



TAXATION IN THE EUROPEAN UNION. SOME PROPOSALS TO SUPPORT ECONOMIC GROWTH AND AVOID THE PROFIT SHIFTING

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Abstract In this paper we refer to the current fiscal context and fiscal trends, at national and international level. In this sense, we perform an analysis of tax revenues (tax revenues from direct, indirect taxes and social contributions, as a share of GDP) from 2018-2019, at European level, and we try to highlight some possible sources that could lead to increased revenues, which, in the 2020 year, registered a significant reduction. In this sense, we used a descriptive methodology, using various bibliographic sources, mainly from foreign literature, as well as a quantitative methodology, for processing and analysis of data taken from international databases (subsequently necessary for testing with the Eviews program).

Keywords: taxation, tax revenues, VAT, tax administration.

JEL Classification: H25

Introduction

The main objective of this paper is the possibility of rebuilding taxation to encourage growth and investment, in line with globalization and new industrial and technological challenges. The analyzed period was represented by the years 2018-2019, especially 2019, before the appearance of the Covid 19 virus, when the entire economy, at global level, was affected. Our focus was on taxation during that period, especially in the European Union member states (we also briefly analyzed the situation in the OECD) and how the tax system should be reconfigured in the context in which the globalization and technology are more present in our lives. The data we use are provided by Eurostat (AMECO database), OECD reports (OECD Global Revenue Statistics Database) and Taxation Trends report.

1. Taxation in European Union in the years 2018- 2019

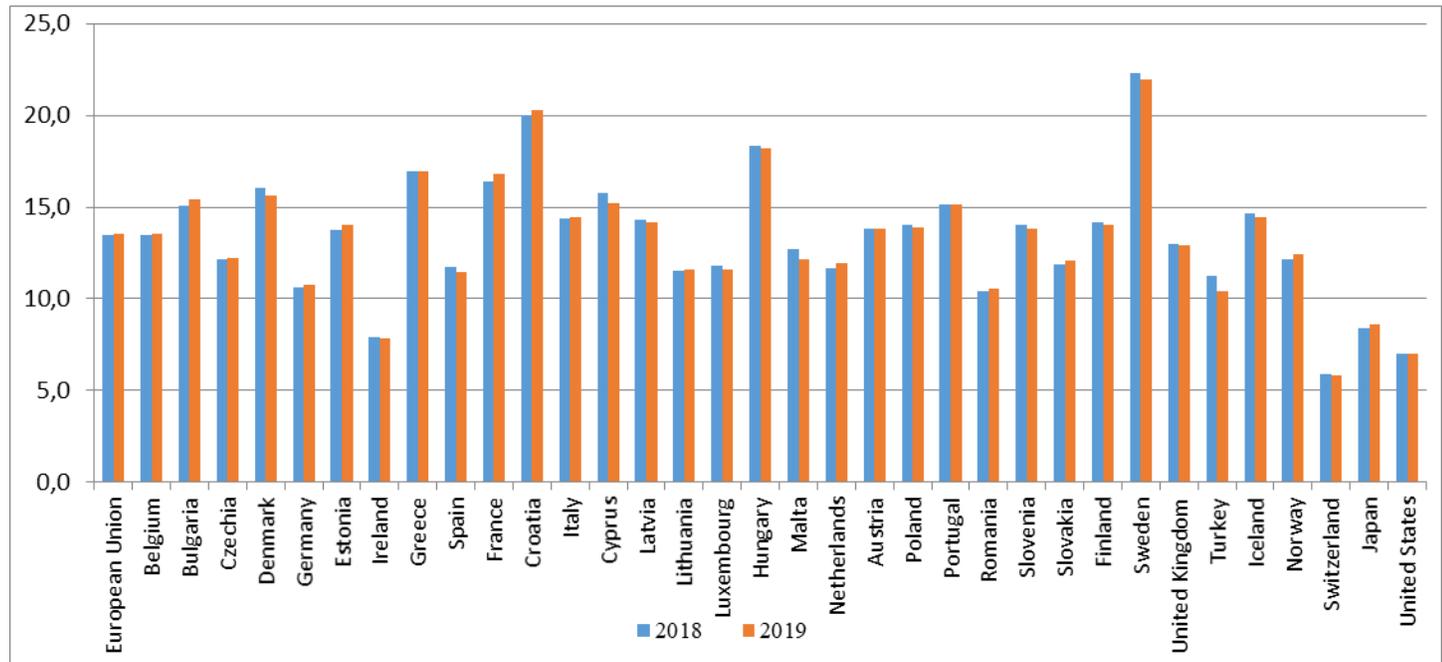
The main tax trends in the years analyzed were: reductions of personal income tax, which target, in particular, low and medium income households; limited changes in social contributions in terms of number and scope, most reforms aimed at reducing them; reductions of the profit tax rate; with regard to international taxation, efforts have been made to protect the corporate tax bases against tax evasion by adopting reforms in line with the OECD / G20 project on the erosion of the tax base and the transfer of

profits (BEPS); stabilization of standard value added tax rates (VAT); the increase (a "slow" one) of property taxation, compared to previous years, through an increasing number of reforms.

Evolution of tax revenues from direct and indirect taxes and social contributions in the period 2018-2019, at international level

A common feature of OECD and European Union countries is that they rely more on tax revenues from excise taxes, social security contributions and personal income taxes than on corporate and property taxes. Also, by region, Asian, African and South American countries rely more on consumption and profit taxes and less on income tax and social security contributions (compared to the OECD average).

◀ Tax revenues from indirect taxes in the period 2018- 2019, % GDP



Source: AMECO, author processing

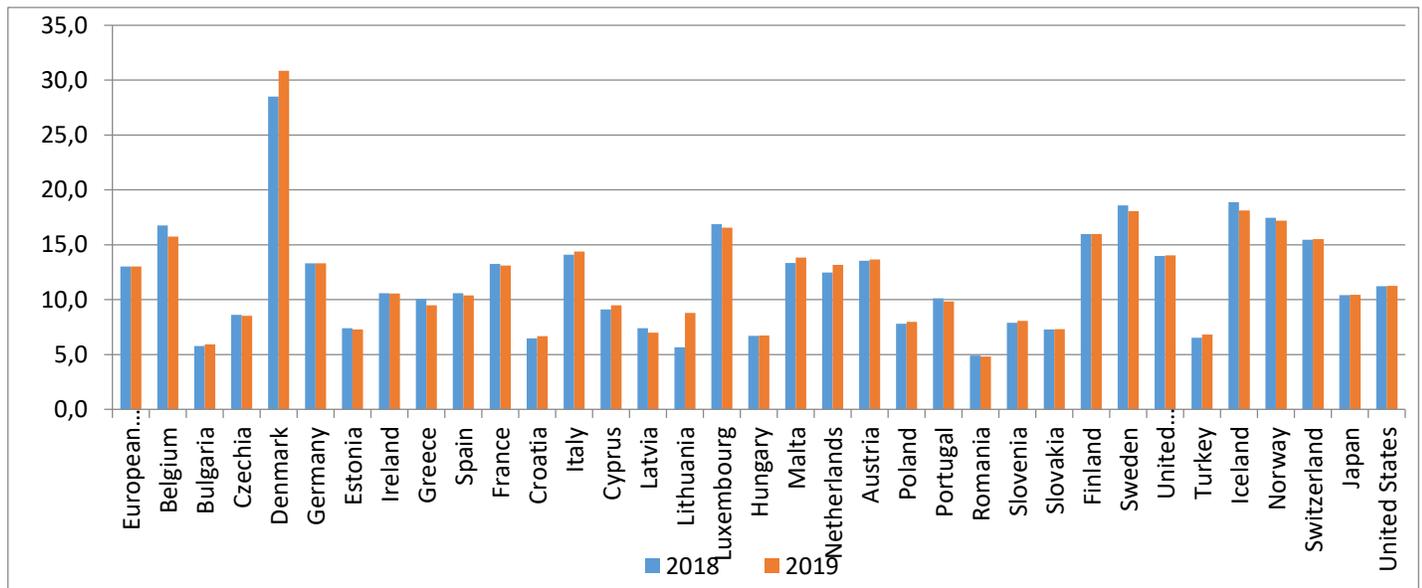
Figure no.1. Tax revenues from indirect taxes in the period 2018- 2019, % GDP

At international level, we notice that the level of tax revenues from indirect taxes remained relatively constant, without significant changes. At EU level, they accounted for 13,5% of GDP in both years; the highest values were in Sweden, Croatia, Hungary, and low shares were recorded in Switzerland, Ireland. Romania had a low share of these revenues, of 10,4% of GDP in 2018 and 10,6% of GDP in 2019, a situation similar to developing countries, where tax revenues generally come from indirect taxes. Among the countries similar to Romania in terms of economic development, we are ahead of Bulgaria, Slovenia, Slovakia, Lithuania. The US and Japan have a relatively small share of 7% and 8,6% of GDP, respectively. It should be noted that government authorities are trying to combat tax evasion through digital technologies.

The aim is to monitor sales processes, thus uncovering untaxed transactions and reducing tax fraud. In 2018, Hungary introduced online invoicing, and the first reactions were favorable. Similar solutions are expected to be applied in several states.

◀ Tax revenues from direct taxes in 2018- 2019, % GDP

At EU level, the value of direct tax revenues (average) was 13% in the two years analyzed. There were no significant changes in the member countries, with the exception of Lithuania, which in 2018 recorded a level of 5,7% of GDP, and in 2019- 8,8%. An increase was also in Netherlands, Denmark, Sweden, Norway. Romania has the lowest level, less than 5% of GDP, respectively 4,8%, followed by Bulgaria (5,9%), Hungary, Croatia. We notice that in countries where the tax rate is low or has decreased (Bulgaria, Hungary), the level of tax revenues has also decreased. As for corporate tax rates, they differ in the countries of the region: between the highest (Germany, 33%) and the lowest (Hungary and Montenegro, 9%) there is a difference of more than 20 percentage points. It should be noted that Greece has reduced its corporate tax rate by 1% since 2019, Poland has introduced a reduced preferential rate of 9% for small businesses. The average corporate tax rate in the region is around 17%.



Source: AMECO, author processing

Figure no.2. Tax revenues from direct taxes in 2018- 2019, % GDP

The European Union has made sustained efforts to limit tax competition and combat tax evasion techniques. The Anti-Tax Evasion Directive (ATAD) has been implemented by Member States since 1 January 2019. It sets, for example, the limits of deductibility of interest paid on financing instruments, unifies the provisions for offshore transactions and is also the source for future transposition of taxation on leaving the country. All CEE countries with traditional profit tax schemes allow losses incurred in previous years to be carried



forward and used to offset profits in subsequent years (generally 5-7 years), only 6 of these countries allowing losses to be carried forward without time limit.

States in the region still tend to impose withholding taxes on interest, dividend and royalty payments (at 15% or 19-20%); taxpayers are also allowed to prepare separate financial statements based on IFRS and use them to determine taxes due. In most states, the tax system encourages research and development. Slovakia, Serbia and Poland have recently taken measures in this regard, while in Romania various fiscal facilities specific to these activities have been previously implemented. Starting with 2019, fiscal consolidation for corporate tax purposes is also possible in Hungary, similarly in Austria, Poland and Bosnia and Herzegovina. Russia is taking steps to eliminate the fiscal consolidation system.

In the area of **personal income tax (PIT)**, most countries continue to reduce the tax burden on personal income, by reducing tax rates or tax bases, in order to support equity, especially for those with low and medium incomes. It should be noted that both personal income tax (PIT) and social security contributions (SSC) are essential sources of tax revenue in most countries. Together, they account for, on average, half of OECD countries' tax revenues.

Personal tax revenues account for 24% of OECD tax revenues, while social contribution revenues account for 27%. In 2018, PIT, SSC and payroll taxes accounted for over 60% of tax revenues in the United States and Germany and about 40% in Israel, New Zealand, South Africa and Mexico. In Slovakia, the Czech Republic, Slovenia and Lithuania, only social contributions accounted for at least 40% of total taxation. In Denmark, Australia and the United States, personal income tax revenue accounted for about 40% of total tax revenue. PIT, SSC and payroll taxes account for a much smaller share of tax revenues in Chile (14%), Indonesia (22%) and Argentina (29%).

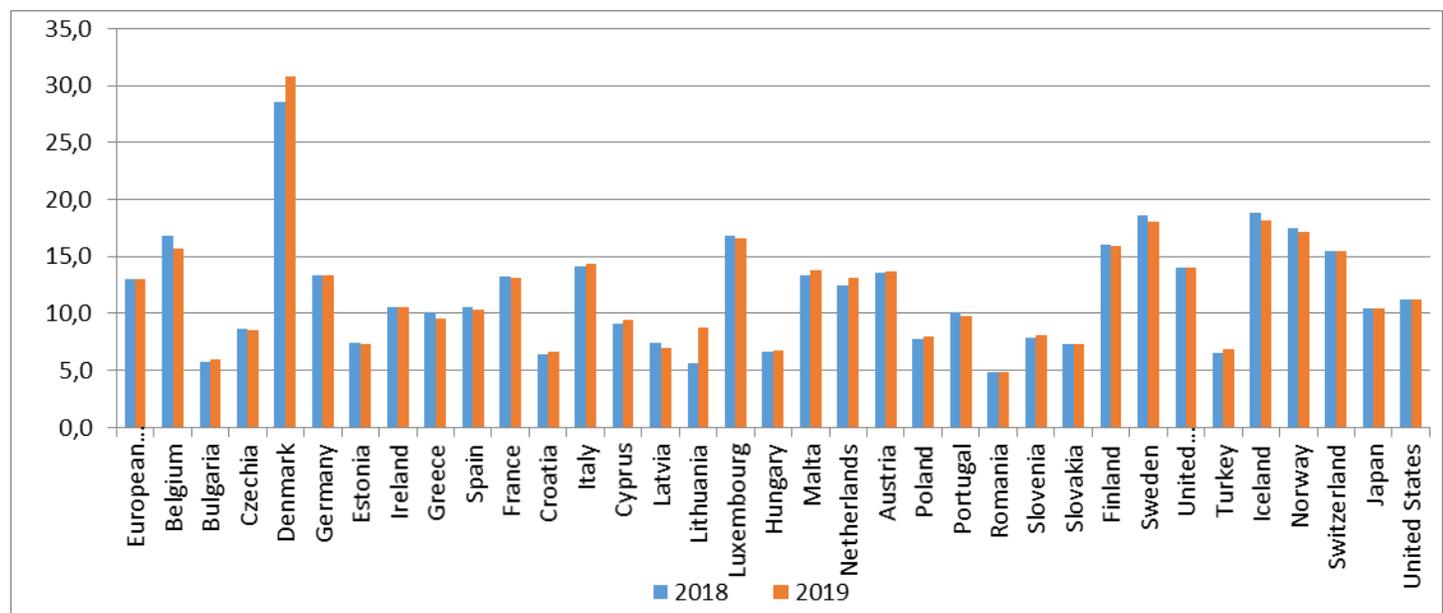
As far as **corporate income tax (CIT)** is concerned, globally there is a downward trend in its legal rates. The most significant reductions in the CIT rate were generally introduced in countries where the initial CITs were higher, leading to convergence of tax rates between countries. In 2020, reductions in standard corporate tax rates were introduced in Belgium (25%), Canada, France (standard CIT was reduced to 31%, except for companies with an annual turnover exceeding 250 million euro), Greece and Indonesia. The standard CIT rate reductions will come into force in 2021. Other tax rate reductions will occur in Netherlands, Argentina (but the tax on distributed dividends will increase), Sweden.

With regard to *international taxation*, efforts to protect the tax bases of profits against corporate tax evasion have continued with the adoption of significant reforms in line with the OECD / G20 project on tax erosion and profit transfer (BEPS). The tax challenges arising from the growing digitalization of the economy are another major concern for many countries that have announced or implemented interim measures to tax certain revenues from digital services. The OECD's BEPS ("tax base erosion and profit shifting") initiative has drawn attention to cross-border intra-group transactions. Transfer pricing rules have already been introduced in the tax systems of almost all countries involved, with the exception of

Montenegro and Macedonia (also, in Bulgaria, transfer pricing documentation can only be prepared at the specific request of the tax authority). Documentation obligations have recently changed. The fundamental objective of country-by-country reporting required by the OECD is to promote transparency by providing local tax authorities with the information they need to assess tax risks. In the last year, taxpayers in the CEE region have had to actively participate in the launch of the CBC reporting system.

◀ Tax revenues from social contributions in 2018-2019, % GDP

In the two years, the level of income from social contributions has changed several times (2019 compared to 2018): the Netherlands, a decrease of 0,5 percentage points in 2019, Lithuania, a decrease of about 2 pp, in Latvia increased by 0,5% pp, France, a decrease by 1,2% pp, in 2019. Romania recorded a level of 11,3% of GDP in 2019, surpassing Sweden (3,3% - the lowest level), Norway, Malta, Ireland; we continue to rely on tax revenues from indirect taxation and social security contributions.



Source: AMECO, author processing

Figure no.3. Tax revenues from social contributions in 2018-2019, % GDP

2. Some theoretical aspects about the OECD proposals

In recent years, multinational companies in almost all economic sectors have recorded a significant increase in global revenues, an increase coming especially from Asia, Africa or Eastern and Central Europe, where employment and living standards have increased and have determined an increase in the consumption of goods and services. In order to benefit from this development, the states have entered a continuous process of attracting foreign investments, by granting various economic facilities/ incentives, often being in great competition with neighboring states.



If initially the aim was to increase the number of jobs at global level, in recent years there have been discussions about the level of taxes and fees paid by new investors, especially the profit tax and the way it is established. If a multinational group makes significant profits, each state in which it operates through a subsidiary is interested in collecting as much of the overall profit as possible. At the same time, the group has an interest in reducing the level of tax paid globally, so that shareholders can benefit from dividends as high as possible, which is done through various methods and schemes, legal or in the gray / underground area. The purpose of these schemes is generally to transfer profits from countries with a high level of taxation to countries with a low level or to reduce the tax base in countries with a high level of taxation through various non-economic payments. These levers are put into practice by the transactions that take place between the group companies.

To limit the effects of these practices, since the 1970s, the OECD has created a series of rules on the taxation of transactions between companies belonging to the same multinational group, structured in the OECD Guide on Transfer Pricing. There were various opinions on how to regulate transfer pricing, one of which was the application of a formula to establish the taxable profit attributed to each company in the group, taking into account the importance of that company in the chain of economic value. However, this variant did not materialize, mainly due to the lack of consensus on the formula itself, and currently applies the principle of arm length, also called the principle of full competition, namely prices in transactions between companies of the same group must be comparable at prices set between independent companies under similar economic conditions.

At the global level, there is a discussion about the profits made by multinational groups and how they should be taxed in order to increase the amount of money attracted to state budgets. Even in Romania, there are discussions about the fact that multinationals invest, being attracted by the low costs and facilities offered by the state, but transfer the profit made by the local company to other companies within the group, for fiscal or economic purposes.

Also, recently, the actions to verify the transactions carried out between the group companies have intensified and attempts are being made to make the so-called transfer price adjustments, which ultimately lead to an increase in the level of taxable profit of the company in that country. An example is the investigation launched by the European Commission into the taxation of profits obtained by US groups in the IT industry, such as Apple, Google or Amazon, from activities in EU countries. The additional tax claimed in these cases by the Commission is in the order of billions of euros.

The OECD's most recent move to limit tax evasion and regulate the taxation of multinational groups is the Base Erosion and Profit Shifting Plan (BEPS). The OECD estimates that globally, states lose revenue of about 100 - 240 billion euro annually as a result of shifting profits and eroding the tax base. The adopted plan, including in the EU, proposes, among other things, that multinational groups submit country-by-country reporting to tax authorities, which will include information on all subsidiaries, including country of

residence, profits earned and level of tax paid. Through this reporting, states want to achieve full transparency in how groups structure their profits for tax purposes and try to stop the use of tax havens.

OECD concerns about global taxation also influence, directly or through European legislation, Romanian taxation. The BEPS initiative, launched several years ago by the OECD, with the aim of establishing a tax system at the level of multinational companies that is as fair as possible for the states in which they obtain income, is taking on new forms and targets more and more areas.

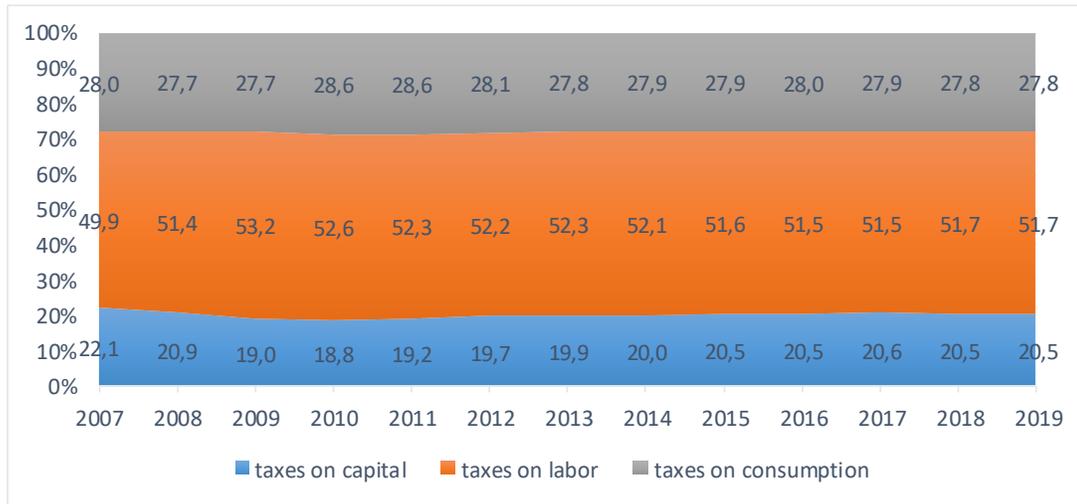
The latest proposals, issued under the initiative, aim at taxing the digital economy - Pillar I (involves setting a 3% tax on digital services for corporations with a turnover exceeding 750 million euro; the tax is primarily intended for large technology groups from the US, such as Amazon and Google, but also to new market participants, such as the Chinese groups Tencent and Alibaba) and the establishment of a minimum level of global profit taxation, so that multinational companies can no longer avoid paying taxes by moving profits in tax jurisdictions with preferential regime - Pillar II. Although a level for this minimum tax has not yet been set, it has been calculated at an average tax rate of 12,5%.

3. Possible proposal to increase tax revenue - Orientation towards consumption taxation (VAT)

Because our analysis refers to tax revenues in the European Union, we start with the presentation of the structure of total tax revenues (for 2019), respectively the distribution of the tax burden by types of taxes. The structure of taxation varies significantly between EU Member States. Denmark has the largest share of direct taxes in total tax revenue (64,6%), followed by Ireland and Malta. Norway and Iceland also have relatively high rates of direct taxes. In general, the share of social contributions in total tax revenues is appropriately low in these countries. In Denmark, the low share of social security contributions is due to the fact that most social spending is financed by general taxes, which requires high levels of direct taxation.

In contrast, Slovakia and the Czech Republic have tax systems with high values of social contributions in total tax revenues and relatively low shares of direct tax revenues. In these two countries, social assistance systems are financed by social contributions. Many Member States have a much lower share of direct taxes, but are "counterbalanced" by either relatively higher proportions of indirect taxes (Croatia (52,1%), Bulgaria (50,8%) and Hungary (49,4%)) or relatively higher shares of social contributions (Slovakia (43,3%), the Czech Republic (43,2%) and Lithuania (42,1%)).

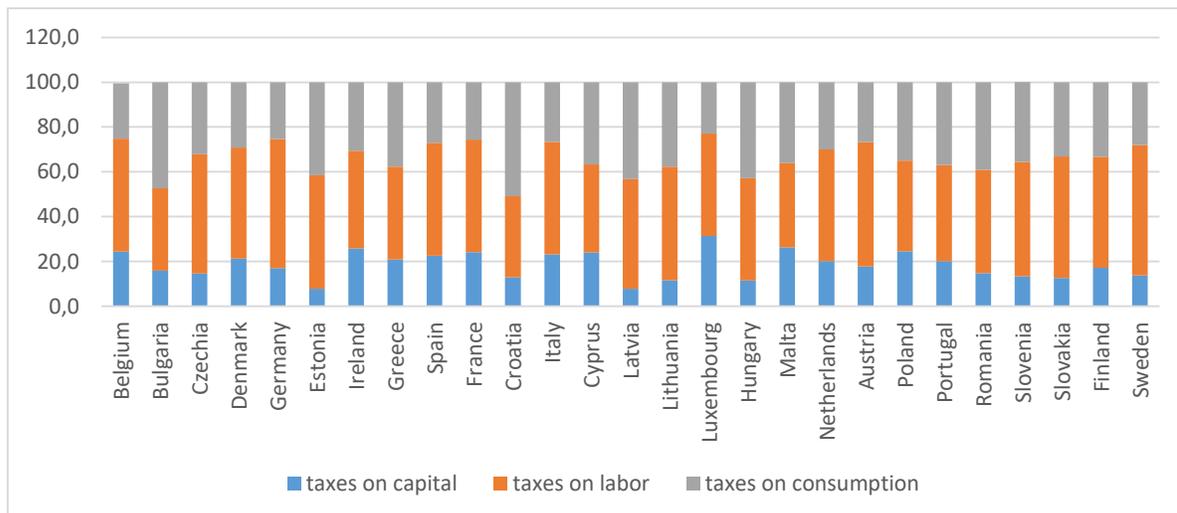
In terms of the distribution of tax revenues by type of tax base (consumption, labor and capital) in the EU-27, labor taxes provide the largest share of revenue (51,7% in 2018), followed by taxes on consumption (27,8%) and then capital taxes (20,4%). The share of labor taxes in total tax revenues increased between 2007 and 2009, when it reached 53,2%, and decreased progressively from 2010 to 2015, when it represented 51,6%. Between 2014 and 2018 this quota stabilized, as well as the weights for consumption and capital taxes.



Source: Taxation Trends Report 2020

Figure no.4. EU 27 tax revenue, by tax base, 2007-2019, % of total tax revenue

The structure of taxation also differs significantly between Member States. Some Member States have a higher proportion of income from consumption taxes and a relatively lower proportion of labor taxes. To be noted the situation in Croatia and Bulgaria, which have about half of all income from excise duties. Capital taxes range from about a third in Luxembourg to less than 10% of total tax revenues in Estonia and Latvia.



Source: Taxation Trends Report 2020

Figure no.5. Distribution of tax revenue in the EU-27, by tax base, 2019, % of total tax revenue

Replacing the company's profit tax with value added tax



We believe that instead of taxing profits, economic growth would be achieved by focusing on consumption taxation, which is also an alternative to increase total revenues. More than 160 jurisdictions currently collect VAT revenue, accounting for about 20% of global taxation. Goods and services (which are subject to VAT), including cross-border e-commerce, are also on the rise, as is real-time VAT reporting. However, the obligation to comply with VAT law can be turned into an opportunity for companies that create a higher degree of standardization for their global operations. Many use outsourcing and collaboration options to solve this problem.

Usually, the method for increasing the revenues to the budget is *to increase the income tax rates*. But in present, value added tax (VAT) is becoming the most sought tool, and companies need to reevaluate their fundamental approaches to compliance with VAT legislation as a result. *As a percentage of global taxation*, VAT has grown steadily in importance, from less than 5% in the 1960s to a high of almost 20,2% in 2016, due to countries that wanted to lower their corporate tax rates, which serve as a means of attracting and retaining investment.

To support their business, most countries relied on income/ profit tax. By introducing VAT, increasing VAT rates or implementing measures to broaden bases, they can reduce corporate tax rates, or at least avoid increasing them, without a net loss of tax revenue. Also, more and more countries are increasing their VAT rates (especially after the financial crisis of 2008), currently 10 countries have rates of over 22%; the 20% threshold is unanimously accepted as the applicable upper limit, due to the risk of fraud and the perceived regressive nature of VAT, as higher VAT values can lead to increased costs.

A new source of revenue is in the attention of various countries, namely cross-border e-commerce sales, which is the trend of updating VAT policy to cope with the new technological world. It also analyzes the business-to-consumer (B2C) digital services provided by external service providers, as well as the import of low-value goods, which are usually ordered online through online platforms.

It should be noted that VAT "is becoming digital", in response to the increase in fraud in this area, but also as a result of the growth of the digital economy and the general desire of tax authorities to reduce their operating costs and improve their efficiency. Initially, compliance with VAT legislation was a relatively easy problem to manage, by submitting VAT forms, but in the near future each country will have its own rules for resolving errors or updates.

The shift to consumption taxes provides companies an opportunity to fundamentally rethink their global approach to tax planning and how to comply with tax legislation. Similarly, in the case of tax administrations, whose ultimate goal should be to create a greater degree of standardization at the level of global operations, reducing the number of adjustments required at the local level.

Scenario on the use of consumption tax (VAT) to increase tax revenues

The purpose of the study is to examine the effects of consumption taxes on tax revenues and to make a forecast based on the conclusions obtained from the model.

We start from the hypothesis that if we increase the consumption tax, implicitly we obtain an increase of the total fiscal revenues. The analysis uses annual series, from 2006-2019. The indicators chosen for the model are total tax revenues (dependent variable) and consumption tax (independent variable), both of them being measured as a share of GDP. The applied methodology is of quantitative type and consists in the processing and analysis of these variables. The data refer to the EU-27 average and were taken from the AMECO database.

Table no. 1. Values of consumption tax and total tax revenue for the EU-27 in the period 2006-2019 (%)

	Consumption Tax (%)	Total tax revenues (%)
2006	10.91	25.79
2007	10.89	26.03
2008	10.64	25.35
2009	10.53	24.44
2010	10.82	24.62
2011	10.94	24.98
2012	11.01	25.81
2013	11.06	26.15
2014	11.09	26.25
2015	11.08	26.18
2016	11.12	26.19
2017	11.12	26.33
2018	11.18	26.46
2019	11.10	26.51

Source: AMECO, author processing

Thus the regression model can be written in the form:

$$d(VFTt) = a_0 + a_1d(ICt) + et.$$

where: t - time index (2006, ..., 2018), d - the differentiation operator, IC- Consumption tax (independent variable), VFT - Total Tax Revenues (dependent variable), a_0 , a_1 - the parameters of the regression model, e_t - error variable.

The essential problem of any regression model is the determination of the model parameters, and for the interpretation of the results obtained with the help of the linear regression model it is necessary to establish, from the beginning, whether it can be considered correct.

In this context, the data in Table no. 1 were entered into the EViews program, resulting in the data in Table 2.

Table no.2. The simple linear regression model between VFT dynamics and IC evolution

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IC_EU27	2.995786	0.559219	5.357085	0.0002
C	-7.064888	6.134986	-1.151574	0.2719
R-squared	0.705148	Mean dependent var		25.79613
Adjusted R-squared	0.680577	S.D. dependent var		0.681627
S.E. of regression	0.385239	Akaike info criterion		1.061655
Sum squared resid	1.780905	Schwarz criterion		1.152949
Log likelihood	-5.431588	Hannan-Quinn criter.		1.053205
F-statistic	28.69836	Durbin-Watson stat		0.816273
Prob(F-statistic)	0.000172			

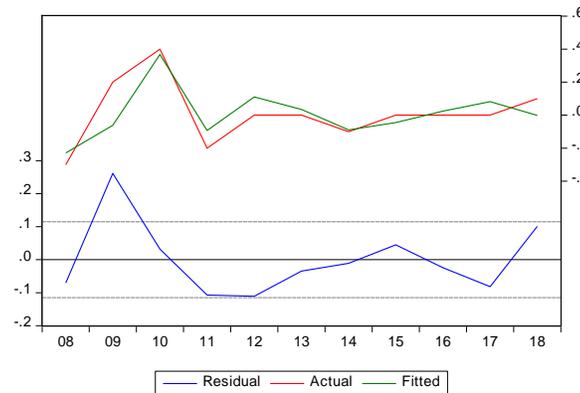
Source: calculations in EViews, based on the data in Table no 1.

The graphical results are presented in figure 6.

The hypothesis of the link between VFT dynamics and IC evolution is not rejected at the 5% threshold (concretely, $0.0002 = 0.002\% < 5\%$), and the probability that the overall model is not significant is $\text{Prob}(F\text{-statistic}) = 0.000172$, value below the standard threshold of 5%. The errors do not show the 1st order autocorrelation phenomenon: the value of the Durbin-Watson statistic is $dw = 0.81$, given that the threshold in theoretical statistics is, 1.35, for $n = 14$ and $k = 1$. This means that:

$$0 \leq dw = 0.81 \leq 1.35$$

Under these conditions, we continue with the application of the other tests.



Source: calculations in EViews, based on the data in Table 1.

Figure no. 6. The simple linear regression model between VFT dynamics and IC evolution

For higher order autocorrelation we apply the Breusch-Godfrey Lagrange test. The results are presented in table 3.

Table no. 3. Breusch-Godfrey error autocorrelation test

F-statistic	10.65595	Prob. F(2,10)	0.0033
Obs*R-squared	9.528858	Prob. Chi-Square(2)	0.0850

Source: calculations in EViews, based on the data in table 3.8.

The probability attached to the hypothesis of independence (non-autocorrelation) of errors is 8,5%, which means that we accept the hypothesis of lack of autocorrelation, at least up to order 2 (testing for a higher order leads to similar results, but the number of degrees of freedom is little).

For heteroskedasticity, we apply the White test. The results are as follows:

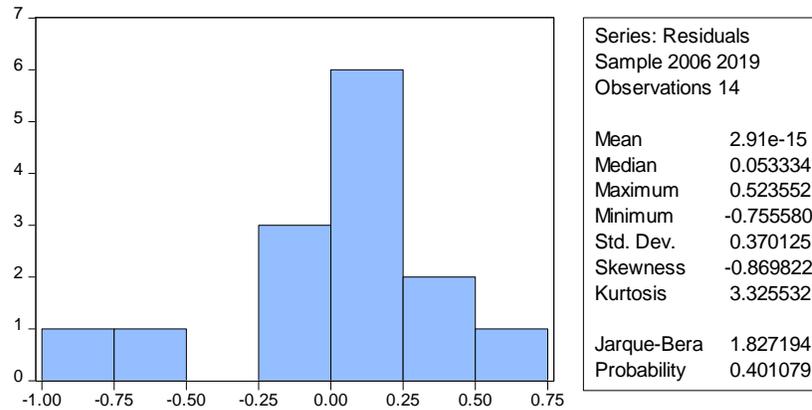
Table no. 4. White test of heteroskedasticity of errors

F-statistic	4.446027	Prob. F(2,11)	0.3850
Obs*R-squared	6.258215	Prob. Chi-Square(2)	0.4380
Scaled explained SS	5.346250	Prob. Chi-Square(2)	0.6900

Source: calculations in EViews, based on the data in Table 1.

The probability attached to the null hypothesis (errors are not heteroskedastic) is 38.5%, higher than the standard threshold of 5%, which means that we accept the hypothesis of lack of heteroskedasticity.

For the normal distribution of errors we apply the Jarque-Bera test (figure 7).



Source: calculations in EViews, based on the data in Table 1.

Figure no.7. Jarque-Bera error distribution normality test

The value of the Jarque-Bera test is $JB = 1.82$, lower than the threshold in the χ^2 distribution with 2 degrees of freedom, for the 5% threshold, ie 5,991. Specifically, the risk of errors not being normally distributed is 40.10%. Under these conditions, we accept the hypothesis of normality of error distribution.

Given the test results, we consider that the model $VFT_t = 2.9957 * IC_t - 7.0648$ properly assesses the link between IC dynamics and VFT evolution.

In other words, when the value of the share of consumption taxes increases by one unit, the value of the share of total tax revenues will increase by 2.99%.

The analysis of the forecast capacity of the model regarding the dependence between VFT and IC in Romania in the period 2006-2019 can be performed based on the statistical indicators proposed by H. Theil.

These indicators, adapted to the model under analysis, were calculated based on the following relationships:

- Theil coefficient

$$T = \frac{\sqrt{\frac{1}{n} \sum_{t=1}^n (\hat{y}_t^* - y_t^*)^2}}{\sqrt{\frac{1}{n} \sum_{t=1}^n \hat{y}_t^{*2} + \frac{1}{n} \sum_{t=1}^n y_t^{*2}}} = 0,0069 \in [0, 1] = 0,0069 \in [0, 1]$$

The significance of this indicator is inversely proportional to its size, respectively the lower its value, tending to zero, the better the forecasting capacity of the model.

- the weight of the deviation

$$T^A = \frac{(\bar{\hat{y}}^* - \bar{y}^*)^2}{\frac{1}{n} \sum_{t=1}^n (\hat{y}_t^* - y_t^*)^2} = \frac{(\bar{\hat{y}}^* - \bar{y}^*)^2}{\sigma_z^2} = 0,0000$$

where: $\bar{\hat{y}}^*$ = the average of the theoretical values of the endogenous variable; \bar{y}^* = the average of the real values of the endogenous variable; σ_z^2 = the dispersion of the residual variable uncorrected with the number of degrees of freedom.

The interpretation of this indicator, which highlights the existence of systematic errors, is that, in the ideal case, its value is equal to zero, this tending to one in the case of estimation errors over the entire time series.

- the weight of the dispersion

$$T^D = \frac{(\sigma_{\hat{y}_t^*} - \sigma_{y_t^*})^2}{\frac{1}{n} \sum_{t=1}^n (\hat{y}_t^* - y_t^*)^2} = \frac{\left[\sqrt{\frac{1}{n} \sum_{t=1}^n (\hat{y}_t^* - \bar{\hat{y}}^*)^2} - \sqrt{\frac{1}{n} \sum_{t=1}^n (y_t^* - \bar{y}^*)^2} \right]^2}{\sigma_z^2} = 0,0871$$

which is also defined in the range [0, 1], which measures the oscillating evolution of the two series, respectively the adjusted series and the empirical series of the endogenous variable. This indicator has the same meaning as the previous ones, respectively a low value indicates a good forecasting capacity, while a value close to one expresses an error in specifying the model.

- the share of covariance

$$T^C = \frac{2(1-r)\sigma_{\hat{y}_t^*}\sigma_{y_t^*}}{\frac{1}{n} \sum_{t=1}^n (\hat{y}_t^* - y_t^*)^2} = 0,9128$$

where: r = the linear correlation coefficient between the estimated value of the endogenous variable, \hat{y}_t^* , the real one, y_t^* :

$$r = \frac{\sum_{t=1}^n (\hat{y}_t^* - \bar{\hat{y}}^*)(y_t^* - \bar{y}^*)}{n\sigma_{\hat{y}_t^*}\sigma_{y_t^*}}$$

It can be easily seen that the significance of this indicator is analogous to those mentioned above.

In fact, the four indicators are found in the following equation proposed by Theil:

$$\frac{1}{n} \sum_{i=1}^n (\hat{y}_i^* - y_i^*)^2 = (\bar{\hat{y}}^* - \bar{y}^*)^2 + \left(\sigma_{\hat{y}_i^*} - \sigma_{y_i^*} \right)^2 + 2(1-r) \sigma_{\hat{y}_i^*} \sigma_{y_i^*}$$

whose interpretation is achieved through the significance of these indicators.

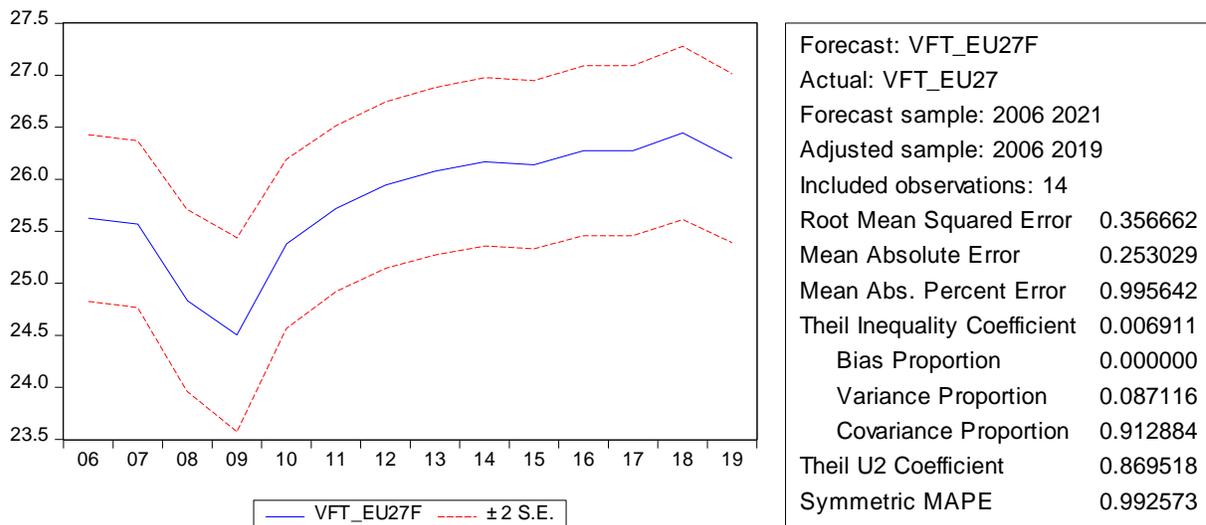
Following the calculations performed with the help of the EViews program in order to test the forecasting capacity of the model regarding the dependence between the consumption tax and the total fiscal revenues, the following information resulted:

Table no.5. Results of testing the forecast capacity of the model regarding the dependence of the average monthly receipts and the commercial area

Indicator`s name	Symbol	Value
Coeficientul Theil	T	0,0069
Ponderea abaterii	T^A	0,0000
Ponderea dispersiei	T^D	0,0871
Ponderea covarianței	T^C	0,9128

Source: calculations in EViews, based on the data in Table 1.

Following the analysis of the results obtained, it is found that the model has a good forecasting capacity, due to the low values recorded in the case of the Theil coefficient, the weight of deviation and dispersion and, therefore, can be accepted to make a forecast of the value of the consumption tax. (figure 8).



Source: calculations in EViews, based on the data in Table 1.

Figure no.8.Theil Test

For the next two years the forecast value based on calculations and analysis performed under the econometric model the share of total tax revenue for the EU-27 will be:

Table no. 6. Total Tax Revenue Forecast

years	Estimated VFT (%)
2020	26.21
2021	26.17

Source: calculations in EViews, based on the data in Table 1.

Therefore, when the value of the share of consumption taxes increases by one unit, the value of the share of total tax revenues will increase *by 2.99%, it is a directly proportional relationship*. So, if we increase the consumption tax, implicitly the tax revenues will also increase.

Increasing tax revenues by modernizing the tax administration

We believe that in any jurisdiction, tax revenues will increase if it increases the role of the tax administration in order to increase revenue collection, encourage voluntary compliance and reduce tax evasion. In this sense, it is necessary to digitize much more in everything that means the functionality of state institutions (the case of Bulgaria is well known, which, after the digitization of the tax system, currently has a collection rate three percentage points higher than Romania, in conditions which most taxes are similar or even lower than ours).

Some of the measures that should be taken in this regard are: modernization of the fiscal administration / infrastructure, by adopting a modern legislation; efficient administration and close cooperation with companies; endowing the tax administration with innovative systemic solutions and modern analytical tools; strengthening the tax administration, customs service and fiscal control (see the case of Poland); Monitoring money transfers using efficient analytical tools led to the implementation of the IT - STIR solution, a system for monitoring bank transfers with algorithmic analysis (big data) in order to immediately identify bank accounts used by fraudsters, respectively to detect abnormal transactions and provide information about them to the tax authorities.

Regarding the identification of the most fraud-prone sectors, the fuel package has been implemented: a set of measures to combat VAT fraud, in particular carousel fraud related to intra-EU trade in liquid fuel. Another solution to combat fraud in this sector is the transport package - SENT, an online monitoring system for the transport of goods.

4. Conclusions

At international level, the structure of taxation varies significantly. Usually, developed countries rely on direct taxation (corporate income), and, to a relatively lesser extent on social contributions, and in less developed countries indirect taxation (especially VAT) and social contributions predominate. As for the distribution of tax revenues by type of tax base in the EU-27, labor taxes provide the largest share of income, followed by consumption taxes and then capital taxes. The share of labor taxes in total tax revenues increased between 2007 and 2009, and decreased progressively from 2010 to 2015; between 2014 and 2018 this share stabilized, as well as the weights for consumption and capital taxes.

As the overall revenue collected from corporate taxation is low, it is necessary for the authorities to consider other sources of income. Given that, in present, in the structure of tax revenues at EU level, income from labor taxation predominates, we consider that an additional tax on labor (wages, social contributions) is not appropriate.

We consider that the prior objective in economic growth is the structure of the fiscal system and not the level of taxation. Economic growth can be achieved by gradually shifting the calculation base of taxes in the area of consumption and real estate (especially residential), on the one hand, and reducing tax rates on low incomes (including social security contributions), on the other hand, this stimulates demand, increases the number of jobs, reduces income inequality. Therefore, a low level of taxation of income from wages and capital, together with an increase in consumption taxes, can lead to economic growth. This is also the reason why in our paper we chose consumption taxation and testing the directly proportional correlation to the (total) tax revenues.

Therefore, additional sources of revenue, except for OECD proposals related to profit taxation, and VAT targeting, are: reducing tax exemptions for investors, better tax administration, with a focus on digitalization, structural changes in national and international tax policies - the application of turnover taxation instead of profit (we consider that this measure should be applied only in the case of large companies, small ones / SMEs being severely affected), signing of fewer bilateral tax treaties, better cooperation in government level in terms of tax issues. We support an increase in total revenues through revenues from consumption taxation, and in this regard we made a scenario, more precisely, we tested the directly proportional correlation to the increase in consumption taxes and the increase in total tax revenues. The data used were for the European Union, for the period 2006-2019 (% of GDP).

Other sources of additional revenue, with the exception of OECD proposals relating to the taxation of profits, and targeting a VAT targeting tax, are: reducing tax exemptions for investors; better tax administration, with a focus on digitization; structural changes in national and international fiscal policies; signing fewer bilateral tax treaties; better cooperation at government level on tax issues.

References

Egger, P., Nigai, S., 2016, The impact of globalization on tax structures in OECD countries, <https://voxeu.org/article/too-much-globalisation-can-be-taxing>

*** European Commission, Taxation Trends Report 2020

*** ECIPE, 2020, Unintended and Undesired Consequences: The Impact of OECD Pillar I and II Proposals on Small Open Economies, Occasional Paper no.4

*** ICTD (International Centre for Tax and Development), 2017, How Can Governments of Low-Income Countries Collect More Tax Revenue? Working Paper 70

*** OECD Corporate Tax Statistics Database, 2019

*** OECD, 2020, Tax Challenges Arising from the Digitalisation of the Economy. Update on the Economic Analysis and Impact Assessment.

*** OECD, Tax Policy Reforms 2020

*** Tax Foundation, 2020, Sources of Government Revenue in the OECD

*** Tax Justice 2020, <https://taxjustice.net/reports/the-state-of-tax-justice-2020/>

*** World Economic Forum, 2019, Corporate Tax, Digitalization and Globalization

*** ZEW, 2020, Global Corporate Tax Reform to the Worse? – Assessing the OECD Proposals. ZEW policy brief No 1