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**Fiscal Pressure in Romania and the Influence
of the Value Added Tax**

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Abstract

Fiscal pressure is an economic phenomenon, tolerated by natural or legal persons within certain limits, which expresses the intensity with which a percentage of the population's income is taken through direct or indirect taxation.

For the Romanian economy, fiscal pressure is an extensive indicator because it shows the taxpayers' burden towards their obligation to pay taxes.

Because of the need or the desire to oppose this economic phenomenon, some taxpayers resort to different methods to avoid the varied mandatory tax payments to the Romanian state, especially the value-added tax payments. For this reason, we consider that fiscal pressure could be one of the current problems in the Romanian society.

The purpose of this article is to identify whether certain taxes and fees of the Romanian state lead to a high fiscal pressure on the Romanian taxpayer, and to show the evolution of these taxes and fees of the Romanian government. For this purpose, the authors built an econometric model, through which they aimed to capture the influencing factors of fiscal pressure in Romania, during the period between 1998 and 2018.

After we performed the error-specific tests, namely the Harvey homoscedasticity test and the Jarque-Bera normality test, we obtained a multiple regression model, which revealed that the value-added tax and the level of the gross domestic product have a strong influence on the fiscal pressure, with a 5% level of significance taken into account.

Keywords: tax, fiscal pressure, fiscal pressure VAT, gross domestic product, the level of consumption of the population, the level of fiscal pressure.

JEL Classification: E62, H20, H21, H26, H71.

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1. Introduction

In Romania, taxation is the system for collecting direct and indirect taxes through the National Agency for Fiscal Administration, a public institution that seeks to ensure that taxpayers meet their tax compliance obligation, establishing and collecting the contributions due by taxpayers according to the law. The major interest of a state is to collect as many taxes and duties as possible from their taxpayers, individuals or legal entities. This is a problem of fiscal policy; however, the existence of a high level of fiscal pressure compared to the level of affordability of taxpayers to participate in consolidating the state budget by partially transferring revenues or profits made by them, can lead in time to a decrease in the demand of consumer goods, and consequently to a reduction in the living standards of the population. The fiscal pressure of the taxpayers is at the base of the economic development of a state, in a directly proportional relationship.

The issue of fiscal pressure is a very current topic in Romania since we are still in the process of modernization of the tax system, trying to analyse the positive and negative effects of this system. The lack of available capital tends to be a rather major problem for the tax system attributable to poor investments in Romania. The revenues obtained by the taxpayers are relatively low to be burdened with taxes and duties quite high for the current Romanian living standards.

Thus, Romania, an emerging state in the European Union, assumes a series of risks, on several levels.

In social terms, various social disorders and general dissatisfaction of the taxpayers can occur, leading to tax riots.

In economic and social terms, the phenomenon of "undeclared work, tax evasion, and fraud occurs, with the financial crime recording increased rates. A review of the literature showed that fiscal pressure is the main determining factor in tax evasion and the underground economy.

According to Lippert and Walzer (1997), the large share of GDP taken by taxes in total (and, especially, high rates of income tax) is the primary cause of long-run growth in the underground economy.

Chiarini et al. (2013) empirically investigated the long-term characteristics of tax evasion and its relationship with the fiscal pressure by using time series on the VAT base avoided in Italy. On this occasion, the authors pointed out that tax evasion and tax rate are Granger-caused by each other: tax avoidance legitimizes high tax rates, and high tax rates push up tax evasion.

In economic terms, a high level of fiscal pressure will discourage progressivity through labour, investment, and savings, with taxpayers deliberately avoiding the realization of real incomes for which they should have paid taxes.

According to Trandafir and Brezeanu (2011), the increase in the fiscal pressure leads to a decrease production, the latter determining the decline of the tax revenues. A fiscal pressure in the inadmissible area discourages economic activities and individual initiatives.

2. Problem Statement

According to the literature, taxation is the system of establishing the financial resources of the state, it is considered by taxpayers a form of coercion, being also called fiscal pressure.

Through the concept of fiscal pressure we determine the degree of taxation, the degree to which the taxpayers of a country bear, on account of the income obtained from their activity within the companies they administer, taxes and duties, as levies mandatory by law, established and levied through clear constraints by the state.

The fiscal pressure represents the proportions of the society's income to which, obligatorily, the taxpayers - natural or legal persons - contribute in favor of the state, in the form of taxes of any type, timely transferring them, to the consolidated budget of the state they belong to.

General fiscal pressure

In the first chapter, we want to present the general fiscal pressure in Romania, comparing with the level of the fiscal pressure in the EU over a period of 20 years, between 1998-2018.

Table 1. Fiscal Pressure

	1998	1999	2000	2001	2002	2003	2004	2005	2006
EU 27	-	-	-	-	41.06	40.69	41.14	41.28	42.17
Romania	8.1	14.2	16.4	20.3	23.4	28.6	29.9	26.4	28.2
	2007	2008	2009	2010	2011	2012	2013	2014	2015
EU 27	42.41	40.65	39.04	38.92	39.34	40.30	40.70	40.84	40.60
Romania	28.9	28.1	27.3	26.6	27.7	28.1	27.4	27.3	27.8
	2016	2017	2018						
EU 27	40.70	40.85	41.03						
Romania	26.5	26.2	27.1						

Source: Authors' calculations based on Eurostat data.

3. Research Questions/Aims of the Research

Although official statistics do not publish the rate of fiscal pressure at regular intervals (annually), we managed to determine the rate of fiscal pressure using the Eurostat database, for the targeted period.

Our results indicate that, in Romania, the level of general fiscal pressure was below the level registered in the European Union, during the whole period analysed, which reveals that other states of the European Union had higher levels of fiscal pressure, for all categories of taxes and fees.

However, the degree of Romanian fiscal pressure suffered an ascending scale from year to year. As we can see in Table no. 1, we calculated the level of general fiscal pressure, taking into account all direct, indirect taxes, social and health contributions, compared to the gross domestic product; the rate of fiscal pressure started from 8.1% in 1998, reaching 27.1% in 2018. The increasing trend of fiscal

pressure in Romania shows that the fiscal policies adopted over the years did not stop this phenomenon, but amplified it. Taxpayers felt the fiscal pressure at a much more worrying level in the coming years.

As a next step, we wondered if the fiscal pressure established on different taxes is at the same level, or, in Romania, the tax burden is higher for a certain category of tax, such as indirect tax, as value-added tax?

But, before breaking down the level of fiscal pressure on the most important categories of taxes and fees, we want to present the evolution of taxes and duties in Romania.

In Romania, the taxation of income from salaries brought a high degree of fiscal burden until 2003, when the tax rate was reduced by 5%.

In 2005, Romania adopted a single tax rate of only 16%, this rate remaining among the most burdensome taxes in Europe according to the perception of some employers and employees.

The relationship between tax rates and tax revenues is based, according to Laffer (2004), on the idea that changing the taxes has two types of effect on revenues:

- an arithmetic effect, in the sense that when the tax rates are reduced, the tax revenues will also be reduced with the amount of the decrease in rate;
- an economic effect, which recognizes the positive impact that low tax rates have on labour, on production, on the employment, and implicitly on the tax base, by providing incentives to increase these activities.

Analysing the effects of the reduction of tax rates in 2003 and 2005, in relation to the evolution of fiscal revenues collected by Romania in the same period, we can make the following assumptions related to the idea transmitted by Laffer (2004):

When the tax rate was reduced by 5%, the total receipts from taxes and net social contributions (including imputed social contributions) after deduction of amounts assessed, but unlikely to be collected, increased, compared to 2002, by 28.21%, while, in 2004, the total receipts increased by 23.83% compared to the year of the tax rate reduction, highlighting a potential economic effect of this change in the tax rate.

The stabilization of the tax rate at 16% also had an economic effect in the sense that, in 2005, it was observed an increase of 18.93% in the total receipts from taxes and net social contributions (including imputed social contributions) after deduction of amounts assessed, but unlikely to be collected, compared to 2004. In 2006, the receipt increased by 22.36% compared to the year in which the tax rate reduction was operated.

The burden of social security contributions was felt by the companies more strongly than the other mandatory tax levies, due to the high rates that had to be paid by the employer, and also due to the employer's mentality.

When analysing the evolution of the fiscal pressure in Romania, we found that taxpayers felt the same fiscal pressure from the point of view of the corporate tax of about 25%, according to Law no. 414/2002 with subsequent amendments and completions. However, the level of the Romanian fiscal burden remained below the threshold of 30% of the Gross Domestic Product. Concerning these figures, we can

say that Romania had lower taxation than the EU average, which, in 2003, was at 40.69%.

Although the tax on income from salaries was reduced to 16%, during the period under review, the other contributions related to the labour force remained at a high level and this was reflected in the living standard of the population and low consumption power in Romania.

The rates of direct taxes due and borne by taxpayers affect the volume of sales and services through prices, therefore they are also factors causing fiscal pressure. All these taxes affect the self-financing and payment capacity of companies.

The history of economic development of the world countries shows that high fiscal pressure is a brake on economic development, and is the cause of reduced activity, tax evasion, smuggling, undeclared work, and lack of major investments

The Romanian government sensed these risks of fiscal pressure and tried to support taxpayers with various programs and financial measures to ease the procedure for paying taxes and contributions.

Fiscal Pressure of Value-Added Tax

Regarding the level of fiscal pressure from the point of view of value-added tax, we can see in Table no. 2 the evolution of Romania compared to the average level of the European Union during the period between 1998 and 2018.

Table 2. Fiscal Pressure VAT

	1998	1999	2000	2001	2002	2003	2004	2005	2006
U.E. 27	-	-	-	-	6.8	6.7	6.9	7.05	7.2
Romania	1.7	2.7	3.5	4.4	5.9	7.5	7.19	7.48	7.64
	2007	2008	2009	2010	2011	2012	2013	2014	2015
U.E. 27	7.3	6.9	6.5	6.8	6.8	6.8	6.9	6.9	6.9
Romania	7.86	7.72	6.59	7.55	8.44	8.35	8.03	7.56	7.95
	2016	2017	2018						
U.E. 27	7.01	7.09	7.16						
Romania	6.40	6.12	6.33						

Source: Authors' calculations based on Eurostat data.

During the analysed period, the level of the fiscal pressure of the value added tax was in a continuous increase in Romania. According to the data integrated in Table no. 2, a significant increase can be observed during the period 2003-2015, where the fiscal pressure of taxpayers, in terms of this indirect tax, was above the level of the European Union, noting that Romania's most burdensome tax was the value added tax.

According to the data and statistical reports to which we had access, covering the analysed period 1998-2018, the fiscal policy adopted in Romania, starting with 2003, was one of reducing the share of direct taxes (such as corporate tax) and increasing of indirect taxes (value added tax and excises), respectively of the introduction to a higher extent parafiscal taxes. The increase in the share of indirect taxes was made

amid the increase of the VAT tax base and the increase of excises, a proposal coming from the European Commission.

As we have shown in the introduction, high tax rates lead to tax evasion.

According to the Romanian Fiscal Council, in 2013, approximately 75% of the tax evasion was generated in the field of value-added tax. Based on the same source, in 2010, when the standard VAT rate increased from 19% to 24%, tax evasion increased with a 1.6% of GDP, compared to 2009.

In 2016, the Romanian government adopted the policy of reducing the VAT rate from 24% to 20%. The effects of reducing the VAT rate were felt immediately also at the level of the fiscal pressure of VAT which was, for the first time in the last 12 years, below the level of the European Union.

4. Research Methods

Estimation of the Linear Regression Model

Starting from the findings of the mentioned studies, we wanted to identify if, in Romania too, certain taxes and burdens burden the general public debts, lowering the living standard of the Romanians, by reducing the power of consumption.

In this sense, we created an econometric model, based on a multiple regression, through which we want to find out the influences of value added tax, excise duties, gross domestic product, public debt and consumption over the analysed period of 20 years, in the interval between 1998 and 2018.

Data on macroeconomic variables were extracted from the Eurostat database. The frequency of the data is annual, from 1998 to 2018. The country considered for the analysis is Romania.

Table 3. Variables used

Symbol	Description
GDP	Gross domestic product
IMP-PROD-IMPORT	Tax on imported products
DAT PUB	Public Debts
CONSUMPTION	The level of consumption of the population
VAT	Value added tax
ACCIZE	The level of excise duties
FISCAL PRESSURE	The level of fiscal pressure

Source: Made by the authors.

Within the multiple regression, we chose as a dependent variable the level of fiscal pressure, and as independent variables the level of gross domestic product, the tax on imported products, public debt, the level of consumption, excise duties and value-added tax.

Dependent Variable: Fiscal Pressure
 Method: Least Squares
 Date: 03/29/20 Time: 11:36
 Sample (adjusted): 1998 2018
 Included observations: 21 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP	-0.018108	0.006062	-2.987064	0.0105
IMP_PROD_IMPORT	0.518415	0.260085	1.993257	0.0677
DAT_PUB	-0.172805	0.096574	-1.789357	0.0969
CONSUM	-0.246555	0.150258	-1.640876	0.1248
VAT	0.745627	0.085578	8.712835	0.0000
ACCIZE	-1.950145	1.835380	-1.062530	0.3073
C	16.10285	7.011805	2.296534	0.0389
R-squared	0.915563	Mean dependent var		10.14853
Adjusted R-squared	0.876592	S.D. dependent var		7.696047
S.E. of regression	2.703576	Akaike info criterion		5.096245
Sum squared reside	95.02120	Schwarz criterion		5.444751
Log likelihood	-43.96245	Hannan-Quinn critter.		5.164277
F-statistic	23.49357	Durbin-Watson stat		1.598205
Prob(F-statistic)	0.000003			

Figure 1. Regression of fiscal pressure on macroeconomic variables

Source: Authors' contribution using EViews 7.1.

The results of multiple regression highlight the fact that the level of VAT and the level of gross domestic product have a significant influence on the fiscal pressure in Romania. The other variables, namely public debt, tax on imported products, level of consumption and excise duties, do not have any influence on the tax burden, as the probabilities attached to them exceed the significance threshold of 5%. So, we decided to eliminate these variables from the model, keeping only the significant variables, thus obtaining a new regression.

Dependent Variable: Fiscal Pressure
 Method: Least Squares
 Date: 03/29/20 Time: 12:08
 Sample: 1998 2018
 Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP	-0.021082	0.007855	-2.683726	0.0152
VAT	0.637864	0.076192	8.371800	0.0000
C	5.059758	1.472973	3.435066	0.0030

R-squared	0.799515	Mean dependent var	9.772192
Adjusted R-squared	0.777239	S.D. dependent var	7.696876
S.E. of regression	3.632741	Akaike info criterion	5.549415
Sum squared reside	237.5425	Schwarz criterion	5.698633
Log likelihood	-55.26886	Hannan-Quinn critter.	5.581799
F-statistic	35.89110	Durbin-Watson stat	0.866513
Prob(F-statistic)	0.000001		

Figure 2. Regression of fiscal pressure on significant macroeconomic variables

Source: Authors' contribution using EViews 7.1.

As can be seen above, the two variables, the level of gross domestic product and the level of VAT, retain their strong significance in the new regression. The value of coefficient of determination highlights the fact that 79.95% of the variance of the fiscal pressure is reproduced by the regression model. The probability attached to the Fisher test (F-statistic) is visibly lower than the significance threshold of 5%, which indicates the validity of the regression model performed.

When the gross domestic product increases by one unit, the level of fiscal pressure will decrease by 0.021 percentage points, provided that the other factors remain constant.

When the VAT tax is increased by one unit, the level of fiscal pressure will increase by 0.637 percentage points, provided that the other factors remain constant.

Next, we tested the normality as well as the homoscedasticity of the residues.

Heteroskedasticity Test: Harvey

F-statistic	0.075039	Prob. F(2,18)	0.9280
Orbs*R-squared	0.173643	Prob. Chi-Square(2)	0.9168
Scaled explained SS	0.135582	Prob. Chi-Square(2)	0.9345

Test Equation:

Dependent Variable: LRESID2

Method: Least Squares

Date: 03/29/20 Time: 12:28

Sample: 1998 2018

Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.803193	0.856126	0.938171	0.3606
GDP	0.001702	0.004566	0.372773	0.7137
VAT	0.001843	0.044285	0.041618	0.9673

R-squared	0.008269	Mean dependent var	1.046990
Adjusted R-squared	-0.101924	S.D. dependent var	2.011415
S.E. of regression	2.111433	Akaike info criterion	4.464175
Sum squared resid	80.24672	Schwarz criterion	4.613392
Log likelihood	-43.87383	Hannan-Quinn critter.	4.496559
F-statistic	0.075039	Durbin-Watson stat	1.118369
Prob(F-statistic)	0.927996		

Figure 3. Residual homoscedasticity testing
 Source: Author’s contributions using EViews 7.1.

The Harvey test was used to test the homoscedasticity of residues, more precisely, if their variance was constant over time. The null hypothesis of this test implies the existence of homoscedasticity at the residue level while the alternative hypothesis implies heteroskedasticity. The probabilities of the test, which are higher than the significance threshold of 5%, underline the fact that the null hypothesis is accepted, which means that at the level of disturbing factors the presence of homoscedasticity is noticed.

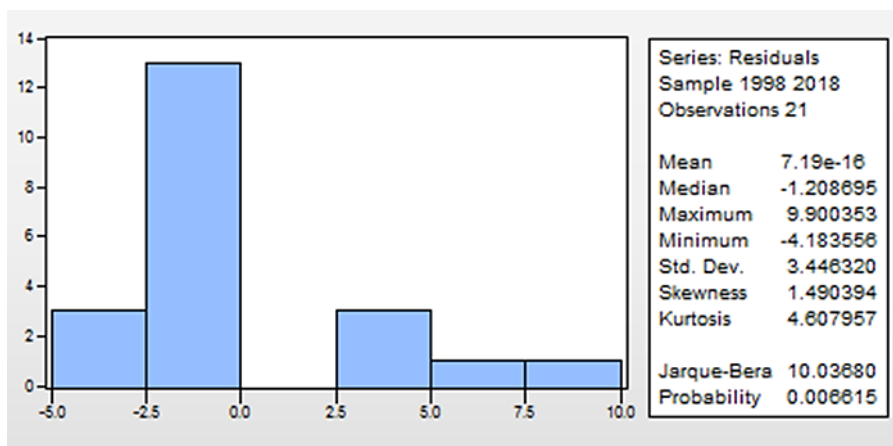


Figure 4. Residual homoscedasticity testing
 Source: Authors’ representation using EViews 7.1.

The Jarque-Bera test was used to test whether the errors are part of a normal distribution or not. The situation of a perfectly normal distribution implies the value of skewness equal to 0, and the value of kurtosis equal to 3. As these two reference values are exceeded, the errors tend to no longer belong to a normal distribution. The default assumption of the test is that the errors are part of a normal distribution. The probability of the Jarque-Bera test is lower by reference to the significance threshold of 5%, which means that the null hypothesis of the test is rejected, so the errors are not part of a normal distribution, which is also supported by the values of the skewness and kurtosis.

5. Conclusions

The concept of fiscal pressure, through paying taxes, is an important issue for the individuals and legal entities of the Romanian state.

Through this article, it was presented that in a developed national economy, it is mandatory to report the gross domestic product, where the collection of high taxes creates greater fiscal pressure, to the detriment of economic developments.

The decrease of the tax rates in Romania also favoured the decrease of the fiscal pressure degree, the taxpayers feeling more relieved and eager to claim the profit in their business, which indicates that the influences of the high rates of the value-added tax are very important for the living standard of the Romanian taxpayers.

One of the important conclusions of this article is that the decrease in tax rates, especially value added tax, had a positive influence on the tax burden in 2016. However, we cannot deny that a lower VAT rate implies, also, a lower risk of foregone revenue from this source.

Finally, we appreciate that the multiple regression model revealed that the level of VAT and the level of the gross domestic product have a strong influence on the fiscal pressure when a level of significance of 5% is taken into account, 79.95% of the variance of the fiscal pressure being explained by the model.

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