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STUDY ON THE FACTORS INFLUENCING FUEL PRICES

Mihaela TULVINSCHI
Stefan cel Mare University of Suceava, 720229, Romania
mihaela.tulvinschi@usm.ro

Abstract
The aim of the research is to carry out a study on the fiscal instruments that influence the final price in the oil field. The evolution of consumer fuel prices and the price per barrel of oil for the period 2016-2021 will be analyzed in time and space. This aim can be achieved by meeting the following proposed objectives: the need for taxation of consumption and the place of taxes in this form of taxation; analysis of taxes and fees as a corrective instrument of market failures; analysis of the influence of taxes and fees on the price of fuels and other factors that influence the price of fuels; the evolution over time of the price per barrel of oil. In order to achieve the intended goal, statistical data and analytical methods will be used. The results of the research are materialized in a linear model of the evolution of the price of the barrel of oil over time and in the conclusion that fuel pricing strategies must be based on effective taxation and taxation policies.

Key words: taxes; consumption taxes; linear model

JEL Classification: H20, H30, M41

I. INTRODUCTION

Taxation is a part of the art of economics, politics and society in general because, at the present time, in the formation of taxes and duties there are no models or patterns that apply the same tax policies in all countries of the world, there is no universally valid tax law. Over time, each form of government has tried to define and justify the presence of taxes and fees in the economy and social life, which has contributed to their presentation either as an element of well-being or as an element of security and social justice because, through them, the state ensures the functioning of society, respectively the protection of citizens. Taxation, interpreted from the point of view of its scientific character, encompasses pure mathematics because at its core is the human reason that tends to harmonize the interests of the state with the interests of the individual, through taxes and fees. These in turn must be established on the basis of clear and moral principles and laws related to fiscal, economic and political correctness. Both taxes and fees are financial instruments of an economic nature, and their emergence and development are closely related to the existence of the state, but also of money.

Olescu Gurău (2001) states that since the earliest times, taxation has gone on the same objectives that it has kept until now. The tax system is practically "the framework through which the financial resources necessary to fulfill the role of the state in the economy are ensured, while playing an important role in alleviating imbalances" (Voica, 2016).

If the tax authorities want all taxpayers to comply with the legislation, then they should be equally targeted by administrative measures. "A correct calculation involves very clear rules" (Roedler, 2014). Taxpayers are more receptive to tax compliance on a voluntary basis when tax authorities meet certain requirements, such as the focus on tax guidance services and the application of a fair tax system. "The prosperity of the tax is appreciated today, in the western countries as being more like an obstacle for the investments, for the consumption and economic activity in general than as an instrument leading to social justice" (Grosu & Socoliuc, 2008).

The aim of the research is to carry out a study on fiscal instruments: taxes and fees, which influence the final price, in the oil field. The evolution of consumer fuel prices and the price per barrel of oil for the period 2016-2021 will be analyzed in time and space. This aim can be reach by achieving the following proposed objectives:

O1: the need for taxation of consumption and the place of taxes in this form of taxation;

O2: analysis of taxes and fees as a corrective tool for market failures;

O3: analysis of the influence of taxes and fees on fuel prices and other factors influencing fuel prices;

O4: the evolution over time of the price of the barrel of oil.

In order to achieve the proposed goal and implicitly the objectives set, the research methodology refers to a methodological instrument specific to the social sciences. In this research, specific techniques were used in the researched field, namely: review of the specialized literature, synthesis, analysis, comparison and problematization.

Volume **XVII**/2021 ISSN 2344-102X
Issue (XXVII) / **October** 2021 ISSN-L 2344-102X

II. LITERATURE REVIEW

The tax system and its mechanism of operation are the subject of well-developed in the literature, and most specialists in the field have come to the conclusion that the tax system by the very fiscal policy is "a very powerful weapon, which gives the power of governments to play with it in the desired sense. The goal is to go in a healthy direction, from an economic point of view, so that the tax system has a constructive influence and not one that endangers the economic situation" (Cristea & all, 2021). Even though the tax system has effects on economic flows it "constitutes an instrument of sampling and not targeting. Its use for interventionist purposes leads to the change in the relations between prices, can lead to decreases in productivity and generates income redistributions that negatively influence on individual psychological decisions" (Mihon & Lutaș, 2014). Tax success largely depends on how the industry transfers tax hikes and uses strategies to mitigate their impact (Sheikh, Branston & Gilmore, 2021).

An important objective of European tax policy is to ensure that the corporate tax system in the European Union determines the development of activity across national borders and modern structures for their organisation. Since the application of International Accounting Standards has reduced the usefulness of accounting information for tax purposes, the European Union has sought to recalibrate the basics of accounting (Sikka, 2017).

In recent years, consumer taxes and levies are components that claim an increasingly important place in the economy of a state on the one hand due to the fact that through them the state mobilizes and realizes public revenues and on the other hand because they are levied on all citizens of a state who consume goods of the category of those subject to this category of taxation without taking into account the their income, their wealth or the personal situation of consumers. They are usually charged in percentage, proportional shares on the value of the goods and services/works carried out. Consumption taxes and charges may also be levied in the form of fixed amounts per unit of measurement. It is precisely these forms of perception that creates the false impression that they are fair, that they are borne equally by all citizens, and that the tax burdens are justly distributed. However, even if the size of indirect taxes is not a large one, if the ratio between their size and citizens' incomes is made, it is concluded that, in fact, indirect taxes are regressive, which means that a taxpayer with low incomes will bear, by way of consumer taxes, an increased tax burden.

Governments around the world are having to cope with the many public obligations and expenditures that require financial capacity. This public expenditure includes, inter alia, national defence, healthcare, investment, education, etc. These public obligations and expenditure are financed through different forms of taxation, including indirect taxes, which are levied at different rates, (Netswera & Ngwakwe, 2013) without considering the characteristics of the taxpayers (income, wealth, etc.).

It is thus possible to highlight an advantage of indirect taxation, namely: the advantage of the yield, because it is not necessary to make a profit, an income, a fortune, but a movement, a sale, a purchase, a consumption. Another advantage is the speed of tax collection and at the same time it is even less expensive than direct taxation. The great disadvantage of indirect taxation is the fiscal inequity, on the one hand, as a result of the proportionality of the tax rate, and on the other hand, because it does not consider the personal situation of the payer' (Brad, 2011).

III. THE IMPORTANCE AND NECESSITY OF TAXATION OF CONSUMPTION

Taxes and levies constitute a variable of budgetary policy. Policies that benefit action over global demand use taxes and levies as a means of conjunctural stability. Consumer taxes and charges can be a tool in the service of effectiveness if two functions of the State are considered, namely the allocation function and the adjustment function.

The use of taxes and fees for allocation purposes can be justified by two hypotheses: the existence of external effects and the guardianship desire of the State. In the event of negative external effects, divergences between private and social costs may occur. Consumer taxes and levies are intended to correct this market failure and restore optimal prices on the financial market. For example, the taxation of alcohol and tobacco meets this objective, its role satisfying, on the other hand, the state's desire to put these goods under guardianship. Through its guardianship action, the state subscribes to its individual preferences in order to maximize the collective interest. The use of collective natural resources by economic operators engaged in social costs, the particular taxation of the consumption of these resources obliges consumers to consider the cost of using these resources. Thus, an internalization of the external effects in terms of environmental policy is achieved.

Unlike economic operators, the State enjoys positive effects as a result of the application of consumption taxes, an effect which will increase public revenues, given the relative inelasticity of demand for these products and the percentage of the taxable price.

According to statistical data (https://ec.europa.eu/eurostat/statistics-explained), in Romania, there is a decrease in the share of indirect tax revenues in the total tax revenues, so that, from 47.64%, as they represented

Volume **XVII**/2021 ISSN 2344-102X
Issue (XXVII) / **October** 2021 ISSN-L 2344-102X

in 2015, they reached 40.97%, in 2019, which means, however, a slight increase compared to 2018 (the last year for which the information on tax revenues is published is 2019).

According to the information published by the European Union, the contribution of indirect taxes in the formation of tax revenues is 40.97%, while the difference of 59.03% is represented by direct taxes, of which 40.44% income from social contributions. Romania has a higher share of indirect taxes than that recorded at the level of the European Union, where a somewhat balanced state of the three categories of taxes analyzed is observed.

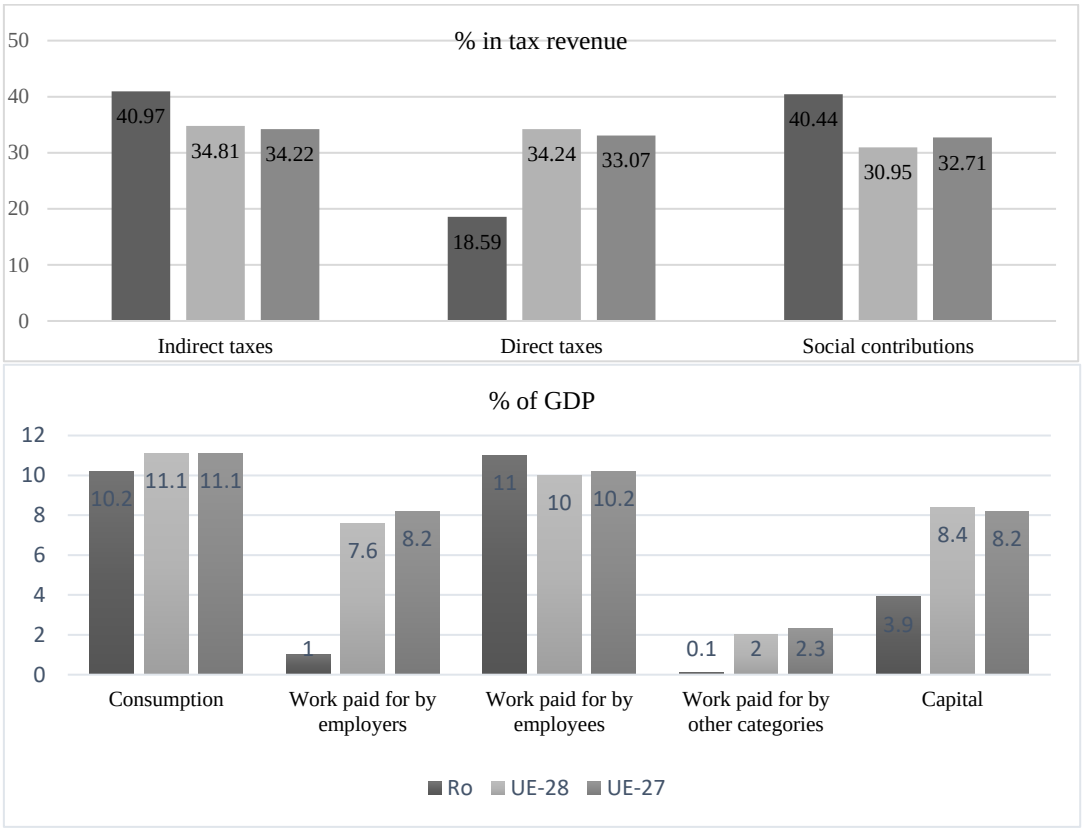

Figure 1 – Taxes in 2019 as a structure in tax revenues and gross domestic product
Source: DG Taxation and Customs Union, „Taxation Trends in the European Union", Luxemburg, 2021: 136-139, 152-155

In terms of the share in the Gross Domestic Product, consumption taxes represent an allocation of 10.2%, in Romania, below the level recorded by the European Union where the share is around 11%. The largest share at the level of the European Union is represented by the labor taxation, where, on the total, the share in the Gross Domestic Product is 20.7%.

IV. TAXES AND FEES IN THE FINAL PRICE OF THEIR FUEL

In Romania, the Board of Directors of the National Agency for Energy Regulation (ANRE) regulates the calculation of the marketing prices of petrol and diesel fuel. ANRE is the autonomous administrative authority that has as object the elaboration, approval and monitoring of the application of the mandatory regulations at national level that are necessary for the proper functioning of the electricity, heat and natural gas sector and market (https://www.anre.ro/ro/despre-anre/misiunea-anre). The economic effect of taxes and fees on the final price of fuels regulated by ANRE implies the obligation to ensure the clarity of all types of products in the oil field. As for the share of taxes and levies in the final price of fuel, it is noted that it represents 47% of the price of petrol (super 95) and 46% of the final price of diesel fuel. It is noted that the share of these taxes and fees is small compared to that of other states, where they represent 62% of the final price of petrol super 95 and 59% of the final price of diesel fuel respectively (Italy, for example).

Volume **XVII**/2021 ISSN 2344-102X
Issue (XXVII) / **October** 2021 ISSN-L 2344-102X

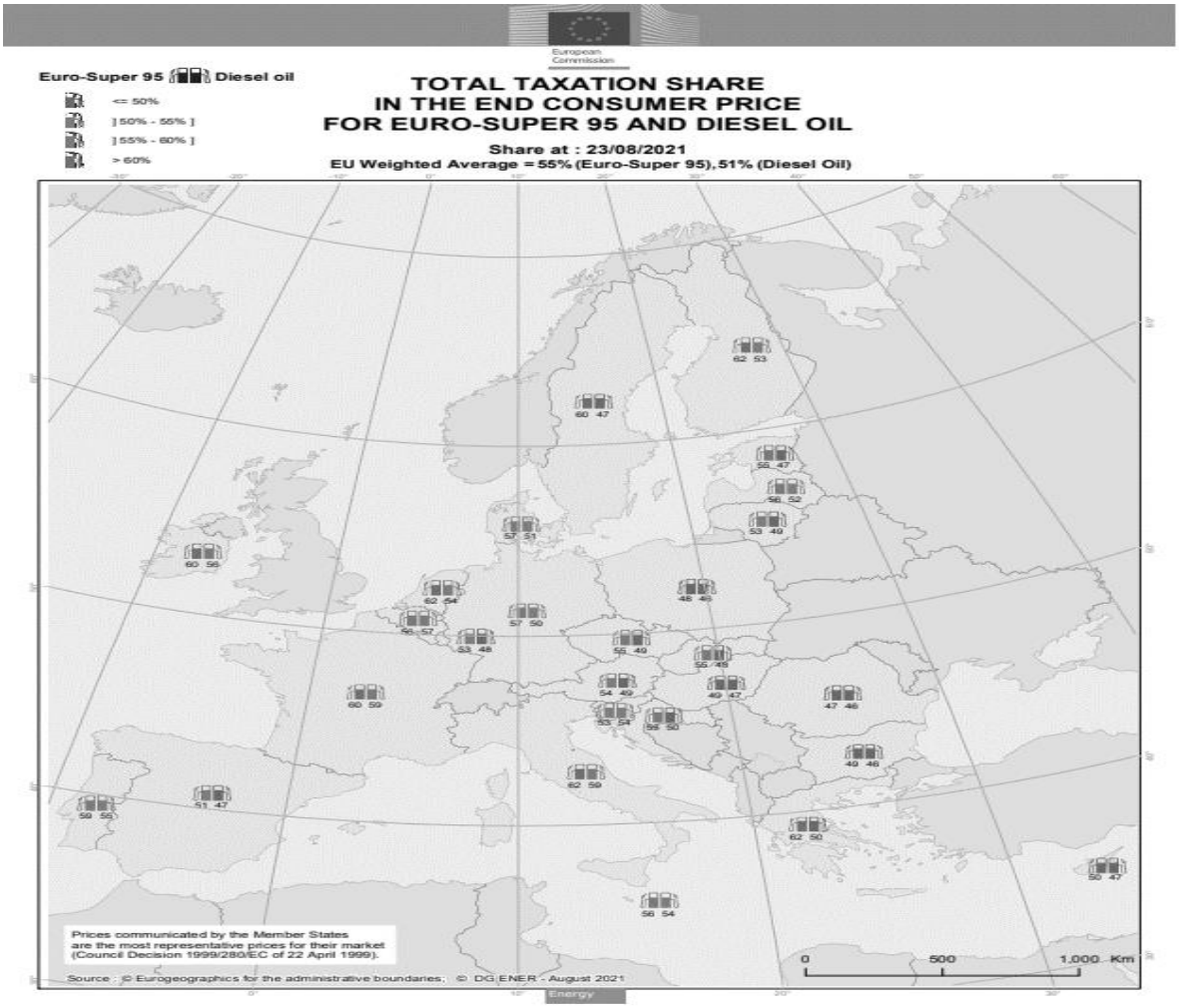

Figure 2 – Share of taxes and fees in the final price of petrol and diesel in 2021
Source: http://ec.europa.eu/energy/maps/maps_weekly_oil_bulletin/2021_08_23_taxation_oil_prices.pdf

The share of taxes and fees in the final price of fuels has an impact on economic agents. In Romania, the fuel market was characterized by a significant change in the consumer fuel price index (Figure 3). The consumer price index oscillates during 2016-2021, and the period characterized by the uncertainty of the Covid 19 virus: January 2020 – April 2020, there is a decrease in fuel prices, their level approaching the value recorded in 2016. The highest value of the consumer price index is between September 2017 and December 2017.

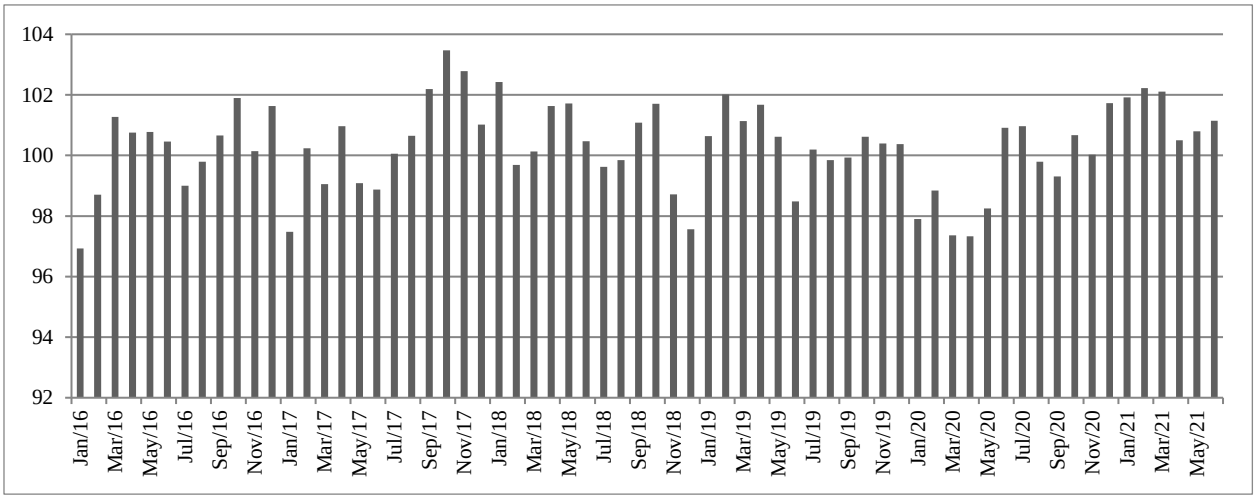

Figure 3 – Dynamics of the consumer fuel price index
Source: Processed by www.insse.ro

Volume **XVII**/2021 ISSN 2344-102X
Issue (XXVII) / **October** 2021 ISSN-L 2344-102X

As a result, the pandemic has negatively affected (Macovei, 2021) (from the point of view of suppliers) the pump prices of fuel, but this health crisis is also joined by the increasing actions regarding the use of complementary solutions for powering cars such as electricity.

The evolution of the price of petrol and diesel in the period 2016-2021 is shown in Figure 4:

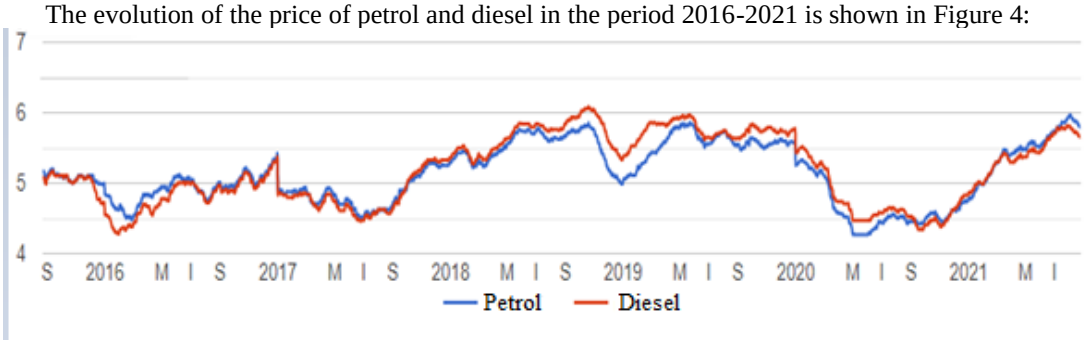

Figure 4 – Annual evolution of diesel and petrol prices in 2016 - 2021
Source: https://www.peco-online.ro/istoric.php

The evolution of the price of petrol and diesel in the period September 2020 – August 2021 is shown in Figure 5:

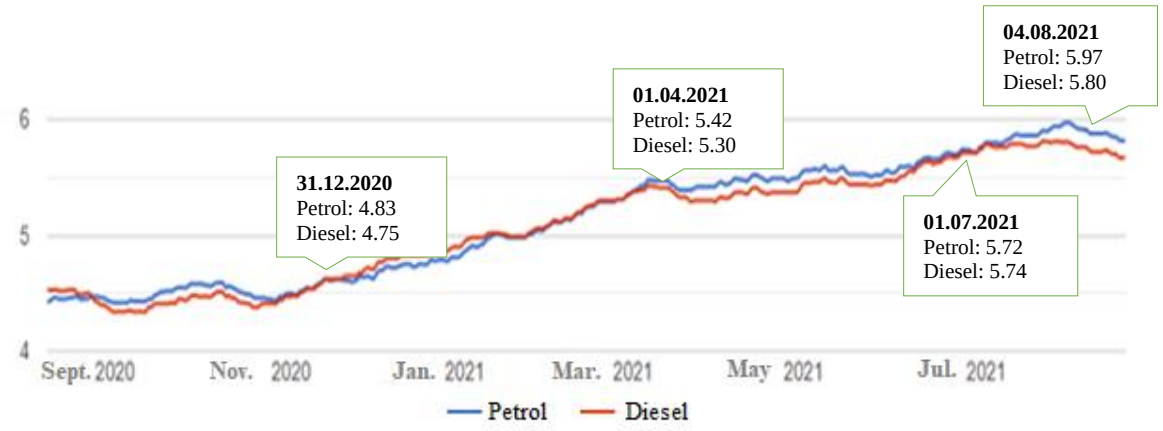

Figure 5 - The evolution of diesel and petrol prices between September 2020 and August 2021
Source: https://www.peco-online.ro/istoric.php

There is a counted maintenance of pump prices (Figure 4) during the pandemic period (March 2020 – November 2020), so that starting with 2021 the price at the pump will gradually increase (Figure 5).

A decrease in the price of fuel in 2020 is also justified by the decrease in excise duty. The excise duty on diesel was by 14.27% while the excise duty on leaded petrol decreased by 10.84% and for the unleaded one the decrease was of 13.01%. Since January, the price of fuel at the pump increases, given that the excise duty on all three elements in the fuel category has increased by 3%. In the first quarter of 2021, the price of diesel at the pump increased by 11.58%, while the average price of petrol at the pump increased by 12.22%. Analyzing Figure 5 we see the gradual increase in fuel prices in November 2020.

The accelerated increase in the price of fuel at the pump is noted, in the second quarter of 2021, the price per liter of diesel increases significantly approaching that of petrol, the difference being only 0. 02 lei between the two categories of fuel. The increase in the price of fuel at the pump does not stop here, however, the highest point being reached in August, when the increase per liter of petrol was by 23. 06% higher than the price delivered at the end of 2020 (by 1.14 lei), while the price of diesel was by 22. 11% higher than the same period last year (by 1. 05 lei). According to the analysis made in the paper (Macovei, 2021) the price of fuel has an increasing trend for 2022 as well.

The evolution of the price of the barrel of oil in the period 2016-2021 is shown in Figure 6:

Volume **XVII**/2021 ISSN 2344-102X
Issue (XXVII) / **October** 2021 ISSN-L 2344-102X

Figure 6 – The evolution of the price per barrel of oil in the period 2016 –2021
Source: https://www.peco-online.ro/istoric.php

Table 1. Model- Descriptive statistic

	N	Minimum	Maximum	Mean	Std. Deviation
PBP	72	137.00	345.00	239.8750	53.38511
Valid N (listwise)	72				

Source: Authors Computation with the aid of IBM SPSS Statistics, version 26

The lowest price per barrel of oil is 137 (February 2016) and the highest value is 345 (October 2018). Analyzing Figure 6, we can see the upward trend of the price per barrel of oil.

Table 2. Table Coefficients for the price per barrel of oil

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Case Sequence	.928	.284	.364	3.269	.002
(Constant)	205.987	11.927		17.270	.000

Source: Authors Computation with the aid of IBM SPSS Statistics, version 26

According to Table 2 the equation of the linear model of the evolution of the price per barrel of oil is:

$$PBP = 205.987 + 0.928 \cdot t \quad (1)$$

Where:
PBP –the price per barrel of oil;
t – the time variable, i.e. the rank of the period.

The value of the price per barrel of oil at the moment 0 is 205,987, much lower than the average price value per barrel of oil (239.8750 according to Table 3) over the period under review 2016-2021.

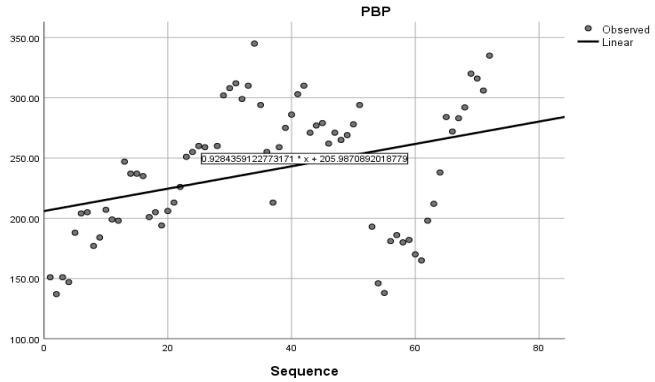

Figure 7 – Estimation of the linear regression model for the price per barrel of oil
Source: Authors Computation with the aid of IBM SPSS Statistics, version 26

Volume **XVII**/2021 ISSN 2344-102X
Issue (XXVII) / **October** 2021 ISSN-L 2344-102X

As can be seen, the price of fuel at the pump has also increased after a higher level of excise duty has been applied in 2020, which highlights yet another factor influencing the change in fuel prices, namely: the change in the barrel of oil (Figure 8).

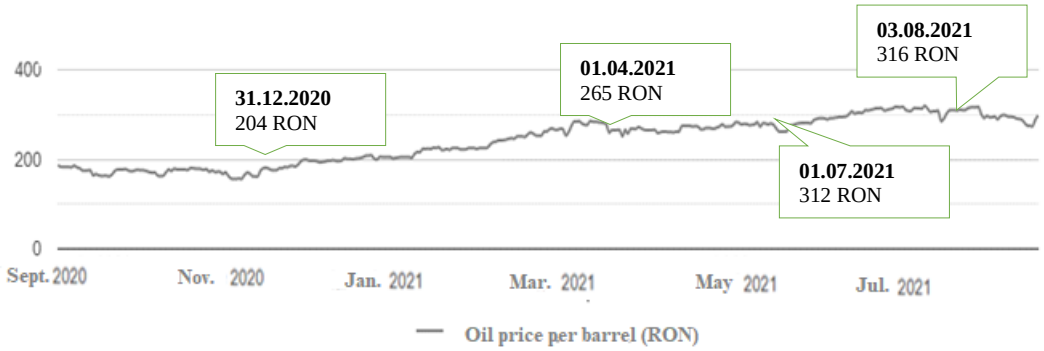

Figure 8 – The evolution of the price per barrel of oil between September 2020 and August 2021
Source: https://www.peco-online.ro/istoric.php

Analyzing the evolution of the price per barrel of oil it is observed that in the first quarter of 2021, the increase was 29. 90 lei, which, along with the increase in excise duty starting with January 1, 2021, has translated into an average increase in the price of fuel at the pump by approximately 12%. A significant increase was also recorded in the second quarter of 2021, when the price per barrel of oil increased by 17.74% compared to the previous quarter. The highest point is reached on August 3, 2021, when the price was by 54.90% higher compared to the price charged on 31 December 2020.

The price of a barrel of oil is expected to increase in 2022, which will lead to an increase in the price of petrol and diesel at the pump, so the increase in taxes and fees leads to an increase in the state's tax revenues. The figure below reveals the average price of diesel and petrol at EU level:

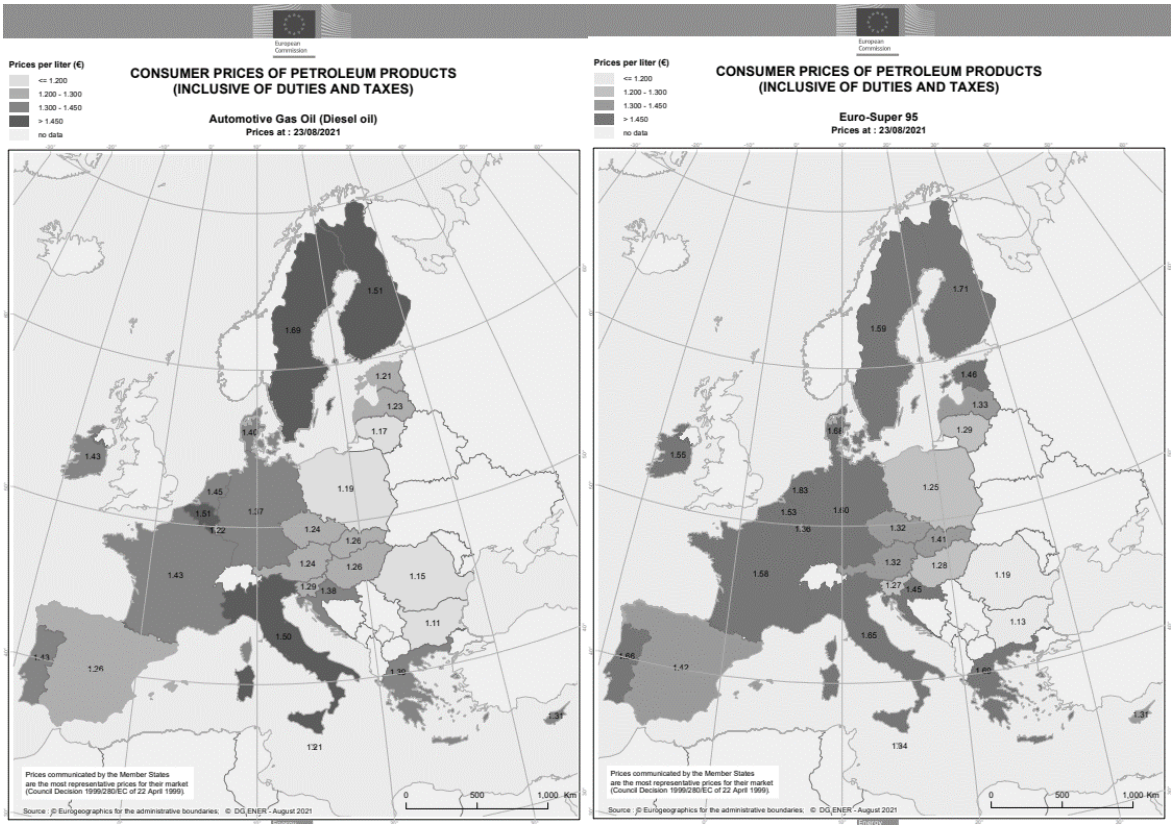

Figure 9 – The average price of diesel and petrol in the European Union
Source: https://ec.europa.eu/energy/maps/maps_weekly_oil_bulletin/2021_08_23_Oil_Prices_DIE.pdf;
http://ec.europa.eu/energy/maps/maps_weekly_oil_bulletin/2021_08_23_Oil_Prices_ES95.pdf

Volume **XVII**/2021 ISSN 2344-102X
Issue (XXVII) / **October** 2021 ISSN-L 2344-102X

Another factor that influences the price of fuel at the pump is the exchange rate, the euro and the dollar respectively. The sustained increase of the exchange rate lei/euro and lei/dollar respectively is felt together with the variation of the excise duty, of the price per barrel of oil in the final price of the fuel.

V. CONCLUSION

Internationally, each country approaches certain practices and makes certain financial decisions in order to thrive and develop. Taxes and fees are instruments of budgetary policy being used internationally in various forms. Considering all this, there are different opinions and practices regarding this instrument of taxation and financial.

The need to tax consumption, as an assumed objective of the research, can be demonstrated by putting into practice the tax principle of yield. The statistical data processed within the work highlight the significant share of taxes and fees on the final price.

As regards the excise duty analysis as a corrective instrument of market failures, we conclude that the voluntary abandonment of the neutrality of taxes and levies for the purposes of fiscal effectiveness can be highlighted in the function of regulating macroeconomic imbalances.

A conclusion related to the third objective of the research is that the level of excise duties, mainly, also leads to imbalances/changes in fuel demand in a given market.

Although the tendency, at European Union level, is to tax both petrol and diesel equally, at the moment this has not yet been achieved, which generates differentiated pump prices justified by a higher fiscal impact. In Romania, for example, the fiscal impact is very close (47% of the final price of petrol represents taxes and fees and 46% of the final price of diesel fuel is represented by taxes and fees), but there are states where the fiscal impact is different (the biggest differences are found in Sweden, where for petrol 60% of the final price represents taxes and fees, while for diesel these taxes and fees represent only 47%).

To conclude, I belive that only a fraction of the price paid at the pump returns back in the form of turnover to fuel suppliers, while a significant share is redirected to the State budget. Further research is needed in this area, as these pricing strategies must be routinely monitored and understood so that effective taxation and taxation policies can be developed for the consumption of fuel.

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