How Standard VAT is Influencing Economic Growth? An Analysis at European Union Level

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Abstract. *The article is structured in 3 main chapters. It begins with a brief introduction explaining the theoretical link between the two target indicators: value added tax and economic growth. The first two chapters have in the foreground the value added tax, in which are presented the main characteristics, the VAT rates applied in each Member State, but also the evolution of the revenues generated as a percentage of GDP and as a percentage of total tax revenues collected. Last but not least, we discuss the process of harmonizing value added tax at European Union level. In the last chapter, the link between the revenues collected from VAT and the level of GDP is presented through an econometric model. The article ends with a summary of the conclusions drawn from the study.*

Keywords: value added tax, economic growth and fiscal policy.

JEL Classification: H20, H30.

1. Introduction

The assessment of economic growth and its measurement is a broad subject, approached numerous times in the specialized literature and is influenced by multiple quantitative and qualitative factors. The population of a state perceives economic growth as a proof of a good quality of life, by increasing consumption and improving the quality of goods and services. In the broad sense and taking into account the whole economic mechanism, a healthy economic growth in a state positively influences not only the consumption level and the inflation rate, unemployment but also the reduction of tax evasion.

The history of economic growth shows that, for centuries, the well-being of a nation has been given by the level of gross domestic product, which represents *the gross value of all officially recognized final goods and services produced in a country in a given period by the economic agents, within national borders[1].*

On the other hand, taxes are the main element that determines the tax revenues, destined for public consumption and the redistribution of income, which supports the economy and ensures a normal route. Indirect taxation, through its mechanisms, implies an easier allocation of income than direct taxation. In principle, indirect taxes play a major role in determining consumption and its impact on the economy and population[2].

Therefore, can we easily say that the level of indirect taxes collected in a state directly influences the evolution of the gross domestic product and of the economic growth? We will try to answer this question through this article, where we will analyze the impact of the main indirect tax - value added tax on the evolution of economic growth.

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[1] S.Dorica, „The financial discipline a factor of economic growth", 2013, Annals of Faculty of Economics, University of Oradea, Faculty of Economics, vol. 1(2), pages 263-271

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In the first chapter we will review the main features of value added tax and how it is addressed in the member countries of the European Union; then we will bring to the fore the harmonization process and its evolution at European level, and then in the last chapter we will present the link between value added tax and the level of economic growth in European Union, through an econometric model. The article will conclude by summarizing the conclusions obtained as a result of the scientific study.

2. VAT – Main Indirect Tax at EU Level

Value added tax (VAT) plays an important role in the field of taxation, this being proven both during and after the previous economic crisis. We mentioned this period, because the total tax revenues (from direct and indirect taxes, as well as social security contributions), expressed as percentage from GDP, reached the lowest level in 2010. Since that time, Member States have tried to recover and, in many cases, we have faced a tax increase rather than a reduction in spendings. And the increase of the standard VAT rate was the "favorite" for he states, because it has the fastest effect in increasing the fiscal resources.

Indirect taxes are imposed on consumption, sales, services and are usually included in the price of goods and services, which makes them less visible to payers compared to direct taxes. The value added tax is the most important tax from the indirect ones, because it has the highest share and is included in the prices paid by the final consumer. VAT revenues represent the main tax category for the countries of Central and Eastern Europe. The old Western European Member States collect relatively equally the direct taxes, the indirect taxes and the social contributions[3].

From the point of view of the rates applied, the EU member states can adjust them according to the European Directive no. 112/2006, respecting a minimum rate of 15%. The European Directive does not mention a maximum rate that can be applied, this offering the freedom of the Member States to adjust the level of value added tax according to their fiscal policies[4].

In the Table no. 1, there can be observed the rates (standard and reduced) applied by each EU member state, valid on 01.01.2019.

Table 1. The level of standard and reduced VAT for each EU member state as of 01.01.2019

Member state	Standard VAT rate	Reduced VAT rate
Belgium (BE)	21	6/12
Bulgaria (BG)	20	9
Czech Republic (CZ)	21	10/15
Denmark (DK)	25	-
Germany (DE)	19	7
Estonia (EE)	20	9
Ireland (IE)	23	9/13.5
Greece (EL)	24	6/13
Spain (ES)	21	10

[3] C.Vlad, B.Ibadula, C.Ionita, P.Brezeanu, “The influence of VAT on prices and inflation rate – Romania case”, International Finance and Banking Conference (FIBA) 2017

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France (FR)	20	5.5/10
Croatia (HR)	25	5/13
Italy (IT)	22	5/10
Cyprus (CY)	19	5/9
Latvia (LV)	21	12
Lithuania (LT)	21	5/9
Luxemburg (LU)	17	8
Hungary (HU)	27	5/18
Malta (MT)	18	5/7
Netherlands (NL)	21	9
Austria (AT)	20	10/13
Poland (PL)	23	5/8
Portugal (PT)	23	6/13
Romania (RO)	19	5/9
Slovenia (SI)	22	9.5
Slovakia (SK)	20	10
Finland (FI)	24	10/14
Sweden (SE)	25	6/12
United Kingdom (UK)	20	5

Source: Own representation, using data from https://ec.europa.eu/taxation_customs/sites/taxation/files/resources/documents/taxation/vat/how_vat_works/rates/vat_rates_en.pdf

It can be seen that the lowest standard VAT rate is applied in Luxembourg (17%), while Hungary applies the highest standard rate (27%). The EU average is 21.4%. Regarding the reduced rates, they are applied to certain products and / or services, chosen by each state partly among which: tourism services, books, certain products from the food industry, etc.

As we have stated several times in this article, value added tax represents the most important tax in the category of indirect ones, from the point of view of collection, but also by its weight in gross domestic product or in total tax revenues. In the chart no. 1 we represented the evolution of the share of VAT revenues in total tax revenues and in the gross domestic product; data are expressed as an average at the European Union level, for the period 2005-2017.

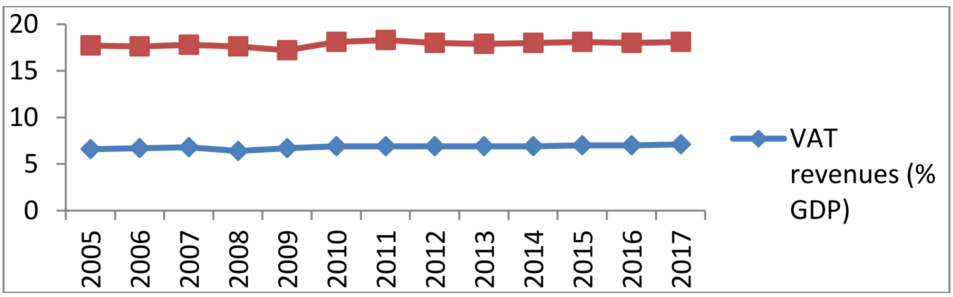

Fig. 1: The share of VAT revenues as a percentage of total tax revenues and of GDP, expressed as average at EU level between 2005-2017

Source: Own representation, using Eurostat data

It can be observed in the graph above that during 2008-2009, there was a decrease in the share of VAT revenues, reported both to GDP and to total tax revenues. Starting with 2010, they registered a slight increase, then becoming stable until 2017. The increase of VAT revenues was mainly determined by the increase of the standard value-added tax rates in many Member States. The average EU-28 standard rate increased by 2 percentage points between 2008 and 2015 (from 19.5% to 21.6%)[5].

The revenues collected from VAT represent about 17% of the total tax revenue collected and we can say that it is an important percentage, considering that the Member States have more than 10 types of taxes applied (direct and indirect). At the same time, it should be emphasized that the states have fiscal independence and if in some states VAT revenues represent about 15% of total revenues, or even less (as in the case of Italy or Belgium), there are states with more than 25% percentages (as this is the case of Bulgaria, Romania or Poland).

3. VAT Harmonization in EU

The idea of having a value added tax harmonized at European Union level arose from the need to have a unitary fiscal system between the Member States on the one hand and on the other hand the desire to eliminate suspicions related to the payment of indirect taxes in the case of imports and exports, but also to reduce tax evasion. The main notable moments in the VAT harmonization process were:

- Compulsory introduction of value added tax in all Member States until 1973; until the moment of this decision, only France applies the VAT, the other states preferring another type of indirect taxes
- Uniformization of the VAT tax base, starting with 1977
- The implementation of a transitional system for VAT, together with the creation of the single market and the abolition of customs borders, starting with 1993
- Simplification of the VAT calculation system and the cooperation of the Member States in order to reduce the tax evasion, starting with 1993[6].

The harmonization of taxes does not imply a single fiscal policy in all states, as each has its own specific and freedom to apply a fiscal policy according to the respective economic environment. The main purpose of harmonization is to create a convergent system between states, simplify the application of taxes on goods and services circulating between the Member States and strengthen the concept of the "single market".

It is visible that the most important steps in the direction of harmonization were made for indirect taxes, in the case of VAT and excise duties, on the one hand because they are those which apply to goods and services between states, and on the other hand, in the case direct taxes is very difficult and it is not desirable to submit to a single tax system, these being directly proportional to the level of living and salary in each state.

With the apparition of the idea of fiscal harmonization, the "phenomenon" of fiscal competition has also developed. In most cases, in order to attract foreign labor, capital or investment, states resort to simplifying the tax system or even reducing the quotas applied. These practices first appeared in the EU after 2004, when 10 post-communist states also joined in order to compete with the older member states, which also have more developed economies, choosing to offer "tax advantages". Many times, these competitive strategies are beneficial for the progress and development of the

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[5] C.Vlad, B.Ibadula, C.Ionita, P.Brezeanu, “The influence of VAT on prices and inflation rate – Romania case”, International Finance and Banking Conference (FIBA) 2017

[6] M.Dracea, R. Buziernescu, N. M. Florea, "Harmonization of VAT in the European Union. Achievements and Perspectives," 2013, Finante - provocarile viitorului (Finance - Challenges of the Future), University of Craiova, Faculty of Economics and Business Administration, vol. 1(15)

economic environment, but there are also unfair practices. Thus, regarding VAT and the rest of indirect taxes, it is very difficult to represent elements of competition. These practices are most often encountered in the field of direct taxes (income tax, profit tax, social insurance).

Although VAT is the most harmonized tax on the single internal market of the European Communities, the legislation does not restrict the Member States to its maximum value. A minimum percentage of 15% is foreseen for the standard rate, but the states can adopt any rate that exceeds this percentage; introducing a maximum percentage would reduce the interval and would be an important step in the harmonization process at the European Union level[7].

4. The Impact of VAT Revenues on Economic Growth – Econometric Aproach

In order to be able to evaluate how value added tax influences economic growth, we chose to construct an econometric model based on a simple linear regression, which has as a dependent variable the GDP expressed in millions of EURO, calculated as the average of the annual GDP. registered by the EU Member States, and as an independent value the VAT revenues, in millions of EURO, also calculated as the average of the revenues registered by each Member State. The data are annual, for the period 2005-2017. Below we have the equation underlying the model:

$$G = c(1) + c(2) * T,$$

where: G – the average GDP at EU level este, T – the average of VAT revenues at EU level , c(1) and c(2) – constant variables.

The result was obtained using Eviews program and it can be seen in Figure no.2.

Dependent Variable: G
Method: Least Squares (Gauss-Newton / Marquardt steps)
Date: 11/13/19 Time: 17:57
Sample: 2005 2017
Included observations: 13
G=C(1) + C(2)*T

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	3136549.	412034.4	7.612347	0.0000
C(2)	11.24171	0.446850	25.15770	0.0000

R-squared	0.982917	Mean dependent var	13445651
Adjusted R-squared	0.981364	S.D. dependent var	1137055.
S.E. of regression	155224.2	Akaike info criterion	26.88377
Sum squared resid	2.65E+11	Schwarz criterion	26.97068
Log likelihood	-172.7445	Hannan-Quinn criter.	26.86590
F-statistic	632.9100	Durbin-Watson stat	0.982604
Prob(F-statistic)	0.000000		

Fig. 2: The results obtained from applying the econometric model
Source: Own representation, results obtained using eviews program

According to the obtained results, we can affirm that there is a direct linear connection between the two variables; this is confirmed by the high values of R-

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squared and adjusted R-squared, both 98%. At the same time, the value of 0.98 of the Durbin Warson test confirms once again the strong connection between the two variables. Following the obtained results, the equation can be rewritten as follows:

$$G = 3136549 + 11.24 * T,$$

which means that with the increase of one unit of average income from value added tax, the average level of gross domestic product changes by 11.24 units.

5. Conclusions

In this article, we aimed to highlight the influence of value added tax on economic growth. We chose these two indicators, because economic growth is the main purpose of a state, this being the result of both the fiscal policies applied and the macroeconomic policies. Over time, economic growth was measured by the evolution of the level of gross domestic product.

The value added tax represents the main tax in the category of the indirect ones at the level of the European Union, both as a level of the generated income and as a component of the gross domestic product. VAT rates are established by each state, but in compliance with European directives. 16 years ago, the European Union created the single market for the Member States, one of the main features being the elimination of borders between them, and the consequence of this concept was the harmonization of indirect taxes. The main aim of the process of harmonizing the value added tax was to improve the efficiency of the application of this tax, as well as to reduce the tax evasion.

In the last chapter, we determined by an econometric model with a simple linear regression, the link between the evolutions of the revenues generated by value added tax at the level of the European Union and the evolution of the gross domestic product. The analysis was made over a period of 13 years, and the result shows a direct connection between the two indicators: with the increase of one unit of average income from value added tax, the average level of gross domestic product changes by 11.24 units.

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