Nakov, A., Granger causality of the inflation–growth mirror in accession countries, *Economics of Transition*, Vol.12, No.4, 2004, pp. 653-681.
- [22] Greene, W. H., *Econometric Analysis*, Upper Saddle River, N.J.: Prentice Hall, 2013.
- [23] Hoechle, D., Robust standard errors for panel regressions with cross-sectional dependence, *The stata journal*, Vol. 7, No. 3, 2007, pp. 281-312.
- [24] Hwang, J. T., Chung, C. P., & Wang, C. H., Debt overhang, financial sector development and economic growth, *Hitotsubashi Journal of Economics*, Vol. 51, No.1, 2010, pp. 13-30.
- [25] Iqbal, Nasir, & Saima Nawaz., Investment, inflation and economic growth nexus, *The Pakistan Development Review*, Vol.48, No.4, 2009, pp. 863-874.
- [26] Karagol, E., The causality analysis of external debt service and GNP: The case of Turkey, *Central Bank Review*, Vol. 2, No. 1, 2012, pp. 39-64.
- [27] Khan, M. S., & Ssnhadji, A. S., Threshold effects in the relationship between inflation and growth, *IMF Staff papers*, Vol. 48, No.1, 2001, pp. 1-21.
- [28] Kharusi, S. A., & Ada, M. S., External debt and economic growth: The case of emerging economy. *Journal of economic integration*, Vol. 33, No. 1, 2018, pp. 1141-1157.
- [29] Klasen, S., & Lawson, D., The impact of population growth on economic growth and poverty reduction in Uganda, No. 133. *Diskussionsbeiträge*, 2007.
- [30] Krugman, P., 1988, Financing vs. forgiving a debt overhang, *Journal of development Economics*, Vol. 29, No. 3, 1988, 253-268.
- [31] Lee, J. W., Capital goods imports and long-run growth, *Journal of development economics*, Vol. 48, No. 1, 1995, pp. 91-110.
- [32] Levin, A., Lin, C. F., & Chu, C. S. J., Unit root tests in panel data: asymptotic and finite-sample properties, *Journal of econometrics*, Vol. 108, No. 1, 2002, pp. 1-24.
- [33] Mallik, G., & Chowdhury, A., Inflation and economic growth: evidence from four south Asian countries, *Asia-Pacific Development Journal*, Vol. 8, No. 1, 2001, pp. 123-135.
- [34] Moral-Benito, E., Panel growth regressions with general predetermined variables: likelihood-based estimation and Bayesian averaging, *CEMFI WP No. 1006*, 2010.
- [35] Ndoricimpa, A., Threshold effects of debt on economic growth in Africa, *African Development Review*, Vol. 29, No. 3, 2017, pp. 471-484.
- [36] Owusu-Nantwi, V., & Erickson, C., Public debt and economic growth in Ghana. *African Development Review*, Vol. 28, No. 1, pp. 116-126.
- [37] Pattillo, C. A., Poirson, H., & Ricci, L. A., External debt and growth, *Available at SSRN 879569*, 2002.
- [38] Qayyum, A., Trade liberalization, financial development and economic growth. *Pakistan Institute of Development Economics*, Working Paper, 2007, 19, 2007, Islamabad.
- [39] Roodman, D., How to do xtabond2: An introduction to difference and system GMM in Stata, *The stata journal*, Vol. 9, No. 1, 2009a, pp. 86-136.
- [40] Roodman, D., A note on the theme of too many instruments. *Oxford Bulletin of Economics and statistics*, Vol. 71, No. 1, 2009b, pp. 135-158.
- [41] Sánchez-Juárez, I., & García-Almada, R., Public debt, public investment and economic growth in Mexico, *International Journal of Financial Studies*, Vol. 4, No. 2, 2016, pp. 1-14.
- [42] Shittu, W. O., Hassan, S., & Nawaz, M. A., The nexus between external debt, corruption and economic growth: evidence from five SSA countries, *African Journal of Economic and Management Studies*, Vol. 9, No. 3, 2018, pp. 319-334.
- [43] Thảo, L. P. T. D., & Trường, N. X., The Impact of External Debt to Economic Growth in Viet Nam: Linear and Nonlinear Approaches. *In International Econometric Conference of Vietnam*, Springer, Cham, 2019, pp. 952-967.
- [44] Vu, Y. H., Nguyen, N. T., Nguyen, T. T., & Pham, A. T., The threshold effect of government's external debt on economic growth in emerging countries. *In International Econometric Conference of Vietnam*, Springer, Cham, 2019, pp. 440-451.
- [45] World Bank., Western Balkans Regular Economic Report, The Economic and Social Impact of COVID-19. *World Bank*,

Washington, DC. World Bank.  
<https://openknowledge.worldbank.org/handle/10986/33670> License: CC BY 3.0 IGO, No. 17, 2020.

**Contribution of Individual Authors to the Creation of a Scientific Article (Ghostwriting Policy)**

-Bardhyl Dauti carried out the conceptualization of the study and was responsible for the econometric assessment, methodology development and design of the hypothesis and estimations.

-Ismet Voka was responsible for the investigation process, methodology development, execution of literature review part and the conclusion part.

**Sources of Funding for Research Presented in a Scientific Article or Scientific Article Itself**

The authors of the paper funded the study.

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