THE IMPACT OF MACROECONOMIC FACTORS ON PUBLIC REVENUES - CASE STUDY: KOSOVO AND ALBANIA

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Abstract

Society is the basis of a state. We know that individuals who are part of society are quite complex. The economy of a country reflects behaviors, motives, attitudes, etc., where indicators of a country's economy are the result of society's decisions. To achieve prosperity and political stability, governments aim to achieve economic equilibrium by using various instruments to stimulate economic growth, reduce unemployment and achieve macroeconomic objectives. (Civic A, 2013).
When the government determines fiscal policy, it makes a preliminary assessment of a large number of factors, including the performance of key macroeconomic and financial variables and indicators, due to their impact on the amount of tax revenues collected that meet the needs of funding government programs (Karl E, et.al, 2013).
The paper aims to provide an overview of the macroeconomic factors of Kosovo and Albania for 11 years and their impact on public revenues. And then we will present the macroeconomic indicators of Kosovo and Albania, then doing an econometric analysis of the macroeconomic indicators of these two countries. The paper concludes by providing a number of specific recommendations for the Kosovo budget, namely budget revenues and expenditures.

Keywords: Public Budget, Public Revenues, Government Expenditures

JEL classification: E62, H20

1. INTRODUCTION

Fiscal and monetary policy are two basic components of the state economic policy, which are used for macroeconomic purposes: with influence on the gross product, the level of employment, income and the level of prices. Fiscal policy is related to the actions of the government in changing the composition of public revenues and expenditures, in order to manage aggregate demand to maintain sustainable economic growth, with relatively high employment, no inflation generation, no increase in public debt and satisfactory balance of payments (Fitz J, et.al, 2017).

Among the main activities performed by the government is the collection of revenues through taxes and planning of expenditures for the performance of essential functions of the state. For this reason, it is important to study the state budget as a means by which scarce resources are allocated in society for different social needs.. (Shim K, et.al, 2011).

Currently the goal of every developing country is to achieve a sustainable economic development, which requires the achievement of continuous economic growth. One of the preconditions for economic growth is macroeconomic stability. Between different opinions from different schools regarding macroeconomic stability. Any deterioration of these variables leads to a lack of macroeconomic stability (Bastable, 1932).

2. OBJECTIVES OF STUDY

The purpose of this study is to treat scientifically and analyze the problems of public finances and public revenues, as well as which of the macroeconomic indicators has the highest impact on public revenues in Kosovo and Albania for the period 2010-2020. Was tried to understand through analysis the role of macroeconomic indicators, as well as their impact on the economic development of these countries.

The purpose and objectives can only be met by making an accurate and comprehensive formulation of the research questions and relevant hypotheses that a paper test. In this context, the central research question of this study is:

- Which macroeconomic indicator has the highest impact on public revenues?
- How much has the trend of increasing the budget over the years affected the improvement of the socio-economic situation of the citizens of Kosovo and Albania?
- How did the pandemic situation affect public revenues and all macroeconomic indicators?

To answer these questions, we will address its dimensions, where the relevant hypotheses will be tested, according to the selected econometric model. Based on the results of the analysis, I will conclude whether or not the Budget Revenue Structure has had the proper development for the economy. The hypotheses

of this research are:

- **H0: Macroeconomic factors have an impact on public revenues.**
- **H1: Macroeconomic factors have no impact on public revenues.**

The testing of raised hypotheses is done through the analysis of secondary data reported by the institutions responsible for each indicator considered, under a positive research approach.

3. RESEARCH METHODOLOGY

In this paper will be used basic literature from Macroeconomics and scientific literature of budget elaboration which means that many theories so far related to public revenues and expenditures will be analyzed. Data and information from official sources will also be used, as well as research reports of local and international institutions, scientific papers and literature that are directly or indirectly related to the Kosovo budget.

Government publications, publications of the Kosovo Statistical Agency, Reinvest Institute, GAP Institute, and publications of international institutions such as UNDP, IMF, World Bank, CBK, etc, will be used. With these data that we will collect, we will use them to compare which components have the greatest impact on the economic development of our country.

The data analysis will be done using the econometric method, diagrams and statistical analysis where they will be processed through the STATA program. Quantitative methods will be used in this model. The nature of the data will be numerical and will be standardized and usually this type of data is expressed in continuous units (Data Panel).

The purpose of this empirical study is to analyze the macroeconomic factors that have influenced public revenues during the period 2010-2020.

The number of observations is 22, more specifically there are 2 countries for 11 years, Kosovo and Albania; explaining the impact of macroeconomic factors on public revenues during the period (2010-2020).

In this empirical study the data are presented in the form of a panel, where we used 10 variables, one dependent and nine independent variables where these are: Public Revenues as a dependent variable while the independent variables are: Remittances, Economic Growth, Investments, Inflation, Unemployment rate, Exports, Imports, Public Debt, Interest Rate.

Table 1. *Statistical data*

Country	Year	Public Revenues	Remittances	GDP	Investments	Inflation	Unemployment rate	Exports	Imports	Public Debt	Interest Rate
Kosovo	2010	26.44%	17.24%	3.31%	8.41%	4.69%	43%	19.94%	3.10%	6.22%	14.30%
Kosovo	2011	27.10%	14.93%	4.62%	8.05%	3.87%	44%	23.63%	10.72%	5.51%	13.90%

Kosovo	2012	26.13%	14.61%	2.80%	4.53%	2.45%	30.95%	23.25%	14.09%	8.44%	12.90%
Kosovo	2013	24.64%	14.97%	3.40%	5.25%	2.20%	30%	21.93%	0.85%	8.90%	11.10%
Kosovo	2014	23.96%	14.85%	1.20%	2.71%	3.26%	35.30%	22.50%	8.60%	10.40%	9.29%
Kosovo	2015	25.09%	15.08%	4.10%	5.33%	0.22%	32.90%	21.93%	12.98%	12.70%	7.69%
Kosovo	2016	26.66%	14.67%	3.40%	3.67%	-0.33%	27.50%	23.69%	6.99%	14.30%	7.22%
Kosovo	2017	26%	15.34%	4.40%	4.90%	0.90%	30.40%	26.65%	-1.30%	16.80%	6.83%
Kosovo	2018	26.94%	15.55%	4.00%	5.00%	0.99%	29.60%	26.43%	16.08%	17.12%	6.50%
Kosovo	2019	26.62%	15.75%	4.00%	5.25%	1.92%	25.70%	27.76%	9.05%	17.50%	6.40%
Kosovo	2020	26.29%	18.86%	-7.50%	-6.10%	0.75%	24.60%	-4.25%	-2.23%	23.37%	5.60%
Albania	2010	25.87%	13.34%	3.71%	9.14%	4.49%	14.09%	27.97%	-8.01%	57.72%	12.80%
Albania	2011	25.41%	12.04%	2.55%	8.13%	2.31%	13.48%	29.24%	3.24%	59.41%	12.40%
Albania	2012	24.79%	11.53%	1.42%	7.45%	1.04%	13.38%	28.93%	-7.66%	62.14%	10.90%
Albania	2013	23.98%	10.03%	1%	9.82%	0.29%	17.10%	28.91%	-8.69%	66.60%	9.80%
Albania	2014	26.27%	10.74%	1.80%	8.69%	1.55%	18.00%	28.21%	5.55%	67.90%	8.70%
Albania	2015	26.44%	11.39%	2.20%	9%	0.10%	17.30%	27.26%	-0.10%	69.00%	8.73%
Albania	2016	27.37%	11.01%	3.40%	8.80%	-0.21%	15.20%	28.97%	8.40%	67.50%	9.65%
Albania	2017	28.39%	10.07%	3.80%	9.30%	3.00%	14.00%	31.57%	4.83%	65.70%	6.02%
Albania	2018	27.44%	9.62%	3.71%	23.69%	2.45%	13.65%	31.53%	3.30%	69.92%	7.10%
Albania	2019	27.32%	9.64%	3.77%	24.21%	2.75%	13.40%	31.51%	4.74%	71.00%	7.40%
Albania	2020	24.47%	9.90%	-7.50%	22.61%	1.40%	11.80%	-5.73%	25.27%	83.28%	7.15%

Source: KSA, GAP institute, CBK, World Bank, IMF, Trading economics, The Modern Financial Data Research Platform, The Global Economy

The econometric treatment for quantitative results is based on analysis of variance and regression analysis, OLS, F-test and cross-database for testing these variables and then extends to panel data analysis

So, the research will take place in three stages:

1. Preparatory phase
2. Statistical data research phase

3. Results processing phase

4. RESEARCH RESULTS

From the data presented in Table 1 we have interpreted the results from the analysis of correlation, regression, we have interpreted the best positive and negative result from the analysis of regression and testing hypotheses.

Correlation analysis

Table 2. *Correlation of variables*

	TëHyra~e	remita~t	rritja~e	invest~t	inflac~n	Papunë~a	eksporti	importi	borgji~k	normae~t
TëHyratPub~e	1.0000									
remitancat	0.0359	1.0000								
rritjaekon~e	0.4642	-0.0693	1.0000							
investimet	0.0513	-0.7579	0.0550	1.0000						
inflacion	0.1970	0.1528	0.2623	0.1351	1.0000					
Papunësia	0.0183	0.7828	0.2156	-0.5009	0.3059	1.0000				
eksporti	0.3759	-0.3563	0.8958	0.1520	0.1197	-0.1322	1.0000			
importi	0.5916	0.2049	0.4998	-0.2023	0.2361	0.2717	0.4730	1.0000		
borgjipublik	-0.0396	-0.8978	-0.2114	0.6536	-0.1968	-0.9232	0.1250	-0.2555	1.0000	
normaeinte~t	-0.2309	0.0940	0.2698	-0.0979	0.4673	0.3023	0.1639	-0.1067	-0.1863	1.0000

Source: Results from Stata.

To analyze the variables we have presented the correlation matrix, the ratio between public revenues of macroeconomic factors, where we note that import is the only variable with a strong positive correlation with (0.59).

4.1. SPECIFICATION OF THE ECONOMETRIC MODEL OF THE THEORY

In this part of the paper we will first select the most specified model, commenting on the relevant values which we have considered when selecting the most specified model. Shortly afterwards we will proceed with a comparative analysis of the three potential evaluators, the OLS evaluators, the Fixed Effects (FE) evaluators and the Random Effects (RE) evaluators, whom we have applied to calculate the results of our specified model.

Table 3. *Results of Regression*

Table	Model	R^2	R^2-Adj
1	Public Revenues-Remittances	0.0013	-0.0486
2	Public Revenues - Remittances, GDP	0.2201	0.1380
3	Public Revenues - Remittances, GDP, Investments	0.2342	0.1065
4	Public Revenues - Remittances, GDP, Investments, Inflation	0.2346	0.0545
5	Public Revenues - Remittances, GDP, Investments, Inflation, Unemployment	0.3169	0.1034
6	Public Revenues - Remittances, GDP, Investments, Inflation, Unemployment, Exports	0.3335	0.0670
7	Public Revenues - Remittances, GDP, Investments, Inflation, Unemployment, Exports, Imports	0.5770	0.3655

8	Public Revenues - Remittances, GDP, Investments, Inflation, Unemployment, Exports, Imports, Public Debt	0.5896	0.3371
9	Public Revenues - Remittances, GDP, Investments, Inflation, Unemployment, Exports, Imports, Public Debt, Interest Rate	0.6438	0.3767

Source: Results from Stata

Based on the results of comparative analysis, in this study we conclude that the most powerful model is the tenth model in which we have: Public Revenues - Remittances, Economic Growth, Investments, Inflation, Unemployment, Exports, Imports, Public Debt, Interest rate where ***R² 0.6****438* and ***R² - Adj 0.3767***. This means that the variables x, explain 64.38% of the variation in y. The remainder of the variation is explained by other factors which are not included in the model, and by choosing this model we will proceed with a comparative analysis of potential evaluators: The simple OLS evaluator, the FE fixed effects evaluator.

4.2. ORDINARY LEAST SQUARES (OLS) AND FIXED EFFECTS MODEL (FE)

$$F(1, 11) = 0.68. \text{ Prob} > F = 0.4256$$

In our case, the probability of making a type 1 error, in the F test of the fixed effect results is equal to 0.4256, gives us to understand that 42.56% is likely to make type 1 errors if we reject hypothesis 0, i.e. we do not reject hypothesis 0, which means that the fixed effects are equal to 0, we accept hypothesis 0, which means that the fixed effects are insignificant. We can say that the fixed effects are not statistically significant, so in our model the OLS estimator is preferred over the FE fixed effects estimator.

Models of Breusch and Pegan, xt test.

$$\text{Chi2}(1) = 1.10$$

$$\text{Prob} > \text{chi2} = 0.2951$$

The probabilities of making type 1 error is 0.2951 let us understand that 29.51% is likely to make type 1 error if we reject hypothesis 0, so we accept hypothesis 0, the fixed effects are equal to 0, so we accept OLS.

Model of Regression

Table 4. *Regression Results*

Source	SS	df	MS		
				Number of obs	= 22
				F(9, 12)	= 2.41
Model	.001735369	9	.000192819	Prob > F	= 0.0786
Residual	.000960088	12	.000080007	R-squared	= 0.6438
				Adj R-squared	= 0.3767
Total	.002695457	21	.000128355	Root MSE	= .00894

TëHyratPublike	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
remitancat	.2023756	.2794427	0.72	0.483	-.4064777	.8112289
rritjaekonomike	.5585781	.2329899	2.40	0.034	.0509367	1.06622
investimet	-.0215443	.0589127	-0.37	0.721	-.149904	.1068155
inflacion	.1079027	.1895129	0.57	0.580	-.3050105	.5208158
Papunësia	-.0192486	.0666917	-0.29	0.778	-.1645573	.1260602
eksporti	-.1423181	.084821	-1.68	0.119	-.3271272	.0424911
importi	.0486174	.0320622	1.52	0.155	-.0212401	.1184749
borgjipublik	.0360524	.0351307	1.03	0.325	-.0404908	.1125955
normaeinteresit	-.1442732	.1067777	-1.35	0.202	-.3769218	.0883753
_cons	.2579712	.0653563	3.95	0.002	.115572	.4003705

In the regression table we have presented 22 observations where the independent variables explain the dependent variable with 64.38% which means that these factors are key to explain the impact of macroeconomic factors on public revenues.

Based on the regression model, we explained the higher and lower values of the independent variables and their impact on the dependent variable, on public revenues.

Based on the model and keeping other variables constants (Ceteris Paribus), economic growth (GDP) is significant or has explanatory capabilities since the coefficient t> 1.69, an economic growth of 1% will increase public revenues by 2.4 %. Kosovo and Albania need to boost economic growth in order to increase public revenues in their countries.

Taking the other variables as constants (Ceteris Paribus) the public debt is not significant or has no explanatory capacity since the coefficient t <1.69, a 1% reduction in exports, public revenues will fall by 1.68%. Kosovo and Albania should promote export growth by supporting domestic production through various policies such as subsidizing domestic products, granting agricultural loans with lower interest rates, improving the environment for doing business, encouraging foreign investment, etc.

U- represents the stochastic element (error term) which includes all other factors that have an impact on public revenues, but we did not present them in the model. In this case it is 35.62%.

5. CONCLUSIONS

Based on our research on the impact of macroeconomic factors on Public Revenues in both Kosovo and Albania, the highest impact has economic growth, exports and imports.

Public Revenues are problematic not only in Kosovo and Albania but also in the countries of the Region in general due to non-declaration of revenues by businesses.

Political and economic problems are the main determinants due to the lack of economic development in both Kosovo and Albania, which is directly affecting the stagnation of their economic development.

So, the lack of state economic and legal regulation are the main challenges not only for Kosovo but also for Albania as it is leaving room for abuse and corruption.

The government should pay attention to good money management which should be carefully planned and monitored so as not to impose an increase in public debt that could put it in difficulty in repaying high-cost liabilities. Current capacities for job creation and economic development must be measured, and to the extent of those capacities, budget planning must be done and not get into uncontrolled debts that would be paid by future generations.

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