Econometric analysis of the impact of public revenues on Kosovo's economic development

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Abstract

A country can be economically viable when the human, physical, and financial resources available are effectively used to ensure the economic growth and well-being of its residents. The purpose of this study is to ascertain whether government revenues (GR) have a positive effect on the HDI, which would prove the hypothesis that government revenue is an important instrument of economic development in Kosovo. The data source for this study are for the period 2004-2016 received by the Ministry of Finance of Kosovo, the International Monetary Fund and UNDP. OLS techniques (multiple regressions) are used to analyse the generated data. In the econometric analysis we have used two models, the first being the correlation between the variables set in the model between government revenue (GR) and the Human Development Index and the second the government revenue and GDP. The results obtained from the first econometric model show government revenues have a positive impact with a 0.96 percent correlation, respectively 96.7 percent. Based on this, we conclude that government revenues have a positive impact on Kosovo's economic growth. While the results derived from the second econometric model show that the level of significance is 0.955, and in this case the result negates the hypothesis that revenues have an impact on the human development index in Kosovo. Taking into account the results of this research, Kosovo institutions need to review their decisions and take important steps to capitalize the collected taxes and fees to increase the welfare of the population by investing more in education, health and Social welfare

Keywords: Public Revenue, Economic Growth, Economic Development, Human Development Index, Gross Domestic Product.

Introduction

Kosovo experienced a total collapse of the economic and fiscal system in the 1990s. Immediately after the end of the armed conflict and after the declaration of independence from Serbia, it built a new economic system that enabled it to raise public revenues to cover public spending (Shala, 2017). A country can be economically viable when the human, physical, and financial resources available are effectively used to ensure the economic growth and well-being of its residents. Resource support is important but effective use of these resources to ensure sustainable development and growth of welfare is even more important. The development process is linked to a variety of policies, including: financing development and public infrastructure, regulatory framework, government intervention, and industrial policy. Strong, market-oriented and economic-political stability has proven to be important factors, especially for transition economies. (Mustafa dhe Zogaj, 2009). In Kosovo and beyond, much research has been done on the effect of public revenues on economic

growth and development (Mustafa dhe Zogaj, 2009).; (Shala, 2017); (Lecaj, Baftiu and Sylaj, 2015). Most researchers investigated the effect of tax revenues on economic development using the Gross Domestic Product (Shala, 2017); (Anastassiou and Dritsaki, 2005); which is an indicator for measuring economic growth (Okafor, 2012); (Worlu, C.N. and Emeka, 2012).

Research and experience from many countries suggests that economic growth is ensured through improvements in education, quality of financial management, open market and availability of public infrastructure (Mustafa dhe Zogaj, 2009). There may be an increase of GDP without any actual improvement in the standard of living of the people and resulting in economic growth without development (Tejvan, 2015). Based on previous analyses and taking into account the authors' research (Ofoegbu, Akwu and Oliver O, 2016) whose first objective was to assess the effect of tax revenues on economic development using the Human Development Index (HRD).

Literature

Public revenue

Today in the world there are extensive literature that deals with the theoretical and empirical view of public revenues and their impact on the growth and economic development of the country. This literature is diverse and of different countries that deal with this problematic. The reason for this literature is quite wide is because the sources of public revenues are varied and for this reason there is a wide range of research literature (Kadriu, 2012); (Komani, 2008); (Leliqiq, 1985); (Kryeziu, 2012). The contemporary state cannot exercise public activity without the system and the policy of public revenue formation in order to finance general and joint expenditures. Financial resources, which carry out state functions, economic science and finance in general, are called public revenues. We find the origins of public revenues in the early stages of the development of social economic relations. In the primitive community, common life has required the fulfilment of some common needs and for this purpose should have access to public revenues (Kadriu, 2012). Public revenues are one of the main indicators in calculating the country's GDP. Kosovo's post-war governments, in addition to other state and social segments, have also underwent radical reforms in the development of fiscal policy, which have influenced the formation of revenues, engaged in the construction of the tax system and other instruments Which are in the function of preserving the country's macro-fiscal sustainability (Kryeziu, 2012).

Economic growth

Economic growth is an increase in the capacity of an economy to produce goods and services, compared from one period of time to another. This can be measured in nominal or real terms, the latter being adjusted for inflation. Traditionally, the growth of the economic aggregate is measured in terms of gross national product (GNP) or gross domestic product (GDP). With the economic growth, many theorists and big economists of the time have taken over. (Smith, 1776) Explained that economic growth (production) depends on the amount of imputations (land, labour and capital) and production is determined by population growth, investment growth and land

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in general. David Ricardo explains the economic growth through increased labour productivity and favourable trade between different countries. (Solow, 1956) In his model of economic growth states that capital accumulation and exogenous rates of population change and technological progress are sources of growth. (Romer, 1986) Explain that long-term economic growth is determined by economic incentives. A country's economic growth is usually indicated by an increase in the country's GDP or GDP. Generally speaking, the gross domestic product is an economic model that reflects the country's production value. In other words, a country's GDP is the total monetary value of goods and services produced by that country for a certain period of time.

Economic development

The economic development of a country is usually indicated by an increase in the quality of life of citizens. 'Quality of life' is often measured using the Human Development Index, which is an economic model that considers personal internal factors that are not considered in economic growth, such as literacy rates, longevity and poverty rates. While economic growth often leads to economic development, it is important to note that a country's GDP does not include domestic development factors such as free time, environmental quality, or freedom from oppression. Using the Human Development Index, factors such as literacy rates and life expectancy generally imply a higher income per capita and therefore show economic development. The term economic development is a term that is misunderstood and interpreted in different ways, depending on the daily and extreme interests. The concept of term economic development traverses a process that has long duration and persistence can not be achieved for 5 or 10 years but is achieved by fulfilling economic and social premise, affecting the life of any person of that country, hence the basic concept Of economic development is that there is no time when it can be achieved, and depends on many factors influencing and determining the achievement of economic development. The problem of dealing with this economic term lies in the fact that many countries view the concept of economic development in different ways and in different meanings, while the paper will be based on the concepts and meanings, which are the consensus of international economic organizations, Which have established the basic perimeter and builders of economic development, enabling the change in some points, depending on the country's economic policies that will be dealt with in the paper. Building parameters of economic development are very crucial in achieving the prerequisites for economic development, and these parameters include various fields, such as: investment in projects that bring and influence the lives of citizens after the completion of that economic project, the increase in the degree of Education, the eradication of illiteracy, the absence of extreme poverty, GDP growth per capita, and many other factors, which are elements to the achievement of the economic development concept.

Fiscal policy in co-operation with other government policies is of particular importance in the national economy that would help shape the financial strategy and strategic development objectives, as well as the largely private sector analysis that should constantly play the leading role in the development of National economy

(Lecaj, Baftiu and Sylaj, 2015). The efficiency of a fiscal system is particularly related to the characteristics of a tax as an instrument for implementing various economic policies, promoting economic development, achieving special structural changes, etc. (Pere and Hashorva, 2011).

Public revenues in Kosovo

Thanks to fiscal policy instruments, Kosovo generates public revenues, namely budget resources from own sources. Thanks to economic development, budget funds have been increased for each budget year, which is expressed in the Government's efficiency in performing general and shared obligations to citizens and advancement in capital investment (Pantina, M Badivuku and Maloku, Erdin, 2012) According to the author (Kryeziu, 2012), Kosovo's governments since the war, in addition to other state and social segments, and in the development of fiscal policy have made radical reforms, which have influenced the formation of revenues, engaged in the construction of the system Taxation and other instruments, which are in the function of preserving the country's macro-fiscal sustainability. In this context, during 2009, the Kosovo government has implemented tax reform, which is focused on reducing tax rates that has resulted in maintaining and increasing revenue sustainability not only through working instruments but also through the strengthening of two Institutions responsible for collecting or collecting the means that generate revenue or public revenues: Tax Administration and Customs.

Kosovo in the post-war period has built up a new fiscal system, oriented mainly towards harmonization with European standards. Taxes have played and remain of particular importance, both in terms of budget revenue collection and participation in Gross Domestic Product (GDP) (Berisha, 2015).

Within the overall budget revenues are included income from taxes, non-tax revenues and revenues collected from central and local government services. In the general public (budget) revenues, also include other revenues received from donors and borrowers, etc.

Methodology

The design chosen for this research is the econometric technique used to analyse the effect of public revenues on economic development in Kosovo. The source of data for this study is data from the time series 2004-2016 received by the Ministry of Finance of Kosovo, the International Monetary Fund and UNDP. OLS techniques (multiple regression) are used to analyse the generated data.

The data were analysed using the OLS method. This technique is also used by other researchers such as (Okafor, 2012); (Ihenyen and Mieseigha, 2014); (Ofoegbu, Akwu and Oliver O, 2016). This research is based on the model (Koutsoyiannis, 1977):

$$HDI = \square + \beta lnGR + \varepsilon \ .... (1)$$

Where: HDI = Human Development Index,
$\square$ = Constant,
β = regression coefficient,

GR = Government Revenue and
ε = Error term.

Table1: Government Income (GR) Gross Domestic Product (GDP) and Human Development Index in Kosovo (2004-2016).

PERIOD	GOVERNMENT REVENUE	GDP	HDI
2005	616.369	2,912.000	0.734
2006	639.448	3,002.760	0.734
2007	731.575	3,120.410	0.740
2008	914.641	3,460.770	0.745
2009	955.370	3,882.800	0.745
2010	1,160.697	4,069.600	0.745
2011	1,171.837	4,102.000	0.663
2012	1,307.220	4,818.500	0.663
2013	1,333.098	5,058.700	0.714
2014	1,325.157	5,326.600	0.714
2015	1,344.912	5,567.500	0.786
	1,470.130	5,788.300	0.786
	1,601.950	5,863.000	0.742

Source: (MF, 2005-2015)

The HDI for the years 2005, 2008-2009, 2011, 2013 and 2015 has not been measured by UNDP and for the purpose of this research the data from the previous year were taken. Until now, UNDP has measured the HDI in Kosovo for the years 2004, 2006, 2007, 2010, 2012, 2014 and 2016. The effect of government revenues on economic growth in Kosovo is the GDP used. This research is done to enable comparison Of the results and the model used is as follows:
GDP = □ + βGR + ε .... (2)

Results and Discussions

In addressing the econometric analysis for the two models used, the correlation between the variables set in the model will be treated, where the correlation between total revenues (TR) and GDP is positive, with a correlation of 0.967, while with the index of Human development (HDI) is also positive, but with the weakest positive relation (0.017).

Table 2: Correlation

Correlations[b]		GR	GDP	HDI
GR	Pearson Correlation	1	.967[**]	.017
	Sig. (2-tailed)		.000	.955
GDP	Pearson Correlation	.967[**]	1	.158
	Sig. (2-tailed)	.000		.606
HDI	Pearson Correlation	.017	.158	1
	Sig. (2-tailed)	.955	.606	
**. Correlation is significant at the 0.01 level (2-tailed).				
b. Listwise N=13				

Source: Author's calculation

In the first econometric model, use the HDI (human development index) as a dependent variable, while TR is the total income as an explanatory variable (independent variable). From the results of Table 2, the correlation statistics show that the VIF factor with the highest value in the regression coefficients is 1,000, which means that all independent variables are less than 10 (VIF <10), shows that there are Not very high, but relatively strong collinearity, which implies that the multicolleniarity of the data within the model does not pose any problems with the data being used. The significance level 0.955 dismisses the hypothesis that the income has an impact on the human development index, and we approve the hypothesis that the income does not impact the human development index (HDI).

The functional form of the econometric model (1) is:

$HDI_t = 0.729 + 0.000002018TR_t + \varepsilon$

Table 3: Linear regression coefficients

Coefficients[a]											
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	.729	.041		17.921	.000					
	GR	2.018E-006	.000	.017	.058	.955	.017	.017	.017	1.000	1.000
a. Dependent Variable: HDI											

Source: Author's calculation

In the second econometric model we use GDP, as a dependent variable, while TR is the total income as an explanatory variable (independent variable). Based on the calculations made in Table 3, the econometric model results derived from the model data show that the dependent variable has a strong correlation with the explanatory variables at the level of .967, respectively 96.7 percent. While R2 in our analysis is .935,

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which indicates that 93.5% of the dependent variables are explained by independent variables. The adjusted R2 is equal to .929, which indicates that 92.9 percent of the variance of the dependent variable is explained by the variation of independent variables. The F-test equals .000 indicates that all coefficients together are statistically significant and different from zero.

Table 4: Summary of the Model

Model Summaryᵇ									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.967ᵃ	.935	.929	288.96111	.935	157.217	1	11	.000
a. Predictors: (Constant), GR									
b. Dependent Variable: GDP									

Source: Author's calculation

From the results of Table 4, the correlation statistics show that the VIF factor with the highest value at regression coefficients is 1,000, which means that all independent variables are less than 10 (VIF <10), indicates that there is Not very high, but relatively strong collinearity, which implies that the multicolleniarity of the data within the model does not pose any problems with the data being used. The level of significance 0,000 ignores the hypothesis that income does not affect GDP, and we approve the hypothesis that income has an impact on economic growth (GDP).

The functional form of the econometric model (1) is:

$GDP_t = 730.949 + 3.258GR_t + \varepsilon$

Table 5: Econometric model coefficients

Coefficientsᵃ											
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	730.949	302.054		2.420	.034					
	GR	3.258	.260	.967	12.539	.000	.967	.967	.967	1.000	1.000
a. Dependent Variable: GDP											

Source: Author's calculation

Conclusions

The main purpose of this research was to investigate the impact of government revenue (GR) on the Human Development Index as an important indicator in measuring the economic development. In the econometric analysis we have used two models: the first model was the correlation between the variables set in the model between government revenue (AG) and the Human Development Index (HDI), and the second model is the correlation between government revenue and GDP . The results obtained from the first econometric model show government revenues have a positive impact with a 0.96 percent correlation, respectively 96.7 percent. Based on this, we conclude that government revenues have a positive impact on Kosovo's economic growth. While with the Human Development Index (HDI) the correlation

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is also positive, but with a weaker correlation (0.017) with a significance level of 0.955, and this case ignores the hypothesis that incomes have an impact on the human development index in Kosovo. As the results of the economic analysis show that the impact of government revenues in the HDI is weak, we conclude that government revenues in the case of Kosovo do not have a positive impact on the economic growth of the country. Many researchers have raised this issue even earlier by asking the country's institutions to spend the money collected by the country's taxpayers to reduce unemployment, to invest more in raising quality in education, health and adult education Social welfare in general.

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