Financial, Public and Regional Economics

The Analysis of the Evolution of Tax Revenues in EU Member States during 2009-2013

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Abstract: The state budget is a financial plan at the macroeconomic level, and it is designed as a set of accounts of the nation, which reflects the current year and next year projections on all economic agents in the country / region. The size of the public sector varies significantly from one Member State to another, which means that the financial resources available to the public sector differ substantially at the European Union level. The paper includes an analysis of the evolution of the main indicators corresponding to public financial resources at EU level achieved between January 2009 - December 2012 or December 2013, where data processing was available. The information was taken from the Eurostat statistics database. The research methodology used in this work was done by the use of indicators: the share of total public revenue in GDP; the share of taxes in GDP of production and imports; the share of current taxes on income, wealth etc. in GDP; the share of social security contributions in GDP. In the analysis there were considered, of the total financial resources of government, only the taxes levied on production and imports, current taxes on income, wealth etc. and social security contributions. In conclusion, the share of government revenues in GDP increases, but there are states where it decreases, such as Estonia, Lithuania, Luxembourg, Germany and Sweden. The public financial resources share in GDP at the level of the Eurozone was always higher in relation to the entire European Union, but always keeping the difference around 0.8 to 0.9 percentage points. France recorded the highest share of social security contributions in GDP (18.8% in 2009 and 19.4% in 2013) while Denmark has the lowest share of these financial resources in GDP, i.e. only 1.9% in 2009 and 1.8% in 2013.

Keywords: evolution; indicator; tax; share; resources

JEL Classification: H20; H21

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1. Introduction

The state budget expresses the economic relations, in cash, which appear in the sharing process of gross domestic product (GDP), consistent with the objectives of the economic, social and financial policy of each period. These relationships are manifested in two ways: on the one hand, the relationships through which the money resources are mobilized, available to the state, and on the other hand, the relationships that allocate these resources. The state budget is a financial plan at the macroeconomic level, and it is designed as *a set of accounts of the nation*, which reflects in the current year and the next year projections on all economic agents in the country / region.

As it is the most important mechanism by which the public finance functions are transposed into life, the state budget represents the most important instrument of state intervention in the economy, through fiscal and budgetary policies.

From the financial point of view, budgetary unit is a rule of order and clarity, allowing the state to present the real financial situation of the country, without dissimulation. Multiplying budgets and private accounts can become very difficult to get an overview of public revenues and expenditures, which encourages waste.

2. Research Methodology

The size of the public sector varies significantly from one Member State to another; it may also mean that the financial resources available to public sector differ substantially from the European Union. Hence the reason we achieved an analysis of the evolution of tax revenues in the EU Member States.

In the analysis there were considered from the total government financial resources, only taxes levied on production and imports, current taxes on income, wealth etc. and social security contributions, as defined by Eurostat.

The period for which it was analyzed the evolution of these revenues is January 2009 - December 2012 or December 2013, where data processing was available. The information was taken from the Eurostat statistics database.

The indicators analyzed for this study are:

- The share of total public revenue in GDP;
- The share of taxes on the production and imports in GDP;
- The share of current taxes on income, wealth etc. GDP;
- The share of social security contributions in GDP.

We opted to use the evolution of shares in the analysis in order to achieve a more accurate comparison of the evolution from one Member State to another.

3. Research Results

The evolution of the share of total public revenue in GDP, at the level of the whole union, as well as just in the Eurozone, is shown graphically in Figure 1, based on Eurostat data.

As it can be observed, the share of public funds in GDP in the Eurozone was always higher in relation to the entire European Union, but always keeping the difference around 0.8 to 0.9 percentage points.

An evolution of the same indicator for each of the Member States is presented in Table 1. Seen on individual countries, it is observed that in the analyzed period in general the share of government revenues in GDP increases, but there are states where it decreases such as: Estonia, Lithuania, Luxembourg, Germany and Sweden.

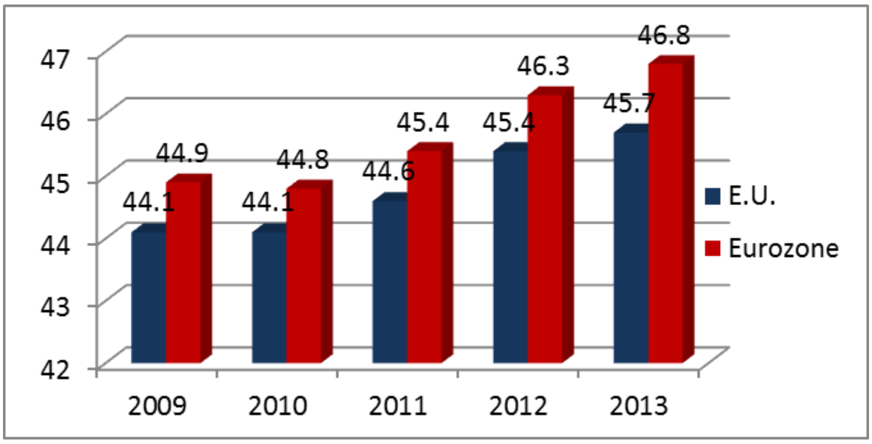

Figure 1. The proportion of total public revenues in GDP

Table 1. The proportion of total public revenues in GDP by states (%)

	2009	2010	2011	2012	2013
Belgium	48.1	48.7	49.6	51	52
Bulgaria	37.1	34.3	33.6	35	37.2
Czech Republic	38.9	39.1	40	40.3	40.9
Denmark	55.3	55	55.7	55.5	56.2
Germany	45.2	43.7	44.3	44.8	44.7

	2009	**2010**	**2011**	**2012**	**2013**
Estonia	42.8	40.7	38.7	39.2	38.1
Ireland	34.5	34.9	34	34.5	35.9
Greece	38.3	40.4	42.2	44.4	45.8
Spain	35.1	36.7	36.2	37.2	37.8
France	49.2	49.5	50.7	51.8	52.8
Croatia	40.8	40.5	40.3	40.8	41
Italy	46.5	46.1	46.1	47.7	47.7
Cyprus	40.1	40.9	39.9	39.4	40.3
Latvia	34.5	35.3	34.9	35.1	35.1
Lithuania	35.5	35	33.2	32.7	32.3
Luxembourg	44.5	42.8	42.7	44	43.6
Hungary	46.9	45.6	54.3	46.6	47.6
Malta	38.8	37.7	38.6	39.9	41.1
Netherlands	45.8	46.3	45.6	46.4	47.3
Austria	48.5	48.3	48.3	49.1	49.7
Poland	37.2	37.5	38.4	38.3	37.5
Portugal	39.6	41.6	45	40.9	43.7
Romania	32.1	33.3	33.9	33.7	32.7
Slovenia	42.3	43.6	43.5	44.4	44.7
Slovakia	33.5	32.3	34.1	33.7	35.9
Finland	53.4	53	54.1	54.5	56
Sweden	54	52.3	51.5	51.2	51.5
UK	39.6	39.8	40.3	42	41.1

Source: EUROSTAT

Regarding the second analyzed indicator, i.e. the share of taxes on production and imports in GDP, in the category of those taxes there were included, according to Eurostat data, all mandatory taxes generated by the production and importation of goods and services.

Regarded as compared to the entire Union and the Eurozone it is barely visible as compared to the share of total public revenue in GDP, the change in production and imports share of taxes in GDP is higher the Eurozone than the average value of the same indicator in the European Union as a whole. The data is presented in Table 2.

Table 2. The share of taxes on production and imports in GDP

(%)

	2009	2010	2011	2012	2013
E.U.	12.7	13	13.2	13.4	13.4
Eurozone	12.6	12.7	12.8	13	13.1

Source: EUROSTAT

Table 3 reflects the share change of taxes in GDP production and imports for each Member State separately. In order to determine the values it was used the following formula:

$$\Delta p_{\frac{V_{PI}}{GDP}} = p_{V_{PI}/GDP_1} - p_{V_{PI}/GDP_0} = \frac{V_{PI_1}}{GDP_1} x100 - \frac{V_{PI_0}}{GDP_0} x100 \qquad (1)$$

where:

$\Delta p_{\frac{V_{PI}}{GDP}}$ - change of production and imports share of taxes in GDP

$p_{V_{PI}/GDP}$ - production and imports share of taxes in GDP

Table 3. Change in share of taxes in GDP production and imports

	2009-2008	2010-2009	2011-2010	2012-2011	2013-2012
Belgium	0	0.3	-0.2	0.3	0
Bulgaria	-2.3	-0.2	-0.4	0.6	0
Czech Republic	0.4	0.1	0.5	0.6	0.2
Denmark	-0.2	-0.2	0.2	-0.1	0
Germany	0.6	-0.4	0.1	0	-0.1
Estonia	2.5	-0.7	-0.2	0.3	-0.5
Ireland	-1.1	0.2	-0.6	0.2	0.6
Greece	-1.1	0.8	0.7	-0.3	0.3
Spain	-1	1.7	-0.5	0.5	0.5
France	0.3	-0.2	0.4	0.2	0.2
Croatia	-0.9	0.9	-0.5	0.7	0.4
Italy	-0.1	0.4	0	1	-0.5

	2009-2008	2010-2009	2011-2010	2012-2011	2013-2012
Cyprus	-2.5	0.2	-0.8	0.3	-0.4
Latvia	-0.2	0.6	0.1	0.1	0.1
Lithuania	0	0.3	-0.2	-0.4	-0.1
Luxembourg	0.4	-0.5	0.1	0.5	0.3
Hungary	1	0.5	-0.2	1.3	0.1
Malta	-0.4	-0.5	0.4	-0.2	0.2
Netherlands	-0.3	0.3	-0.6	-0.2	0.3
Austria	0.5	-0.1	-0.1	0.2	-0.1
Poland	-1.4	0.8	0.2	-0.9	-0.3
Portugal	-1.4	0.6	0.4	0	-0.1
Romania	-1	1.2	1.1	0.2	-0.5
Slovenia	-0.3	0.3	0	0.3	0.8
Slovakia	0	-0.3	0.4	-0.6	0.5
Finland	0.5	0	0.8	0.2	0.4
Sweden	0.8	-0.9	0.8	-0.1	0.3
UK	-0.3	1	0.6	0.2	0.1

From the data of the table it can be observed that in the European Union this indicator recorded changes of increase and decrease from one year to another. The only exceptions occur in the case of Czech Republic and Finland, which were exclusively positive changes from one year to another.

The financial resources from the current taxes on income and wealth as a share in GDP and their annual changes are shown in Table 4, both for the whole European Union and the Eurozone.

Table 4. The share of current taxes on income and on wealth in GDP (%)

	2009	2009-2008	2010	2010-2009	2011	2011-2010	2012	2012-2011	2013	2013-2012
E.U.	12.4	-0.9	12.3	-0.1	12.5	0.2	12.9	0.4	13.1	0.2
Eurozone	11.6	-0.9	11.6	0	11.9	0.3	12.4	0.5	12.7	0.3

Source: EUROSTAT

As a share of GDP, the public financial resources arising from taxes on income and on wealth are lower than the average in the Eurozone, at the level of the entire union. Regarding their annual change, it is increasing in both Eurozone and the entire European Union.

The most important component of public resources funds as a share of GDP represents the social security contributions. Table 5 shows that their share in GDP in the Eurozone is slightly more significant than the average at the level of the entire European Union. Also the annual changes in the absolute size of this indicator are very small, generally 0.1 percentage points, increasing and decreasing.

Table 5. The share of social security contributions in GDP (%)

	2009	2010	2011	2012	2013
E.U.	14.1	13.9	13.9	14	14
Eurozone	15.8	15.7	15.7	15.9	16

Source: EUROSTAT

Analyzing the same indicator in each Member State levels, as shown in Table 6 it shows large discrepancies from one country to another. Thus, France has the highest share of these financial resources in GDP (18.8% in 2009 and 19.4% in 2013) while Denmark has the lowest share of social security contributions in GDP, i.e. only 1.9% in 2009 and 1.8% in 2013.

Table 6. The share of social security contributions in GDP per Member States (%)

	2009	2010	2011	2012	2013
Belgium	16.8	16.5	16.7	17.1	17.3
Bulgaria	7.7	7	7.3	7.2	7.8
Czech Republic	14.9	15.2	15.5	15.6	15.6
Denmark	1.9	1.9	2	1.9	1.8
Germany	17.3	16.9	16.7	16.8	16.8
Estonia	13.2	13.2	12.1	11.6	11.4
Ireland	7.4	7.3	6.2	5.9	6.2
Greece	12.7	13.4	13.1	13.7	13.4
Spain	13.4	13.4	13.3	13	12.8
France	18.8	18.7	18.8	19	19.4
Croatia	12.2	12	11.7	11.5	11.3
Italy	14	13.8	13.7	13.8	13.8
Cyprus	8.7	8.9	8.8	8.5	8.9
Latvia	9.4	8.6	8.7	8.6	8.3

	2009	2010	2011	2012	2013
Lithuania	13.2	12.2	11.6	11.3	11.2
Luxembourg	12.9	12	12.2	12.6	12.2
Hungary	13.3	12.2	13.3	13.3	13.4
Malta	7.3	7.1	7.3	7.3	7.3
Netherlands	14.6	14.9	15.5	16.6	16.9
Austria	16.5	16.3	16.3	16.4	16.7
Poland	11.3	11.1	11.4	12.3	12.2
Portugal	12.5	12.3	12.3	11.6	12.2
Romania	10.2	9.5	9.1	9	8.8
Slovenia	15.2	15.5	15.3	15.5	15.2
Slovakia	12.7	12.5	12.5	12.7	13.8
Finland	12.9	12.8	12.7	13.3	13.4
Sweden	8.7	8.7	7.7	7.7	7.5
UK	8.4	8.3	8.3	8.4	8.3

Source: EUROSTAT

The shares of above 16% are registered in Austria, Netherlands, Germany and Belgium.

For a better overview of the importance of the four categories of public financial resources in Table 7 there are presented together with the values of the four indicators, while Figures 2 and 3 graphically illustrate the same data.

Table 7. The share of the main public financial resources in GDP (%)

Indicator	2009		2010		2011		2012		2013	
	E.U.	Eurozone	E.U.	Eurozone	E.U.	Eurozone	E.U.	Eurozone	E.U.	Eurozone
Total public revenues;	44.1	44.9	44.1	44.8	44.6	45.4	45.4	46.3	45.7	46.8
Fees Applicable to production and imports	12.7	12.6	13	12.7	13.2	12.8	13.4	13	13.4	13.1
Current taxes on income and wealth	12.4	11.6	12.3	11.6	12.5	11.9	12.9	12.4	13.1	12.7
Social security contributions	14.1	15.8	13.9	15.7	13.9	15.7	14	15.9	14	16

Source: EUROSTAT

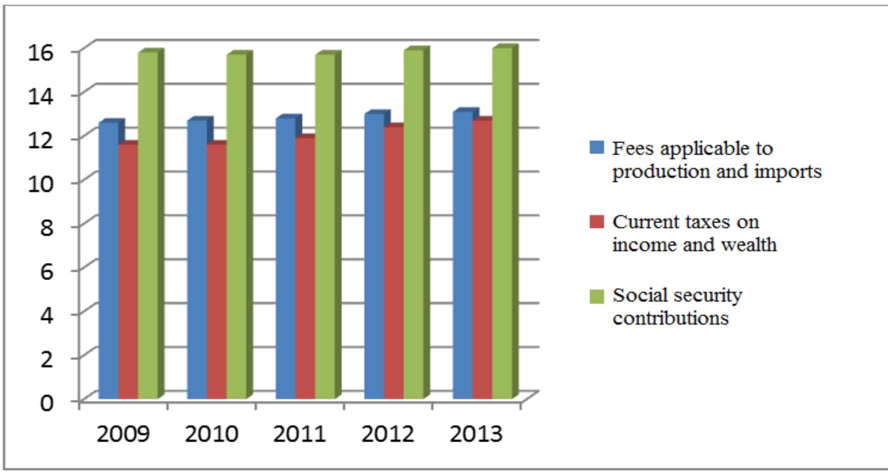

Figure 2. The share of the main public financial resources in GDP in the Eurozone

One can easily see that the largest share in GDP is in the social security contributions in both the Eurozone as well as in the whole European Union. In comparison, however, between the two geographical areas taken into account, at the level of the Eurozone the financial resources in the form of social security contributions as a share of GDP, they are above the EU average.

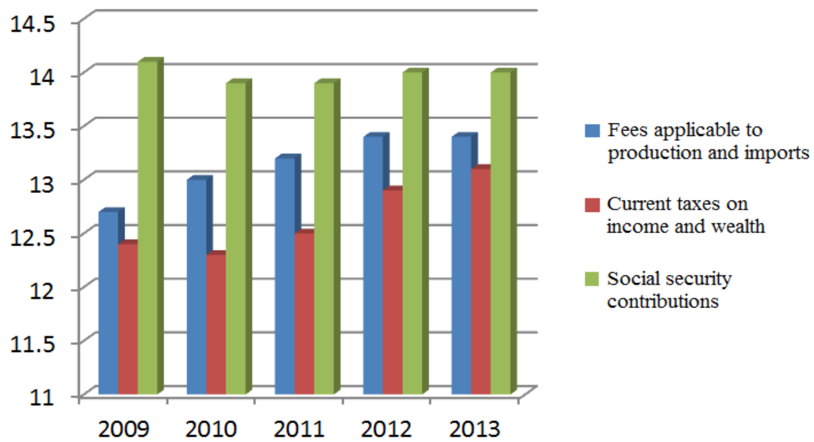

Figure 3. The share of the main public financial resources in GDP in the EU

There are also below the EU average, but there are fees for the production and imports, and public financial resources from taxes on income and wealth.

4. Conclusion

The state budget expresses the economic relations, in cash, which appear in the sharing process of gross domestic product (GDP), consistent with the objectives of the economic, social and financial policy of each period. These relationships are manifested in two ways: on the one hand, the relationships through which the money resources are mobilized available to the state, and on the other hand, the relationships that allocate these resources. This paper aims at analyzing the public financial resources of each Member State of the European Union. There were taken and analyzed statistical data from Eurostat for the following indicators: the share of total public revenue in GDP, the share of current taxes on income and wealth in GDP, the share of taxes levied to production and imports in GDP and the share of social security contributions in GDP. In general, referring to the EU Member States, the Eurozone indicator values are often different from the average values applicable to the entire European Union. For example, the share of public funds in GDP was always higher in the Eurozone than the EU average. The situation is diametrically opposite in terms of share of taxes in GDP production and imports. Overall we cannot speak about a uniform evolution of tax revenue in the Member States of the European Union. The size of the public sector and economic development varies significantly from one Member State to another, which means that the financial resources available to public sector differ substantially across the EU. During the analyzed period the share of government revenues in GDP generally increases, but there are states where it falls, such as Estonia, Lithuania, Luxembourg, Germany and Sweden. It is barely visible as compared to the share of total public revenue in GDP, changing production and imports share of taxes in GDP is higher than the Eurozone average value of the same indicator in the European Union as a whole. The most important component of public financial resources as a share of GDP represent the social security contributions. Note that their share in GDP in the Eurozone is slightly more significant than the average in the whole European Union. The annual changes in the absolute size of this indicator are very small generally 0.1 percentage points in both increase and decrease. Analyzing the share of the social security contributions in GDP per Member States, France recorded the highest share of these financial resources in GDP (18.8% in 2009 and 19.4% in 2013) while Denmark has the lowest share of social security contributions in GDP respectively only 1.9% in 2009 and 1.8% in 2013. It can easily be seen that the largest share of GDP have social security contributions in the Eurozone as well as in the whole European Union. In comparison, however, between the two geographical areas taken into account, at the level of the Eurozone the financial resources in the form of social security contributions as a share of GDP are above the EU average. Due to the current economic crisis, at the level of many Member States difficult budgetary situation have occurred, which led to a general increase in the tax share in the EU, reflected at the level of direct and indirect taxes, as well as the level for social security contributions. Given the general economic environment and in order to meet the economic and social challenges, the institutions of the Member States of the European recommend fiscal policies that encourage the economic start and reducing unemployment.

Among the most important recommendations are:

- substantial decrease of the tax pressure on labor market;
- increase of tax revenues by broadening the tax base and lesser by increasing the tax rates of imposition or setting new taxes;
- reducing tax evasion, etc.

5. Acknowledgment

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