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Taxation Impact On Economic Growth *In European Union*

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ABSTRACT

This paper analyze the economic growth in European Union and the impact of taxation system on it, we analyzed the relation between taxes level and economic growth in the European Union. In the first part, we present theoretical aspects referring to economic growth, European fiscal policies and tables which include tax revenues referring to both direct and indirect taxation, from different countries of EU and some charts which highlight the level of these taxes. We analyze the evolution of the taxation shared in GDP per capita as average indicators in several EU countries and also we compare different taxation systems of countries that use flat level of taxation versus countries that use progressive taxation. In the second part, we created an econometric model established on a simple linear regression, having the dependent variable economic growth and the independent variable as the taxation. In the last part, we indicated this paper's obtained conclusions.

Keywords: *Taxation, Fiscal policies, Economic growth*

Introduction

The economic growth is state economic policy one main objectives. The experience of many countries shows that most of the policies for economic recovery are using tax policy instruments which have a positive impact on the real economy state.

Economic growth is a complex process responsible for increasing results in the national economy, based on the combination and use direct inputs: labor, fixed capital and current assets consumption. Economic growth is desirable in each country it enables people to use more goods

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and services and at the same time to help ensure greater quantities of goods and social services such as health, education etc. Thus resulting in real improvements in living standards. Generally, a tax system promotes optimum performance when dealing with 4E, which are Equity (balance social income distribution in society and stimulate employment and entrepreneurship); Effectiveness (avoidance of taxes which distorts the economy); Economy (referring to possible cost savings in public revenue collection and pay the tax); Efficiency (promoted through an optimal taxation to maximize government revenue generated).

The "fiscal policy" concept is based on fiscal efficiency and a big yield, which will ensure incomes for the state budget as much as possible .The effectiveness of fiscal policy is often manifested by its impact on economic activity. So, through taxes, both direct and indirect, it interferes in the process of obtaining and distributing incomes, and in the same time in a state's financial results.

This reasoning aims to stimulate the economic activity and to ensure social protection. Also, as a part of macroeconomic policies, it acts as coordinator for the correlations between other policies such as budgetary or structural entrepreneurship. Economic growth is generally regarded as a prerequisite for improving living conditions, increase consumption, improving public services and unemployment and poverty reduction. Taxation serves to collect the necessary funds for structuring public expenditure to redistribute income (progressive taxation) to stabilize the economy, to address external effects (environmental taxes, taxes on alcohol and tobacco) and to influence resource allocation. In examining the effects of fiscal policy on economic growth, there are two lines of thought: i) the models of exogenous growth (Solow, 1956), fiscal policy has no impact on economic growth in the long term, assuming that the key factors for production such as of labor and technological progress are determined outside the model; ii) contrary, theorists of endogenous growth (from Barro, 1990, King and Rebelo, 1990; Lucas, 1990), who believe that economic growth is determined in the system argue that fiscal policy has an impact on economic growth and welfare over time.

The relationship between tax structure (distribution of revenue by type of tax) and economic growth has received attention both theoretical and empirical; findings in the literature have shown that taxes affect the allocation of resources and can often generate distortion behavior of economic agents. When it comes to economic growth, economic theory says that is generated by three inputs: labor, capital and technology, which are linked together by a production function. Taxes could alter the economic decisions regarding these factors and thus negatively / positively affect economic growth:

i) labor taxation affect the decision traders to participate in the labor market (number of hours and number of staff) and the decision to apply a higher level of education and entrepreneurial activity less (due to strong progressive income tax);

ii) taxation of capital investment influence householders decisions on investment and savings (savings ratio may deviate from its optimal level in terms of economic growth) and also influence corporate decisions regarding the location and volume of investments;

iii) research and development tax could reduce technological developments by making these activities less profitable.

iv) consumption taxation is often considered more favorable to growth, since distort intertemporal decisions (such as decisions on saving decisions between work and leisure), less powerful than taxing labor.

Given the currently weak economic recovery in many European countries, reforms are needed to boost growth. From financial crisis, EU Member States were faced with the difficult task of consolidating their budgets, while at the same time supporting growth. Redesign their tax systems could be a possible approach. In this regard, in recent years, Europe has a slight tendency to increase favorable tax systems, which have been redesigned mainly in northern European countries and Eastern Europe, while Central Europe has seen little change.

Gross domestic product (GDP) is the most commonly used measure for the overall size of the economy, while derived indicators such as GDP per capita - for example, in euro or adjusted for differences in price levels - They are widely used for a comparison of living standards, or to monitor economic convergence or divergence within the European Union (EU). Thus, the development of GDP components specific indicators, such as those for imports and exports, economic output, domestic consumption (public and private) and investment as well as data on income distribution and savings, can provide valuable insights on the main drivers of economic activity and thus be the basis for the design, monitoring and evaluation of specific EU policies.

Literature review

There are plenty of studies showing negative relationship between taxes and the percentage of growth promoting tax rates lowering. For example, Plosser, a study conducted in 1992 found a significant negative correlation between the level of taxes on income and profit (as a percentage of GDP) and real GDP per capita growth. Also, on the same line and in a similar time period, King and Rebelo (1990), found that an increase of 20% to 30% in direct tax may reduce the growth rate by two percentage points. Later, in 2008 Hill, Romero-A vila and Strauch or Johansson et al studied the impact that taxes may have on the GDP growth at the European Union and also the USA level; all of them discovered the same connection: on a long term, wrong fiscal policies can be harmful for the growth.

In 2009, Karras and Furceri examined the effects of tax changes on economic growth. Using a large panel 1965-2003 annual data for 19 European countries, the results showed that increasing the overall tax rate by 1% of GDP has an effect on real GDP per capita minus 0.5 % to minus 1% in the long term. But all these theories can be applied to any economy? Not for sure. There are also studies focused on the tax structure in the country and this structure will affect GDP. In this respect, in 1993, Easterly and Robelo developed a model that included 32 countries developing experience, a method for obtaining average rates marginal income tax that combine information on statutory rates with the income and tax collected data on income distribution. As you would expect, there is a positive correlation between their income marginal tax rates and the weighted average level of

real per capita income. This simply reflects the fact that developed economies tend to rely more on income taxes than less developed countries.

In 2013, the model was expanded in Latin America and Canvire-Bacarreza et al evaluated the effect of the most important fiscal instruments: personal income tax, corporate tax, general tax on goods and services, including value-added and other sales taxes, and income from natural resources, growth using auto regression techniques vector. They concluded that for the most part, personal income tax has no negative effect on economic growth expected in Latin America as it has in other economies, especially in Europe. They found also negative effects on lower income tax increase for individual countries, especially Argentina, Mexico and Chile. Finally, their results suggest that greater reliance on consumption taxes have a significant positive impact in Latin America in general (N'Yilimon Nantob 2014). Recently, in 2015, Mura investigated the relationship between composition tax and GDP growth in six Eastern European countries in the period 1995-2012 and the main empirical results indicate that direct taxes exert a significant negative impact on economic growth while indirect tax effects are positive but not statistically significant. This conclusion comes under that Eastern European countries seem to be in line with the suggestions in the literature, with lower direct tax shares and the increase of consumption tax.

Increasing competition between countries and increased demand for tax services in the country to be financed by publicly funded, to be designed in an efficient manner. In order to design effective tax systems it is essential to know how taxes are harmful and effect growth. Even in developed countries with stable tax system, with experience and excellent data, there are still many uncertainties about the complex topic of the effects of taxation on economic growth. Sure enough, there is no magical fiscal strategy to encourage economic growth in developing countries. Some countries with high tax burdens have high rates of growth and some countries with low tax burdens have low rates of growth. Despite much theoretical and empirical investigation and political controversy and politics, there is no simple answer regarding the relationship of tax on economic growth particularly in developing countries (N'Yilimon Nantob 2014).

Taxation and the economic growth in European Union

There are a lot of definitions in the literature referring to the tax, each of them refers to certain components of taxation. We believe that the definition of Larousse Dictionary exhaustive "taxation is the tax collection system, a set of laws and the means to apply it."

Taxation in any country operates as a tax system, which comprises three components:

- legal component - contains rules and other technical elements (Fiscal Code of Fiscal Procedure Code, State budget law, Public finance law and so on) ;

- procedural component (tax mechanism), which provides procedures for administering the budget income tax according to the Fiscal Procedure Code and the annual budget laws;

- institutional component (tax system) represented by the set of state institutions in the field, directly involved in the regulation and enforcement of tax revenues collect to the budget at central and local level (Ministry of Public Finance, through ANAF (the National Agency for Fiscal Administration)).

Tax influence each life of us. It shapes the relationship between citizens, businesses and state and has an impact on politics, economics and society. In the EU, many policy makers, academics and citizens interested in learning more about how the tax revenues of Member States' tax systems compare with each other. Taxation is divided into two components, direct and indirect taxes, the proportion of them in total tax revenues has a considerable importance referring to the distribution of incomes and in terms of economic growth. Taxation is an essential component of socio-economic life of a nation, and how it is achieved by fiscal policy of the state concerned. In other words, taxation policy is characterized by the ways in which the state sets its tax policies related to social and economic life, both to meet the necessary funds to finance its activities and to regulate market imbalances.

Differentiation of fiscal policies from one country to another determine manifestation of international tax competition, or in other words, a strategically tax context, within broader lack of cooperation between jurisdictions (countries or regions tax belonging to a federation) in which each side sets tax system based on fees charged by others. In other words, taxation competition in the EU is a fact, EU wants more discipline and cooperation among Member States and more benefits, giving up as little as possible on their sovereign rights in the field of taxation. However, although the fiscal context is coordinated by the EU institutions, each tax jurisdiction sets its tax policies in relation to the levels of taxation applied by other countries. In figure 1 and 2, based on information from Eurostat databases, we performed a comparison of direct and indirect tax revenue as a percentage of GDP as average for the period 2003 to 2015 for each EU Member State. It is noted that there are substantial differences between incomes from direct taxes recorded by the Member States, each state has the possibility of establishing its own fiscal policies, observing higher revenues from direct taxes in the Western Europe Member compared to Eastern European states, the highest level being recorded by Denmark and lowest in Bulgaria and Romania.

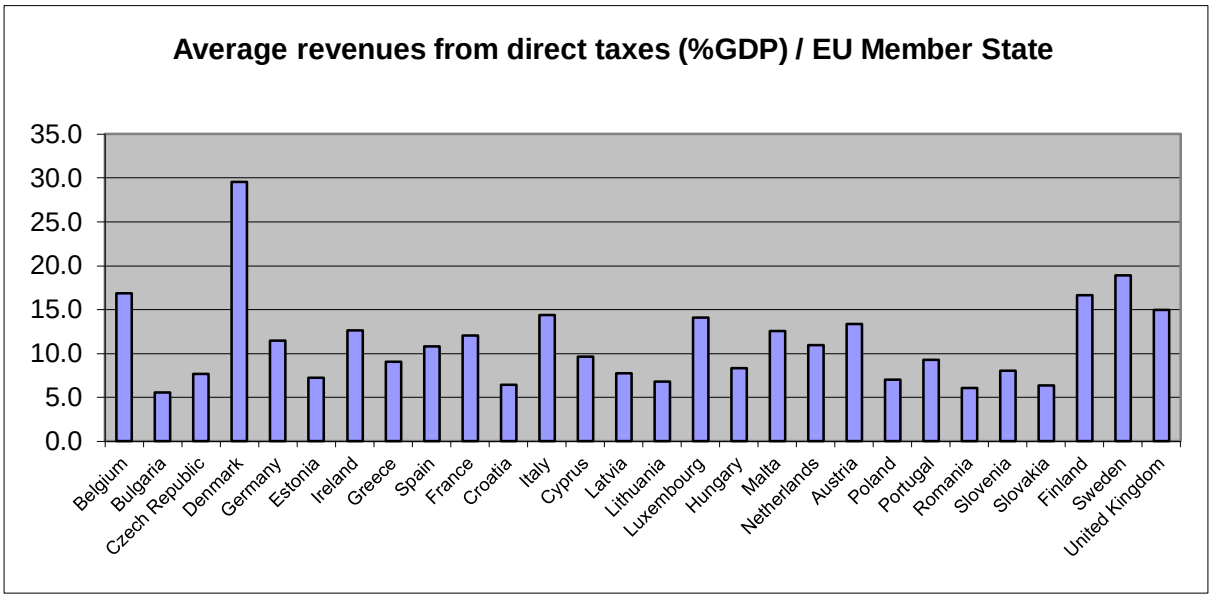

Figure 1: Average income from direct taxes in the EU (%GDP) / Member State;
Source: own representation, using Eurostat data

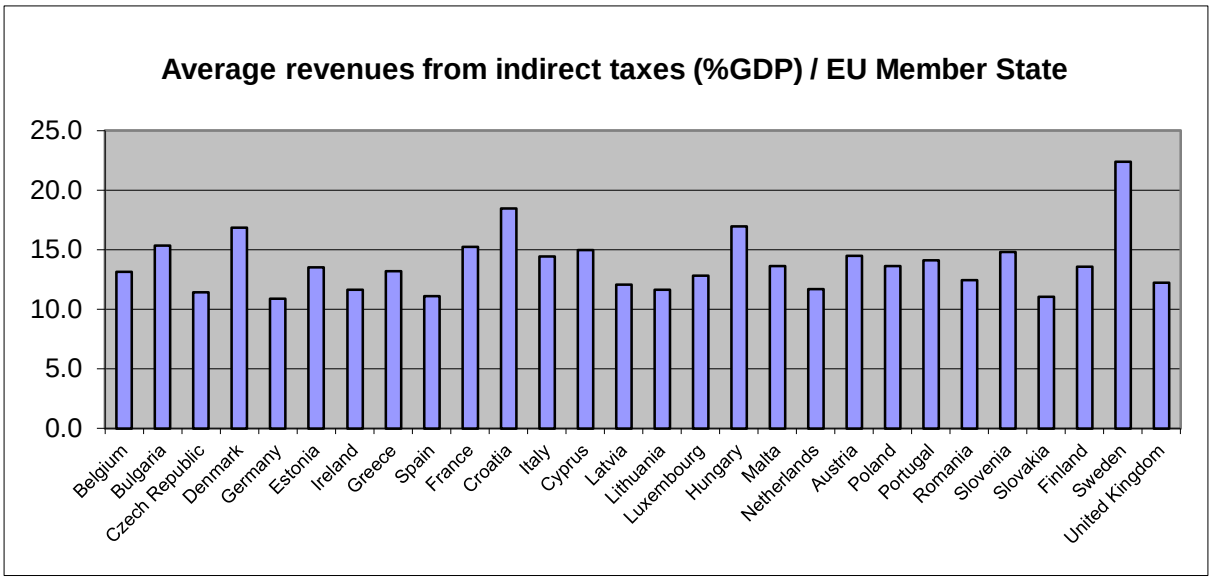

Figure 2: Average income from indirect taxes in the EU (%GDP) / Member State;
Source: own representation, using Eurostat data

However, in recent years, from the first quarter of 2009, revenues from direct and indirect taxes as a percentage of GDP declined in the European Union. In the charts below we can see that by 2007, there are no big changes, but from 2008 to 2009, when the crisis began in most countries, revenue collected decreased. What we represented on the chart is average, but the conclusion is that the most affected were the Central and Eastern European countries where tax revenue is based on indirect taxes, especially VAT.

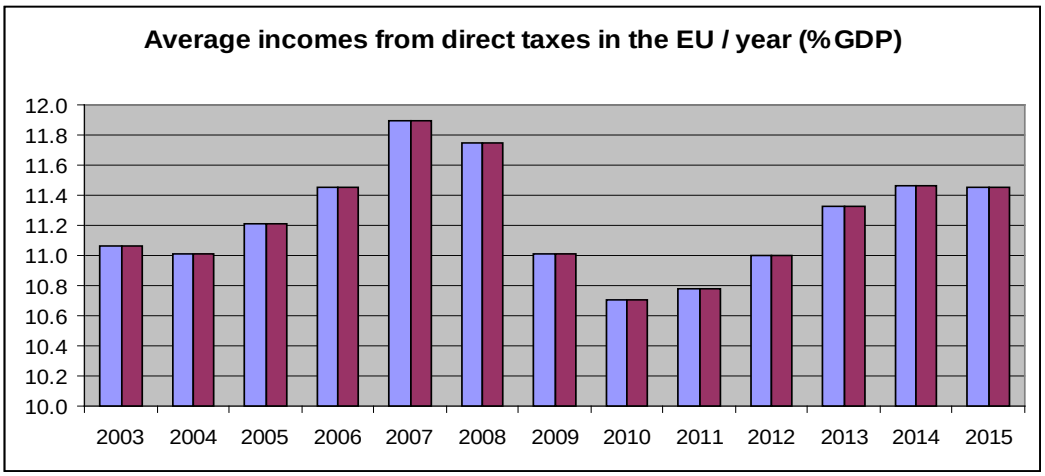

Figure 3: Average income from direct taxes in the EU / year (%GDP);
Source: own representation, using Eurostat data

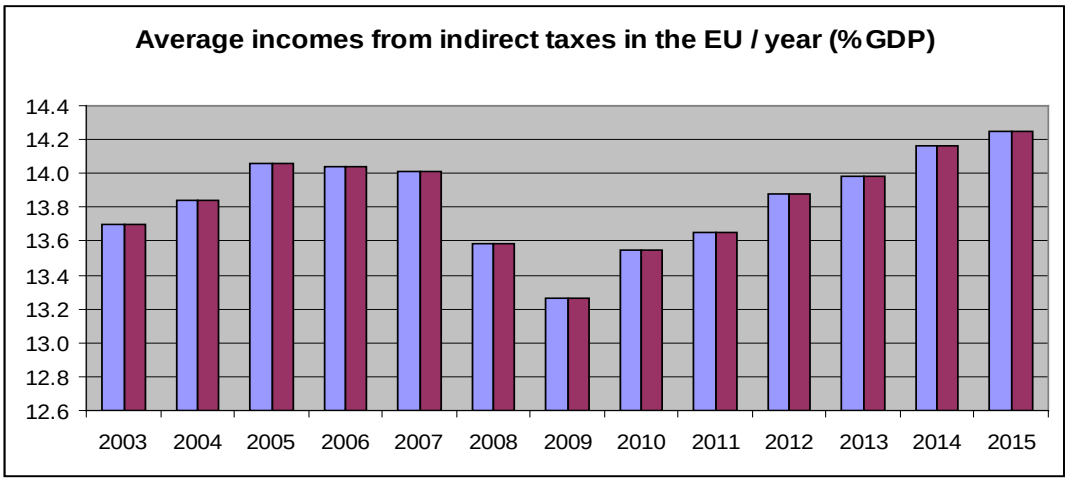

Figure 4: Average income from indirect taxes in the EU / year (%GDP);
Source: own representation, using Eurostat data

Although efforts to harmonize economic and political systems, economic globalization and the increasing mobility of capital has created the conditions for tax competition between Member States. At the same time, the economic integration processes led in the Union to specific problems of each Member State, including taxation issues, which can effect on other Member States, by producing distortions in the single market level.

Belonging to the single European market requires unquestionably practices harmonization in several areas of interest, among which is the taxation. In general, tax harmonization is induced by the necessity of national tax systems do not affect the four freedoms written into the Treaty on the establishment of the European Community: goods free movement, people and inventory movement, freedom to provide services.

Some experts when discuss about tax harmonization, most often about indirect taxes, but some aspects can be said of direct taxation. Where indirect taxation often influence the free movement of goods and services that require a high degree of harmonization, it does not happen the same with direct taxation. For a high degree of harmonization it is not necessary to harmonize direct taxation, which is strictly enforced within each Member State of the European Union. Therefore, most of the rules on direct taxation must be attributed entirely by each state because they are an attribute of their sovereignty. Regarding harmonization of direct taxation at EU level has led to the next goal: creating a common system of taxation applicable to suppliers, transfers of assets and stocks, transfer of shares between companies belonging to different Member States; creating a common system of taxation of profits between subsidiaries and mother company; a common system of taxation applicable to interest payments and equities among affiliated persons. The first directive in direct taxation was "Directive 90/434 / EEC on a common system of taxation applicable to mergers, grant and changes in the shareholding among companies belonging to different EU Member States".

In a simple way, economic growth can be defined as a gross domestic product from a country increase in a period of time with a significant economic importance because it enables increased living standards and helps in creating new jobs. The gross domestic product depends on a multiple of variables and can be calculated using different methods, one of them being the production one which is characterized by the following formula used in quarterly periods of time:

$$GDP = VA + T - PS,$$

Where:

GDP = Gross Domestic Product, VA = gross value added (using basic prices), T = taxes on products and PS = subsidies on products.

Gross value added is the balancing of production and is measured as the difference between the goods and services produced (valued at basic prices) and intermediate consumption (valued at the purchase price), thus representing the new value created in the production process. Taxes on products are the category of fees paid for the quantity of the goods and services produced, sold or imported by residents. They include in a big proportion the value added tax and excise taxes. Subsidies on products are amounts paid by the budget for a unit of a good or service produced or imported. In this regard, it is obvious that the production capacity of a country it is very important in developing its economic environment. On the other side, taxes seems to influence a lot the evolution of GDP, at least at the theoretical point of view. Taxes on products representing indirect taxes as part of the formula for calculating GDP and also direct taxes influence, if we consider that production and consumption are dependent on labor market, social security contributions and the money circulating in the market, obtained also from taxes. What are we trying to discover is if either taxes influence the gross domestic product and thus the economic growth also in practice, when in the economic environment intervene other important variables such as public expenditure, public debt, foreign investments or tax evasion.

In today's economic recovery from the crisis in most countries, regardless of economic policies, faced with the problem of increasing debt, so the focus is on debt sustainability. Thus, in the absence of fiscal and budget strategies related to market needs one can get into a vicious circle of debt. Therefore, it is important to quantify the ability of an optimal level of GDP to meet debt accumulated, and identify how fiscal policy should work towards this goal. The fiscal policy of a state is seen from the perspective of taxpayers in terms of tax burden, the number of taxes owed, causing hatred in their eyes. Stanley Fischer and William Easterly said that "it is increasingly recognized that sustainable economic growth is possible only in a solid macroeconomic framework and that in such a framework of fiscal policy plays a key role" (A. Opreana, D. Mihaiu, 2012).

In Romania, there have been a lot of changes in terms of macroeconomic strategy, especially after joining the European Union. It had to align with EU rules on the harmonization of taxes and limiting the budget deficit and public debt, to avoid and prevent a possible

destabilization. But, however, the effects of the crisis were felt hard for all Member States and also for Romania not later than one year after the formal integration into the EU.

We can see in Figure 5 the evolution of the economic growth rates in EU and Romania in the last ten years. It is very easy to notice that after 2007, when Romania joined EU, the registered percentages stayed close to the average of the other states. In 2008, the economic growth reached a peak with a 8.5%, and then the decline it can be observed. Also, with this graph we can underline that the crisis effects started to be felt earlier in European Union, because in 2008 the GDP growth rate was already close to 0. The years 2009 and 2010 were the most difficult for Romania, when real GDP decreased dramatically and the economy confronted negative values. Of course the recession was already installed, the labor market was strongly hit and the appetite for investments was almost nonexistent. All these could not bring anything than the collapse of financial system with disastrous effects on the macro-economy. A growing trend we can see starting with 2011, when the GDP growth rates returned to values bigger than 0 and also exceeded the European Union average.

Economically speaking, taxes do not contribute to GDP growth, but undermines it. Taxes are a tribute to the state taking away part of the work product of the citizen. As such, how taxes are higher, the people are discouraged to work. And when you don't work usefully, you don't work profitably. In this regard, authorities should fight against fiscally, giving up to some taxes revenues and gaining on the other side from a productive and development business environment. But in reality, things are not like this; after the crisis, in order to create resources able to pay the public debt, authorities started to grow indirect taxes, VAT and excises rates. In this way, as we demonstrated with statistic data, also the economy grew, but in an artificial way. Using other words, a big part from the GDP growth doesn't come necessarily from the productive businesses, but from taxes increase.

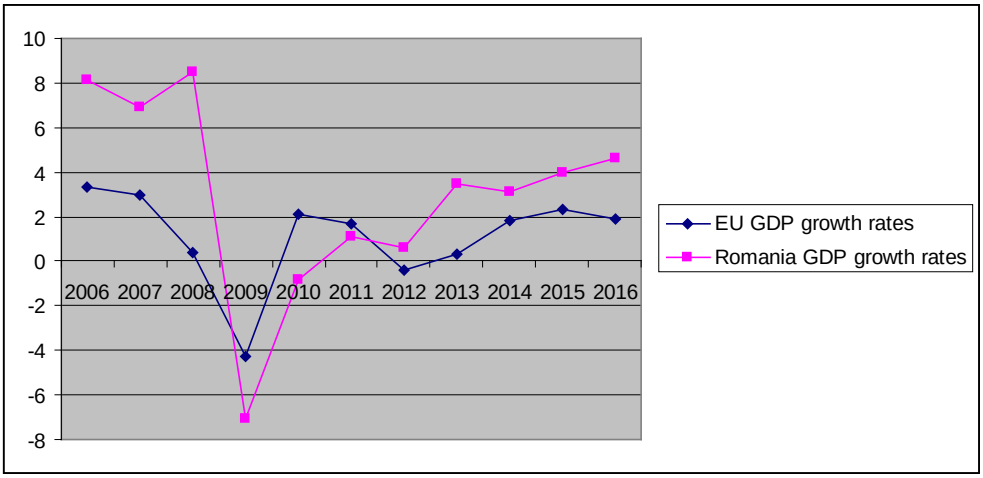

Figure 5: The evolution of GDP growth rates in Romania and European Union; Source: own representation, using Eurostat data

Using EViews program, we built an econometric model, we made two models with data for 2005-2014 period and we shared so: Southeast Europe and Western Europe.

Basically the equation model is:

GDP = a*Dir + b*IND + c,

where Dir - direct taxes, IND - indirect taxes

Dependent Variable: GDP
Method: Least Squares
Date: 09/20/17 Time: 21:12
Sample: 2005 2014
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DIR	2.650430	0.623205	4.252902	0.0038
IND	-3.254450	0.690583	-4.712613	0.0022
C	97.49272	11.68438	8.343848	0.0001

R-squared	0.857840	Mean dependent var	68.70100
Adjusted R-squared	0.817222	S.D. dependent var	2.231733
S.E. of regression	0.954122	Akaike info criterion	2.987274
Sum squared resid	6.372436	Schwarz criterion	3.078049
Log likelihood	-11.93637	F-statistic	21.12009
Durbin-Watson stat	3.103360	Prob(F-statistic)	0.001083

Dependent Variable: GDP
Method: Least Squares
Date: 09/20/17 Time: 21:20
Sample: 2005 2014
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DIR	3.154393	1.192257	2.645732	0.0331
IND	0.358207	2.716447	0.131866	0.8988
C	99.04014	32.46131	3.051021	0.0186

R-squared	0.553183	Mean dependent var	145.0510
Adjusted R-squared	0.425521	S.D. dependent var	1.333595
S.E. of regression	1.010791	Akaike info criterion	3.102668
Sum squared resid	7.151889	Schwarz criterion	3.193444
Log likelihood	-12.51334	F-statistic	4.333178
Durbin-Watson stat	1.247929	Prob(F-statistic)	0.059629

Figure 6: econometric model;
Source: own representation, using EViews program based on Eurostat data

Dependent Variable: GDP
Method: Least Squares
Date: 09/20/17 Time: 21:20
Sample: 2005 2014
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DIR	3.154393	1.192257	2.645732	0.0331
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R-squared	0.553183	Mean dependent var	145.0510
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S.E. of regression	1.010791	Akaike info criterion	3.102668
Sum squared resid	7.151889	Schwarz criterion	3.193444
Log likelihood	-12.51334	F-statistic	4.333178
Durbin-Watson stat	1.247929	Prob(F-statistic)	0.059629

Figure 7: econometric model;
Source: own representation, using EViews program based on Eurostat data

For our analysis we have used the annual time series of 28 EU member states where the dependent variable was the economic growth, represented by GDP per capita and the explanatory variables were government revenues (% of GDP), data that were collected from Eurostat official site for the period 2005-2014.

The purpose of the econometric analysis is to analyze the relationship between economic growth and government revenue (% of GDP) for the 28 EU Member States by analyzing Panel.

For correlation we look at R and Adjusted R (must be as large as close to 100%), the Durbin Watson test preferably is shorter than 2 and Sample F statistic should be less than 1% (this tells us that not all coefficients are null). In our case, we have a large R to countries in Southeast Europe, but a great Durbin Watson; Country Western R is somewhat lower (about 55%) but a Durbin Watson under 2. For both samples F statistic is ok, less than 1%. In conclusion there is correlation in both cases, but different. For example the countries of southeast constant indirect taxes is negative, which means an increase by one unit of indirect taxes, GDP decreases by 3.25 units.

Conclusions

With this work we wanted to analyze the relationship between economic growth rate and fiscal policies and the European Union. We started with selective presentation of some of literature and we can conclude that most economic studies carried out in the 90s, based on the negative effects that taxes could have on GDP growth. Similar economic cycles, economists have found a negative correlation between taxes and GDP, especially direct taxes, since an increase in corporate tax or income, employment is discouraged, and GDP should suffer eventually. Subsequent studies indicated that this correlation does not apply in all countries. For example, in a study made in 2013 on Latin America's economy, it was discovered that the direct taxes does not influence the economic growth so much on the long run, but the consumption taxes seems to have a bigger influence on the GDP. Recently in 2015, the correlation between GDP and direct taxes it has been

proved again, but the research was extended and was concluded that taxes can contribute in GDP changes in a positive way.

Further, we were focused on Romania's evolution and we saw that after 2007, the year it joined the EU, the GDP growth rate followed the same trend as the EU average and that in the crisis period reached the lowest values. An interesting thing to observe was the evolution of economic growth after the crisis, which can define the way Romania recovered after the collapse: starting with 2011, the GDP economic growth rate started to have positive values and even to exceed the EU average.

Based on the built econometric model where we used time series annual 28 EU Member States where the dependent variable was economic growth, represented by GDP per capita, and the independent variables were income tax (% of GDP), data were collected on the official website of Eurostat for the period 2005-2014. We built two models for Southeast Europe and Western Europe and in both of them, we saw correlation between tax revenues and economic growth.

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