

## Impact of Public Debt on Economic Growth-Case of the Republic of Kosovo

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**Abstract:** *This paper aims to investigate the impact of public debt on the economic growth of the Republic of Kosovo through an econometric analysis using quarterly data for the available years from 2013 until 2022. The research data used in this paper originates from the Ministry of Finance of the Republic of Kosovo and the Kosovo Statistical Agency, using variables such as GDP per capita, Central Government Debt, and Government Spending in Euro units. The econometric analysis provides statistically significant variables in the long-run, thus confirming the validity of the long-run relationship between Public debt and the GDP. Such, confirms the Keynesian theory that the public debt impacts positively the economic growth in our case. Ultimately, the government is ought to use a well-planned investment and fiscal responsibility with attention to the acquired debt.*

**Keywords:** Republic of Kosovo; Public Debt; Economic growth

**JEL Classification:** H63, O11

### Introduction

Within the framework of one nation's economic plan, apart from monetary policy, the central government applies also fiscal policy as a macroeconomic tool in fostering economic growth. Taking into consideration, the public debt as a public finance component, in the scope of fiscal policy the Keynesians argued in contrast to the Classical view, that public debt would mobilize investment, savings and improve the standard of living through capital formation, and generate employment. In this context,

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the theory provides that the public debt forms an important part of the government budget, although utilized with limits, taking into consideration a controlled negative budget balance, recommended during economic cycles of stagnation, stagflation, or recession, ensuring not to make its way in periods of expansion making itself prominent. Public debt originates mainly from budget deficits that the state can regulate through increasing taxation and borrowing. According to Keynesian theory, to adopt active measures to stimulate the economy, borrowing can be done internally and externally, thus avoiding raising taxes or impacting government spending. The public debt in the Republic of Kosovo at the macroeconomic level was at first regulated through Law on Public Debt no.03/L-175, by introducing annually a Government State Debt Program. For reference purposes linked with the paper, the law sets a limitation on Total Debt. Meaning that the outstanding principal amount of Total Debt exceeds forty per cent (40%) of the Gross Domestic Product. The latest State Debt Program Report issued by the Ministry of Finance, describes Kosovo entering into international debt as of the year 2009, with former Yugoslavia loans inherited with the World Bank, supported by International Monetary Fund budget programs, and lastly by the European Commission in project financing. Reportedly, international financial institutions focused on capital investments in government through soft loans.

To investigate the relationship between public debt in economic growth, author used as variables GDP per capita, Central Government Debt, and Government Final Consumption Expenditure in Euro units obtained from the Ministry of Finance of the Republic of Kosovo and the Kosovo Statistical Agency, with quarterly data for the reporting period 2013 to 2022. Further, an econometric model is constructed using, time series analysis, performing stationarity, determining optimal lag, conducting a cointegration test, and specifying the Vector Error Correction Model along with a few diagnostic tests.

## Literature Review

To influence the economy, the policymakers use two main tools at their disposal, monetary and fiscal policy. While, a government normally applies the fiscal policy to promote strong and sustainable growth (Horton & El-Ganainy, 2009). The fiscal policy referred to as the budgetary policy refers to stabilization through government decisions in spending and taxation to influence aggregate demand and direct the economy toward equilibrium. (Bénassy-Quéré.*et al.*, 2019). When speaking of the public debt, the governments continue to pursue their effort in controlling budget deficit, by trying to answer raised questions on public finance among economists as outlined in the statement of the American economist F.W Fetter “*parliamentary debate on the power of the purse was never-ending: how much money should be extracted from the public, and of that how much should be borrowed and how much*

taken by taxation; what type of taxes should be used; for what purposes should the government spend money. Such issues have been at the heart of government since the beginning of organised society” (Churchman, 2001). Public debt as a key instrument in economic policy helps countries to invest in their development and economic growth, otherwise being deprived of credit access may lead to poverty traps and aid dependency (Lopetegui & Rosado, 2022). Another observation claims a new public debt belief of having its burden shifted to future generations, the correctness when it comes to the similarity between public and private debt, while external and internal debt are equivalent (Buchanan, 1999). Historically, large increases in government debt occurred during wars or depressions. Whereas, nowadays the scope to borrow may refer to meeting the cost of handling a pandemic such as in the recent case of COVID-19, to spend more on important programmes or projects improving public services in cases of exceeding revenues. Under these circumstances, the classical question arises of how government debt affects the economy. While the macroeconomists stand divided on this question, the study itself raises questions about economic behaviour, and benefits on the matter, since it can help an impartial observer to reach a judgement on its own (Elmendorf & Mankiw, 1999). On this note, the paper “Public Debt and Economic Growth of Nepal, 2022” investigated the effect of public debt on economic growth using annual time series data from 1978 to 2020. Using an unrestricted Vector Auto regression model, capturing Multivariate Granger Causality between the variables revealed no significant causal relationship between public debts and the economic growth of Nepal (Upadhyaya & Pun, 2022). Further, the paper “*The Impact of Government Debt on Economic Growth: An Empirical Investigation of the Lebanese Market*”, investigated the impact of the Lebanese government debt on its economic growth through an econometric analysis using data from about 26 years starting in the year 1989. The author used the regression method in basic time series analysis using different variables that influence economic growth. After testing its robustness and illustrated through ARMAX, the results showed a statistically significant impact of public debt to GDP on the Lebanese economic growth (Taher, 2017). Moreover, the paper “*The impact of high and growing government debt on economic growth, an empirical investigation for the euro era (2010)*” studied the average impact of government debt on per-capita GDP growth in 20 euro area countries over about 40 years starting in 1970. By using the empirical growth model, they showed a highly statistically significant non-linear relationship between the government debt ratio and the per capita GDP growth rate for the 12 euro area countries (Checherita & Rother, 2010). A conducted review of the global financial crisis for the period 2008 - 2009 of the public debt management in emerging market economies indicated that it impacted the emerging market countries. Whereas, a study on adapting strategies in evolving circumstances by government debt managers when international capital markets were effectively closed to issuers for several months involved, applied funding from other sources in reducing pressure on market borrowing, adapting funding

programs to changes in demand for different types of securities and implementing liability management operations to support the market. (Anderson *et al.*, 2010).

An IMF Working paper presented a database on government debt involving 19 emerging market countries as of 1980, partly confirming why some governments tend to rely more on international debt rather than domestic debt in financing their deficits (Jeanne & Guscina, 2006). Such, leads to a reasonable conjecture that a government will focus to depend on the domestic markets in case the domestic savings are high by having a developed domestic financial and banking system.

In another research, the high public debt was shared as the cause of concern for the emerging market economies in comparison with industrial countries the average public debt ratio exceeds about 70 per cent of the GDP, alerting for a fiscal crisis, associated with high borrowing, affecting negatively to the private investment and the fiscal policy flexibility. In such cases, the recommended approach pertains to tax and expenditure reforms; improve the fiscal policy credibility; reduce exposure to exchange rate and interest rate movements; structural reforms to boost growth prospects; and addressing the risks from contingent and implicit liabilities (Daniel *et al.*, 2003).

Concerning the case of Kosovo, the government debt is regulated through the Law on State Debt and State Guaranties No. 08/L-099 and Regulation GRK - no. 22/2013 on Procedures for Issuance and Management of State Debt, State Guarantees and Municipal Debt. Whereas, the Ministry of Finance, Labour and Transfers issues public debt indicators through its Annual Data on Total Debt. According to the last, the Total Debt has restraint to up to 40% of GDP and is considered as the sum of the total government net debt, municipal debt and State Guarantee. Further, the State Debt Program Report defines State Debt as a direct debt or on-lend debt. Whereas Total Debt is divided into International Debt and Domestic Debt, where Domestic Debt is subject to the local jurisdiction, and International Debt is subject to the laws of a legal jurisdiction other than the Republic of Kosovo. According to the IMF Report 2022, public debt is defined as general government debt and explicit government guarantees. The debt ratio is projected to remain well below the 40-percent-of-GDP debt ceiling, projected to increase from 17.6 per cent of GDP in 2019 to about 30 per cent of GDP in 2026.

### **Model specification**

To analyse the correlation and causality relation between public debt and economic growth, the author obtained available quarterly data covering the reporting period from the year 2013 until 2022 with 40 observations from the Ministry of Finance of the Republic of Kosovo and the Kosovo Statistical Agency. The time series data analysed involve variables: GDP per capita, the Public Debt and Government Final Consumption Expenditure.

The model to investigate the impact of the public debt, is specified and expressed in the following order:

$$\text{GDP} = F(\text{PD}, \text{GFCE}) \quad (1)$$

Where

GDP = Gross Domestic Product,

PD = Public Debt, and

GFCE = Government Final Consumption Expenditure.

The above functional form is narrated into the econometric VAR model, having:

$$Y_t = \alpha + \beta_0 Y_{t-1} + \beta_1 \text{PD}_{t-1} + \beta_2 \text{GFCE}_{t-1} + \varepsilon_t, \quad (2)$$

where

$\beta_0$  = Intercept term

$\beta_j$  = Slope coefficients for each of the independent variables

$\varepsilon_t$  = Error term,

$_{t-1}$  = First order lag,

Further, the conventional error correction model below for co-integrated time series will be used in the model for the VECM.

$$\Delta \text{GDP}_t = \beta_0 + \sum_{i=1}^n \beta_i \Delta \text{GDP}_{t-i} + \sum_{i=0}^n \delta_i \Delta \text{PD}_{t-i} + \sum_{i=0}^n \delta_i \Delta \text{GFCE}_{t-i} + \varphi z_{t-1} + \mu_t \quad (3)$$

where,

$z_t$ - the error correction term is defined as a co-integrating equation as:

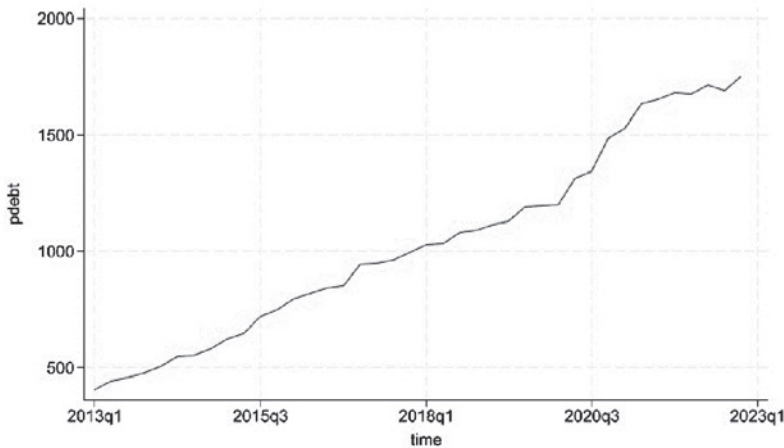
$$z_{t-1} = \text{ECT}_{t-1} = \text{GDP}_{t-1} - \beta_0 - \beta_1 \text{PD}_{t-1} - \beta_2 \text{GFCE}_{t-1} \quad (4)$$

## Descriptive statistics

The graphical data visualize the cumulative frequency in the form of a rising upward line starting from the year 2013 of gathered raw data. The graph also describes the effect of the COVID-19 pandemic causing the government to seek an international debt of 110 million euros contracted to mitigate its effect on the economy. According to the State Debt Program Report, during the year 2021, a total of 89.20 million Euros were paid on behalf of the international debt service, which represents 3.59% of total revenues or 1.14% of GDP. Overall, the current state debt portfolio of the Republic of Kosovo is 1,753.20 mil. euro, comprised of international debt (641.20 mil. euros),

domestic debt (1,112.00mil. euros) and state guarantees (29.61 mil. euros). By the end of 2022, in comparison with neighbouring countries in the region, it is assessed that Kosovo has a low level of State Debt comprising 19.91% of the country's Nominal GDP in December 2022. Based on biannual data for the year 2023, as provided by the Ministry of Finance, the debt ratio is 17.30 % of the Nominal GDP.

Figure 1: Public debt for the reporting period 2013-2022



Source: Author's calculations

## Econometric analysis

The econometric methods have their relevance in every branch of applied economics, such as having an economic theory to test, or a relationship that has an importance for policy analysis (Jeffrey, 2015). Within this line, an empirical analysis uses the data set to test a theory or to estimate a relationship, by applying an econometric model using the data set for testing Keynes theory.

### *Stationarity tests*

The statistical significance of the fitted regression model and the relationship between the dependent and independent variables is described below, to avoid any spurious results issues. Therefore, to avoid the existing non-stationarity, the Augmented Dickey-Fuller test (ADF test) is applied. The Augmented Dickey-Fuller test indicates that the variables are stationary, by referring to the 5% critical value which is lower than the absolute t-statistics, supported by the p-value lower than 0.05, rejecting the Null

Hypothesis that the data are non-stationary. To supplement the model, the Phillips-Peron test is performed for purposes of verifying that the absolute t-statistics is lower than the 5% critical value for all variables, also the p-value is well below 0.05. Meaning, that the Null Hypothesis is rejected, hence no unit root presence is confirmed.

Table 1: Results for Unit Root test at first differencing

Variables	Augmented Dickey-Fuller			Phillips-Perron		
	t-stat	t-critical values 5%	P-values	t-stat	t-critical values 5%	P-values
Dlgdp	-6.731	-2.964	0.000	-12.916	-2.964	0.000
Dlpdebt	-6.925	-2.964	0.000	-20.621	-2.964	0.000
Dlgovspent	-15.595	-2.964	0.000	-6.852	-2.964	0.000

### *Optimal lag length*

To follow specific criteria for appropriate lag length selection, and use of specific criteria, such as in our case, the AIC suggest lag length no 4.

Table 2: Optimal lag length

Lag	LL	LR	df	P	FPE	AIC	HQIC	SBIC
0	47.8359				0.000017	-2.49088	-2.44483	-2.35892
1	149.419	203.17	9	0.000	9.70E-08	-7.63441	-7.45018	-7.10657
2	194.347	89.856	9	0.000	1.30E-08	-9.63041	-9.30801	-8.70669
3	213.996	39.298	9	0.000	7.60E-09	-10.222	-9.76145	-8.90243
4	241.314	54.635*	9	0.000	2.9e-09*	-11.2397*	-10.6409*	-9.52418*

### *Cointegration test*

The results of the cointegration test provided that there is cointegration due to lower values of trace statistics in comparison with critical value 5%, and similarly is presented with max statistics to which it is suggested to proceed with vector error correction model. Based on the results, we reject the null hypothesis of no cointegration equation in the model, expressing a long-run relationship.

Table 3: Johansen Cointegration test unrestricted

Cointegration rank test - Unrestricted						
Rank	Eigen value	Trace statistics	Critical value 5%	Eigen value	Max statistics	Critical value 5%
None *	.	19.10*	29.68	.	15.09	20.97
At most 1	0.34251	4.01	15.41	0.343	3.95	14.07
At most 2	0.10431	0.04	3.76	0.104	0.04	3.76

### Vector Error Correction Model

Through the use of Vector Error Correction Estimate, it is observed that there is a validity of the long-run relationship since the error correction term has a negative sign and is significant at a 1% level, meaning that there is a long-run causality running from public debt and government spending towards the GDP. While, the long-run equation at the Johansen normalization restriction, provides that the public debt and government spending have a positive impact on the GDP, based on the coefficients being significant at 1% level, thus being relevant statistically in predicting changes in the GDP.

Table 4: VECM

Equation		Coefficient	Std. err.	z	P>z	[95% conf.interval]	
D_lgdp	<b>_ce1 L1.</b>	<b>-1.194548</b>	<b>0.163513</b>	<b>-7.31</b>	<b>0.000</b>	<b>-1.51503</b>	<b>-0.87407</b>
	lgdp						
	LD.	0.8070837	0.122846	6.57	0.000	0.566309	1.047858
	lpdebt						
	LD.	-0.3649882	0.401858	-0.91	0.364	-1.15262	0.422639
	lgovspend						
	LD.	-0.6323558	0.073038	-8.66	0.000	-0.77551	-0.4892
	_cons	0.0017237	0.017554	0.1	0.922	-0.03268	0.036129
D_lpdebt	<b>_ce1 L1.</b>	<b>-0.1322706</b>	<b>0.073199</b>	<b>-1.81</b>	<b>0.071</b>	<b>-0.27574</b>	<b>0.011197</b>
	lgdp						
	LD.	0.0476681	0.054994	0.87	0.386	-0.06012	0.155455
	lpdebt						
	LD.	-0.2625186	0.179898	-1.46	0.144	-0.61511	0.090075
	lgovspend						
	LD.	-0.0126749	0.032697	-0.39	0.698	-0.07676	0.051409
	_cons	0.0428692	0.007858	5.46	0.000	0.027467	0.058271
D_lgovspend	<b>_ce1 L1.</b>	<b>0.8885691</b>	<b>0.180126</b>	<b>4.93</b>	<b>0.000</b>	<b>0.535529</b>	<b>1.241609</b>
	lgdp						
	LD.	-0.0187237	0.135327	-0.14	0.89	-0.28396	0.246513
	lpdebt						
	LD.	1.059905	0.442686	2.39	0.017	0.192257	1.927553
	lgovspend						
	LD.	-0.8398948	0.080459	-10.44	0.000	-0.99759	-0.6822
	_cons	0.0086986	0.019337	0.45	0.653	-0.0292	0.046599

Table 5: Johansen normalization restriction imposed

beta	Coefficient	Std. err.	z	P>z	[95% conf.interval]	
<b>_ce1</b>				, the model		
<b>lgdp</b>	1	.	.	.	.	.
<b>lpdebt</b>	-0.2116789	0.03229	-6.56	0.000	-0.275	-0.14839
<b>lgovspend</b>	-0.3672542	0.089488	-4.1	0.000	-0.5426	-0.19186
<b>_cons</b>	-8.367189	.	.	.	.	.



### Diagnostic tests

For purposes of applying some diagnosis to the model for autocorrelation, the LM test for residual autocorrelation is performed, showing that at lag 4 the p-value is 0.72233, not rejecting the null hypothesis that there is no autocorrelation. Further, the Jarque-Bera test is performed to examine if residuals are normally distributed, and the overall result provides that the errors are normally distributed with a p-value of 0.05693. Lastly, the diagnostic test to check the stability condition provides that the VECM specification imposes 2 unit moduli.

Table 6: LM test for residual autocorrelation

Lagrange-multiplier test			
lag	chi2	df	Prob > chi2
4	6.1746	9	0.72233
H0: no autocorrelation at lag order			

Table 7: Test for normally distributed disturbances

Jarque-Bera test			
Equation	chi2	df	Prob > chi2
D_lgdp	0.446	2	0.80013
D_lpdibt	1.819	2	0.40268
D_lgovspent	9.97	2	0.00684
ALL	12.235	6	0.05693

Table 8: Check stability condition of VEC estimates

Eigenvalue stability condition	
Eigenvalue	Modulus
1	1
1	1
.1416545 + .8609859i	.872561
.1416545 - .8609859i	.872561
-.8460102	.484601
-.2255086	.225509
The VECM specification imposes 2 unit moduli.	

### Discussion

Inspired by Keynesian theory on public debt, and related public debt literature (Seccareccia, 1995; Michl, 2013; Otaki, 2015; Phelps, 2022), the study focused on investigating the public debt at the national level, as it remains an under-researched area. The review of previous research found that few authors in the Republic of Kosovo

dealt with this area (Zharku, 2018; Kryeziu, 2020), in focusing their study models on the positive impact of public debt on the economy, fiscal stability and social welfare. Consistent with previous research at the domestic level on the correlation between public debt and economic growth through the use of econometric models (Qehaja & Qehaja, 2018; Bajrami *et al.*2020; Misiri *et al.*2021; Haziri & Shala, 2022; Berisha, 2023), a positive relation between public debt and economic growth is added to the evidence. The studies applied variables such as public debt (internal and external), interest payment, investments, private consumption, inflation, and export. In contrast, only one study (Beha & Ruxho, 2024) investigated the relationship between public debt and economic growth, with findings that there is a negative relationship. Similar to foreign literature (Hilton2021), there is not a single study in the Republic of Kosovo exploring the relevance of public debt and government spending towards the GDP, indicating long-run relationship.

Lastly, the theoretical contribution of the research in this paper is twofold. First, to add to the body of current knowledge by investigating the impact of determinants through the econometric model, namely public debt and government spending in the aspect of short-run and long-run relationship; and second, in the applied level the government to consider debt levels through fiscal responsibility and planned investments for a predicted positive turnaround in the long run.

## Conclusion

The paper aimed to analyse the impact of public debt towards the economic growth of the Republic of Kosovo, by taking into consideration the increase of public debt in recent years even in developed countries. Upon analysing the data, initially, the author conducted an econometric analysis, respectively the Vector Error Correlation Test.

The results of VECM models, using quarterly data held that Public debt and Government spending are statistically significant thus confirming the significant effect of public debt on the GDP, observing that there is a validity of the long-run relationship between Public debt and the GDP. Such, aligning with the Keynesian theory on the positive impact of public debt towards the economic growth in our case.

The Republic of Kosovo has a low level of public debt comprising 19.91% of GDP, noting here the IMF prediction on a debt ratio increase of 30% of the GDP by the year 2026, which is currently still under a 40% debt ceiling. Having this in mind, the government will need to consider using a well-planned investment and fiscal responsibility with attention on acquired debt.

## Declarations

### *Funding*

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

### *Conflicts of interest/Competing interests*

There is no conflict of interest/Competing interests.

### *Availability of Data and materials*

The data that support the findings of this study is available upon request.

### *Code Availability*

Not applicable.

### *Authors' Contributions*

Not applicable.

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