

TAX REVENUE - THE DETERMINANT FACTORS- THE CASE OF ALBANIA

Entela Velaj, MSc.
Llambi Prendi, MSc.

University “Alekdandër Moisiu”, Durrës/Albania

Abstract

The purpose of this paper is to analyze the factors that will increase or will reduce revenues from taxes collected by the government. The variables that we have took in consideration are GDP, inflation, income tax, unemployment and imports. We have used the statistical analysis to see if there is a connection between the variables that we have chosen as explanatory ones. Through the use of the logarithmic function we will see how flexible is the GDP of our country related to income from taxes and government spending. The data that we have analyzed are obtained from the Ministry of Finance, INSTAT, World Bank, etc..

Keywords: *GDP, Tax, infation, elasticity, income*

Introduction:

The revenue collected from taxes, economic growth, inflation, unemployment, etc. have become more and more concern for the economies of different countries. Income taxes are one of the tools that the government will use and for governmental spendings. The Albanian government classifies revenues as a) income tax, b) non-tax revenues and grants. Tax revenues include both direct taxes and indirect ones. Direct taxes include taxes such as corporate profit tax or personal income tax, property tax, social and health contributions and indirect taxes include taxes such as excise, VAT, customs duties, etc.. Tax revenues are allocated from a) Income Tax and Customs, b) local government, and c) special funds. Non-tax revenues include income from various service fees, revenue from budgetary institutions, interest, investment returns but the ones from privatization receipts are included as financing for deficit in. Income from income assistance are received from different donors or governments of other countries. If we refere to the last 20 years (1993-2013) we will notice that income from taxes has an increasing trend. The biggest amount of the taxes is collected from taxes and customes.

Government spending in our study include government fees refundable for the purchase of goods, services, transfers and interest payments, for performing of the state. The questions that we adress are:

Which is the relationship between GDP growth, inflation rate, unemployment, increased imports and increased tax revenues? Is this relation significant? How flexible is the country's GDP versus tax revenues and government spending?

Methodology

To achieve the conclusions of this study we used the program SPSS. The data consists of independent variable and dependent variable which are GDP, inflation rate, unemployment and Imports. Pearson coefficient of correlation is used to the extent of relationship among different variables. The analyzed information is provided by the Albanian Ministry of Finance , World Bank and INSTAT. The data will be analyzed through the analyses of Beta

coefficient. We have used this measure in order to understand the connection between dependent and independent variables. The Coefficient of determination R-square is used to explain the dependent variables in the regression analyses.

T-statistic is used to identify the significance of each dependent variable with the independent variable and after we use F-test to test the significance of all all independent variables.

Standard Error of Estimation (SEE) is used to test the level of confidence and multiple regression analysis.

Definitions

GDP shows the market value of all final goods and services produced in the economy of a country for a given period of time. The variable used for the study is growth Annual Percentage rate of GDP at market prices based on constant local currency. Inflation rate measures the increase in price index. We also use it to calculate the real interest rate. If the stated interest rates are high, individuals have higher borrowing costs, so generally it causes economic slowdown due to the decrease of investment.

Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly. The Laspeyres formula is generally used.

A high unemployment rate means less income for individuals, less consumption, less production, and creates a situation of recession for the economy.

In our study was obtained (Unemployment, total (% of Total Labor Force) (modeled Estimate ILO) Unemployment refers to the share of the Labor Force That is without-works but available for and Seeking Employment. Definitions of Labor Force and Unemployment differ from one country to another.

In Albania employed people are defined as people that have an age of 18 years who can have a job as employed or as self-employed who are declared at the General Directorate of Taxation.

According to our law “job seeker”, is every unemployed individual, who appear periodically in the relevant employment office. Considered and such persons are employed or self-employed, but seeking a new job. Job seeker is a person who:

- a) lives in Albania
- b) older than 18 years old
- c) appear in person at the Employment Office to seek for a job
- d) able to work

Imports of goods and services represent the value of all goods and other market services received from the rest of the world. They include the value of merchandise, freight, insurance, transport, travel, royalties, license fees, and other services, such as communication, construction, financial, information, business, personal, and government services. They exclude compensation of employees and investment income (formerly called factor services) and transfer payments. Data are in current local currency.

Theoretical background

1. If the rate of inflation will increase total tax revenues will fall. There is a negative relationship. Lucotte (2010)
2. If GDP will grow, the revenues collected from taxes will increase. There is a positive correlation. CLAUSING (2007)
3. If unemployment will increase revenue collected from taxes will be lowered. There is a small negative relationship. Kubatov and Rihova (2009)

4. If grows dote% growth that Imports of Goods and Services, collected tax revenues will increase. (Qazi 2010)

Regression analysis

Y dependent variable, (tax revenue growth %)

GDP independent variable, GDP growth (annual %),

Ir independent variable, inflation rate

Un independent variable, unemployment rate

Im independent variable, Imports of goods and services (annual % growth).

$$Y = \alpha + \beta_1 \text{GDP} + \beta_2 \text{Ir} + \beta_3 \text{Un} + \beta_4 \text{Im} + \varepsilon$$

With the given data we have run the regression for Albania where Y represents the dependable variable and represents the Tax revenue of the country while others are the dependable variables .

Regression

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.853 ^a	.728	.651	9.1723454

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3158.785	4	789.696	9.386	.001^a
	Residual	1177.847	14	84.132		
	Total	4336.632	18			

a. Predictors: (Constant), Imports of goods and services (annual % growth), Inflation, consumer prices (annual %), GDP growth (annual %), unemployment

b. Dependent Variable: tax revenue growth %

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	19.757	11.455		1.725	.107
	Inflation, consumer prices (annual %)	1.764	.369	1.025	4.783	.000
	Unemployment	-1.867	.837	-.465	-2.231	.043
	GDP growth (annual %)	2.828	.551	.910	5.128	.000
	Imports of goods and services (annual % growth)	-.220	.183	-.178	-1.206	.248

From the regression analysis we notice that our model represents 72.8% of the variation in the values of the dependend variableY, that can be explained by variation in the value of the independend variables **GDP, Ir, Un, Im** and this model is statistically significant (F = 9.386) because the p-value (0.001) is smaller than $\alpha=0.05$.

It is also statistically significant for the independent variable *Ir* because it has a p-value of 0.000 which is smaller than the $\alpha=0.05$ taken by us as a point of reference for this study, but is a positive relationship. The independable variable *GDP* , is also statistically

significant because it has a p-value of 0.000 . The independent variable of unemployment is also statistically significant p-value =0.043. We can say that are not statistically significant independent variable *Im* and *constant* because their p-value are higher than the α under study.

The relationship is explained by the relation :

$$Y = 1.764Ir - 1.867 Un + 2.828GDP + \varepsilon$$

We have to mention that the relationship between % of increase in income from taxes and the % of imports results to be insignificant.

If we refer to the relationship between income collected from taxes and imports we will notice that this relationship shows to be very important according to the parameters below;

Y dependent variable, tax revenue (current LCU)

Im independent variable, Imports of goods and services (current LCU)

$$Y = \alpha + \beta_1 Im + \varepsilon$$

After data analysis we notice that:

Regression

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.995 ^a	.990	.990	9.7522038

a. Predictors: (Constant), Imports of goods and services (current LCU)

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	162510.112	1	162510.112	1708.736	.000 ^a
	Residual	1616.793	17	95.105		
	Total	164126.905	18			

a. Predictors: (Constant), Imports of goods and services (current LCU)

b. Dependent Variable: tax revenue (current LCU)

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	11.223	4.222		2.658	.017
	Imports of goods and services (current LCU)	4.197E-10	.000	.995	41.337	.000

From the regression analysis we notice that our model represents 99% of the variation in the values of the dependent variable *Y*, that can be explained by variation in the value of the independent variable *Im*, and this model is statistically significant because the p-value (0.000) is smaller than $\alpha=0.05$.

Also is statistically significant for the constant because it has a p-value of 0.017 which is smaller than the $\alpha=0.05$ which we have taken as a point of reference for this study.

$$Y = 11.22 + 4.19 Im + \varepsilon$$

Elasticity of GDP against income tax and government expenditure

Elasticity will show the change in percentage of GDP versus percentage change in tax revenues and government spending.

This will be achieved through the logarithmic function is where I hung logGDP-length, while independent variable will be the log of income tax (logTR) and the log of government spending (logGS). The equation would have the form:

$$Y = \alpha + \beta_1 \log TR + \beta_2 \log GS + \varepsilon$$

Data refer to the period 2001-2013. After data analysis in SPSS we have this results:

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.984 ^a	.968	.961	.02120

a. Predictors: (Constant), LOGgovernment spending., LOG tax revenue

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.136	2	.068	150.808	.000^a
	Residual	.004	10	.000		
	Total	.140	12			

a. Predictors: (Constant), LOGgovernment spending., LOG tax revenue

b. Dependent Variable: LOGGDP

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.032	.349		5.819	.000
	LOG tax revenue	.626	.217	.871	2.890	.016
	LOGgovernment spending	.098	.258	.115	.380	.712

a. Dependent Variable: LOGGDP

From the regression analysis we notice that our model represents 96.8% of the variation in the values of the dependend variable Y, that can be explained by variation in the value of the independend variables logGDP and log TR, and this model is statistically significant because the p-value (0.000) is smaller than $\alpha=0.05$.

Also is statistically significant for the constant and log tax revenue because they have a p-value of 0.000 and 0.016 which is smaller than the $\alpha=0.05$ which we have taken as a point of reference for this study. We can say that is not statistically significant independable variable Log GDP because theirs p-value are higher than the α under study.

$$Y = 2.032 + 0.626 \log TR + \varepsilon$$

The coefficient 0.626 explains the elasticity of GDP related to taxes. Since its value < 1 then we say that GDP is not elastic. With an increas of 1% in tax revenues, GDP will grow only by 0.626%.

Conclusion:

According to the analysis that we have conducted we come to the conclusion that the increasing rate of income tax in Albania is directly related to the rate of inflation, with the unemployment rate and the growth rate of GDP. Revenue from taxes in Albania have a growing trend for the entire study period 1993-2013 except for 2012 where we have a decrease of 1%. It is not associated with the growth rate of imports. There is a positive correlation of percentage growth of revenues from taxes with the rate of inflation and the GDP growth rate, while the link with unemployment is negative.

On the other hand tax revenues are directly related to imports and this relationship is positive. With the increase of 1 unit of imports and tax revenues will increase by 4.19 units.

Also, we concluded that the GDP of Albania is not resilient against income tax. with growth of 1% of GDP tax revenues increase by only 0.626%.

References:

CLAUSING, K.A. (2007): Corporate Tax Revenues in OECD Countries, International Tax and Public Finance 14(2), 2007.

KUBATOVA and Rihanova (2009) Factors affecting revenues from corporate tax

LUCOTTE, YANNICK, 2010. "The choice of adopting inflation targeting in emerging economies: Do domestic institutions matter?," MPRA Paper27118, University Library of Munich, Germany.

MINEA and VILLIEU (2009) Can inflation targeting promote institutional quality in developing countries?

QAZI (2010) Determinant of Tax Buoyancy: Empirical Evidence from Developing Countries, European Journal of Social Sciences, Vol. 13, No. 3, pp. 408-418, 2010

Website

Minfin.gov.al

Bankofalbania.org

Worldbank.com

Instat.gov.al