STUDY ON THE INCIDENCE OF SOCIAL SECURITY CONTRIBUTIONS ON EMPLOYMENT AND UNEMPLOYMENT, IN THE EUROPEAN CONTEXT

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Abstract

The subject of social security contributions is not fully studied taking into account its importance, so the main objective of this research is to analyze the impact they have on the labor market. Through this research it is intended to respond if social security contributions have an influence on the decrease of labor demand, as well as on the labor supply. The research methodology involves the use of descriptive and comparative methods of the current situation, at the level of seven countries within the European Union, during 2007-2017. Then they will be followed by the analysis of the relationship between the contributions and the employment rate, respectively the unemployment rate. With SPSS software, backward method, it has been concluded that there is a positive correlation between total social security contributions and the unemployment rate, as well as a negative relationship between total social security contributions and the employment rate.

Keywords: social security contributions, unemployment, employment, incidence

JEL classification: E24, H24

1. Introduction

Social security contributions are one of the mandatory levies, which have a significant impact on tax revenues. The taxpayers are both employers and employees, according to well-established quotas at the level of each state. It can be said that the payment of these contributions puts a strong mark on the

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employee's net income, as well as on employers and self-employed workers, being a major cost factor for them. Taking into account their impact, compared to the studies on taxes in general and income tax in particular, the subject of social security contributions is not fully researched.

Social security contributions (SSC) can be included in direct taxes but, unlike these, their destination is established and known in advance (Văcărel I., 2007, p. 408). They have intermediate features between taxes and fees and are payments made by taxpayers for the purpose of creating special budgetary funds, to ensure social protection (Comăniciu C., 2010, p.64).

In Romania, the social contributions due by employers and employees are applied to some calculation bases and according to the Fiscal Code, in 2018 there are three types of social security contributions:

a) Social security contributions, due to the state social security budget - 25%, 8%, 4%, depending on the working conditions;

b) Health insurance contributions, due to the budget of the National Health Insurance Fund - 10%;

c) Work related insurance contribution, due to the general consolidated budget, namely a 2.25% share.

According to the Organization for Economic Cooperation and Development (OECD), social security contributions are "compulsory payments to the public administration, which confer entitlement to future social benefits. These include: unemployment insurance benefits, injury, sickness and accidents benefits, old-age pensions, disability and survivors' pensions, family allowances, reimbursements for medical expenses or medical services. Contributions can be perceived on both employees and employers, being an indicator that refers to all government levels and can be measured as a percentage of both gross domestic product and of total taxation".

The research question of this article refers to the importance of these contributions in the gross domestic product, as well as the study of the relationship between contributions to social insurance, unemployment rate and employment rate. This research seeks to highlight important facts in the field of social security contributions by using descriptive and comparative methods across seven European Union countries selected for research.

We have chosen to study the relation between these contributions and the employment rate, because the last one represents an important element in the quantitative development of gross domestic product, but also in the qualitative development of the economy of a country.

A totally opposite action is seen in the case of a high rate of unemployment, which in the long run entails a sharp decrease in tax revenues, of which the entire population could benefit from; lead to increased social tensions by the degradation of the general welfare of the state and increase the phenomenon of poverty. The main question that would be answered by this research is whether these contributions have an impact on decrease of labor demand (by increasing the cost to employers) and on decrease of labor supply (by lowering real wages of employees).

In order to achieve the proposed research objective, we will study the situation in seven member states of the European Union during 2007-2017. The analyzed countries are: Austria, Germany, Spain (developed countries), Bulgaria, Hungary and Poland (emerging countries) and Romania, also an emerging country, but the situation in the developed and developing countries will be compared with the situation in our country.

2. Literature review

Social security contributions (SSC) have been studied from several points of view (Sendlhofer, 2001; Marx, 2001; Dingeldey, 2001; Papatheodorou, 2017), but their emphasis is lower compared to the studies of taxes and fees system or the studies of income tax (Kroft, 2015; Hagedorn, 2016; Cremer, 2004).

The relationship between income tax, social security contributions, payroll and wages was studied by Deslauriers (2018), who concluded that there wasn't significant impact on Canadian productivity, profit and employment, but there are significant effects on wages, which means that income taxes and social security contributions are almost entirely transferred to employees, in the form of lower wages. Another interesting conclusion, based on the study of ten EU countries, is highlighted by Vodă (2018), who refers to the fact that migration had a significant impact on economic growth, mainly due to the increase in social security contributions payments of the active population's exodus in the analyzed country.

Lesnik (2014) examined the underlying causes of the *high compliance rate for social security contributions* compared to other categories of taxes, in the case of Slovenia, and noted that the decrease in tax compliance of income tax, corporate tax and value added tax did not significantly influence the higher level of SSC payments. The results of the econometric models the author has reached have suggested that the rigorous activities of the Fiscal Administration in Slovenia, in the field of social security contributions, have

been an important factor in increasing the level of compliance of these contributions. A study by Giray (2017) on tax evasion related to social security contributions in Turkey and EU Member States has highlighted that the increase in SSC rates for both the employees and the employers may lead to a reduction in labor demand. This will lead to an amplification of the underground economy. Its proposal was to reduce the tax burden on social contributions, so as to reduce the phenomenon of tax evasion.

According to Široký (2014), each EU Member State has substantial autonomy in the construction and establishment of the value of income taxes and social security contributions. He concluded that from a macroeconomic point of view, social contributions bring the public budget, compared to direct taxes, approximately the same proportion of revenue, and from a microeconomic point of view, the amount of SSC payment from an average salary worker is approaching of the value of the income tax.

There have also been carried out studies about *the relationship between wages; value added tax and labor force*. These include the empirical study of the tax system in Germany, conducted by Laszlo (1999). He concluded that it is advisable to lower social security contributions to offset the loss of revenue, resulting from the increase in value added tax. He also said that in order to reduce unemployment, a balanced budgetary shift from VAT contributions would lead to an increase in employment, only if the increase in the VAT rate would not significantly change consumer prices.

In the empirical study of Ooghe (2003), he worked with comparable data within the Eurostat group and pointed out that more than half of the burden of these contributions is borne by the employees, and the change in the tax burden towards them is more pronounced, if the reciprocity between contributions and benefits is stronger. Given that there is a clear link between the payment of contributions and subsequent benefits, the employee may charge this contribution as a price instead of a fee. Consequently, in order to reduce the distorting effects, it is important for the relationship between social contributions and associated benefits to be more visible to citizens, in order to avoid any negative effects on wage costs, labor demand and private savings (Goudswaard, 2015).

3. Research methodology

The first part of the paper will illustrate an overview of the current situation regarding the subject of the research. Seven European Union member

states were selected for study: Romania, Bulgaria, Poland, Hungary, Germany, Austria and Spain.

The reason for choosing these countries is due to the fact that it was wanted to include developed (Germany, Austria, Spain) and emerging countries (Bulgaria, Poland, Hungary) in the study. Three countries were selected from each category and Romania will be studied compared to their situation, which is an emerging country too.

Another reason for this choice is that one of them is a founding member of the European Economic Community, two countries joined EU in 2004 (Hungary and Poland) and then Bulgaria, which joined EU in the same year with Romania, respectively 2007. Also among the selected countries are also states outside the Eurozone, but also Eurozone countries, among them Austria, which joined the EU in 1995.

The data used in the study was taken from databases such as OECD, Eurostat, KMPG, as well as official data websites from the studied countries. *In the first phase*, the current situation of the seven surveyed countries will be presented in terms of the income tax rate and social security contributions rate in the year 2018. Data are expressed as a percentage of total labor cost. *In the second phase*, the collection of social security contributions for employees and employers, expressed as a percentage of Gross Domestic Product, will be presented for a period of 11 years, namely 2007-2017.

In the second part of the article, the correlation between unemployment rate, employment rate and social security contributions will be analyzed using the SPSS econometric analysis program. The analysis will involve a comparison between the results obtained in the seven countries, focusing on their grouping according to the level of development. The unemployment rate and employment rate will be expressed as a percentage of the total population, and social security contributions (employee and employer) will be expressed as a percentage of Gross Domestic Product (GDP).
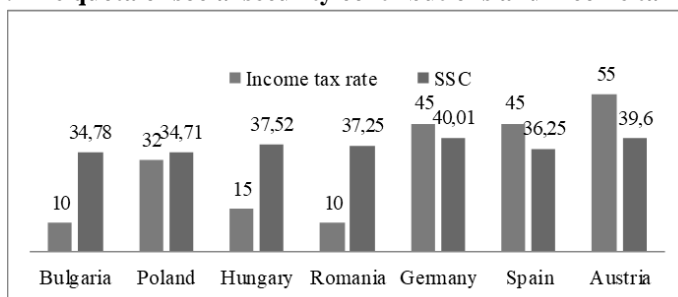
In order to answer to the research question, respectively to identify the effects of social security contributions on employment rate and unemployment rate, the backward method of the SPSS statistical program was used (Bunescu, 2014; Samuel, 2014; Situmorang, 2019). This procedure involves step-by-step removal of the variables, starting with the one with the lowest statistical significance and finalizing with the acceptance of those independent variables that have the highest statistical significance, namely p-value <0.05. We chose to develop two models of multiple linear regressions, in which we had *two*

dependent variables: the employment rate, the unemployment rate and the *independent variables* considered were: total social security contributions, employees' social security contributions, social security contributions paid by employers.

4. Overview of the current situation regarding the evolution of social security contributions and income tax rate

Within this section, we will study the current situation of the seven analyzed countries, in terms of the evolution of employees' and employers' social security contributions and income tax. Figure 1 shows the percentage of total labor cost, respectively percentages of income, the tax rates applied to social security contributions and income tax.

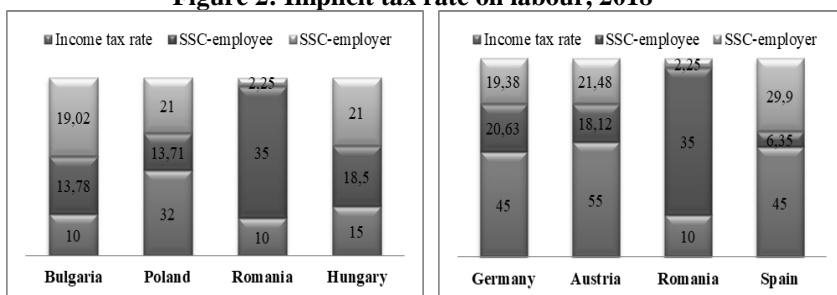**Figure 1: The quota of social security contributions and income tax rate, 2018**

Source: own processing, based on Taxes rates online,
https://home.kpmg/xx/en/home.html

It is noticed that Poland is the only emerging country which has a high income tax rate, respectively 32 percent of labor cost. However, this is a progressive tax and applies to the taxing amount of PLN 85 528 (approximately USD 24 500) and below this, the tax rate is 18% (SSPTW, 2018). Since 1 January 2018, there have been major fiscal changes in Romania, including the reduction of income tax, from 16% to 10%, but also in changing employers' contributions to the social security system that will be borne by employees. This contributes to a significant increase of the tax burden on employees, which may face a decrease in net income, despite the planned reduction in their social security contributions. The situation in Bulgaria and Hungary remained unchanged from previous years; they have the same tax rates since 2008, in Bulgaria and 2016, in the case of Hungary.

In the case of emerging countries, it can be seen that the rate of income tax is lower than the rates applied for social security contributions, but by analyzing the graphical representation for developed countries, this situation is inversely, respectively the higher fiscal pressure is exerted by income taxes. This can be explained by tax incentives in these countries, either in terms of encouraging labor demand, which may result in decrease of the unemployment rate or in terms of labor supply incentives, which directly or indirectly can lead to increases in individuals' incomes. Taking into account the quotas of social security contributions, they are similar in the groups of countries, with values between 36.25 and 39.6 percentage points.

In figure no. 2 is being studied, from the perspective of the emerging countries (left) and the developed ones (right) - in comparison with Romania, the burden of social security contributions, from the point of view of the employer and the employees, as well as the fiscal pressure of the income tax, in the framework of labor force taxation, in the reference year 2018.

Figure 2: Implicit tax rate on labour, 2018

Source: own processing, based on Taxes rates online,
https://home.kpmg/xx/en/home.html

Labor taxation provides unique information about income tax paid by employees and social security contributions levied on employees and their employers. In the above figure, without doing a numerical study, it can be observed, that in 5 out of 7 countries, the pressure exerted by employees' social security contributions is less than the pressure exerted by the employer's contribution. Exceptions to those observed are in Germany and Romania, and the most significant difference between contribution rates is found in our country (35% employee, 2.25% employer), where since January 1, 2018 there were significant changes in the Fiscal Code, with reference to taxes, fees and

social security contributions. In terms of employees' contributions, the lowest relative pressure is found in Spain: 6.35%.

In the two countries where it is find the lowest social security contribution for the employers (Romania) and where the lowest social security contribution for the employees (Spain) is encountered, according to the fiscal code, the following types of contributions are collected:

- In Romania, the employer's 2.25% share represents the labor insurance contribution, and the 35% share of the employee includes: the pension contribution (25%, 8% and 4% depending on the working conditions) and health insurance contribution (10%);

- In Spain, the employer's share of 29.9 percent of the labor cost is divided into: health insurance contribution (23.6%), unemployment insurance (5.5%), in-kind insurance (0.2%) and a guarantee fund for employees (0,6%), while the share of employees of 6,35% is divided into: the health insurance contribution (4,7%), the unemployment insurance (1,55%) and vocational training (0,2%).

The pressure of employers and employees` social security contributions are found in almost equal proportions, in the case of Hungary, Austria and Germany.

In Germany, four categories of contributions (health, medical assistance, pensions and unemployment) are paid, in the same proportions for both the employees and the employers. Accident insurance costs, unlike the four mentioned above, totaling 19.38 percent, are borne solely by the employer and it is 1.16% of the calculation base.
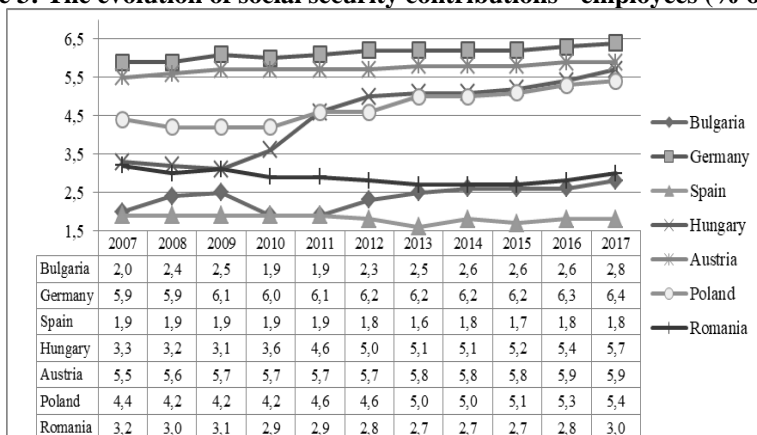
In Hungary, the contribution of employees to social security is 18.5% and consists of health insurance (7%), pensions (10%) and unemployment insurance (1.5%), and the employer pays a social tax of 19,5% and a 1,5% contribution to the training fund. Regarding Austria, there are four categories of social security contributions, namely unemployment insurance contributions, pensions, sickness, accident and miscellaneous. Also, in the case of Austria, contributions to accident insurance are in the responsibility of the employers.

As can be seen, in the emerging countries, the share of compulsory social contributions in the implicit tax rate on labor occupies about three quarters of it, most of the gross salary of the individual being directed to SSC. Thus, the share of social security contributions has the following proportion in the total labor cost (income tax+ SSC employer +SSC employee), based on own calculation: 77,6% for Bulgaria, 78,8% for Romania, 71% for Hungary

and 66,71% for Poland. While in the developed countries the emphasis is on the income tax of the individual, where the fiscal pressure exerted by the social security contributions is at a lower level in the implicit tax rate on labor, namely: 47% of the labor cost in Germany, 41,8% in Austria and 44,6% in Spain.

Figure 3 shows the evolution over a period of 11 years of the social security contributions related to employees, calculated as a percentage of gross domestic product. As can be seen, the share of SSCs in GDP over the period under investigation has been in an oscillating trend in most of the years. In the category of developed countries, there is an interesting situation that highlights the fact that in Spain, the state budget does not benefit from a significant percentage of the employees' SSC. This can underline the existence of a low pressure on taxpayers-employees, compared to Germany and Austria. These two are in the top of the list and mainly have a linear trajectory in terms of share in GDP. Thus, the lowest contribution in GDP is 1.6 percentage points in 2013 - Spain, while the highest is in Germany, in the year 2017 with 6.4 percentage points in gross domestic product.

Figure 3: The evolution of social security contributions - employees (% of GDP)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Bulgaria	2,0	2,4	2,5	1,9	1,9	2,3	2,5	2,6	2,6	2,6	2,8
Germany	5,9	5,9	6,1	6,0	6,1	6,2	6,2	6,2	6,2	6,3	6,4
Spain	1,9	1,9	1,9	1,9	1,9	1,8	1,6	1,8	1,7	1,8	1,8
Hungary	3,3	3,2	3,1	3,6	4,6	5,0	5,1	5,1	5,2	5,4	5,7
Austria	5,5	5,6	5,7	5,7	5,7	5,7	5,8	5,8	5,8	5,9	5,9
Poland	4,4	4,2	4,2	4,2	4,6	4,6	5,0	5,0	5,1	5,3	5,4
Romania	3,2	3,0	3,1	2,9	2,9	2,8	2,7	2,7	2,7	2,8	3,0

Source: own processing, based on Eurostat database

In the category of emerging countries, there is a different situation from that of developed countries, given the fact that in Hungary and Poland the level of SSC in GDP is growing, remarkable. This situation in Hungary
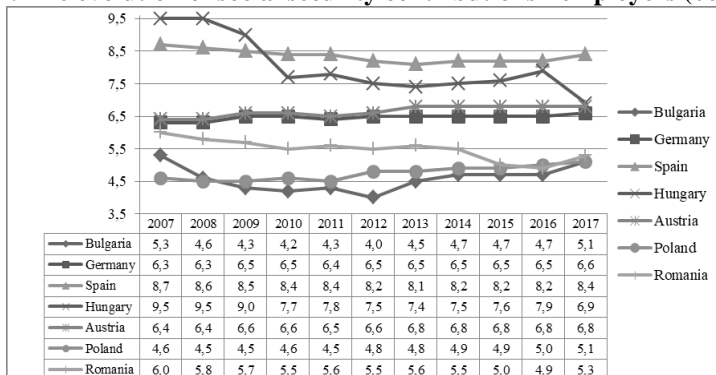
may be due to the increase in 2010 of the SSC-employee, from 17% to 18.5% of gross salary in 2013 to the present.

Regarding our country, Romanian employees contributed to the growth of gross domestic product in relatively linear proportions from year to year, with values ranging from 2.7 to 3.2 percent, although the SSC share was the same, 16% of the monthly gross wage. For Bulgaria, the only significant change was the sharp decline in 2010, mainly due to the drop in the SSC-employee share from 13% in 2009 to 12.1% in 2010, which rebounded on an upward trend until 2017.

Figure 4 shows the evolution of employers' social security contributions, calculated as a percentage of gross domestic product for 2007-2017. Also in this situation, Germany and Austria have a relatively linear evolution from year to year, this being mainly due to the keeping of the same SSC quota. Also, the values held by the SSC-employer in GDP are very close to those of the SSC- employees, approximately between 5 and 6.5 percentage points.

The highest share in gross domestic product is held by employers' social security contributions in Spain, ranging from 8.1% to 8.7%. This circumstance is inversely related to the situation of SSC-employees, where the share of GDP was at the lowest level in the analyzed countries. This is influenced by the fact that Austria practices high quotas for employers, compared to employees' contributions quotas, which thus benefit from a low pressure from this point of view.

Figure 4: The evolution of social security contributions - employers (% of GDP)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Bulgaria	5,3	4,6	4,3	4,2	4,3	4,0	4,5	4,7	4,7	4,7	5,1
Germany	6,3	6,3	6,5	6,5	6,4	6,5	6,5	6,5	6,5	6,5	6,6
Spain	8,7	8,6	8,5	8,4	8,4	8,2	8,1	8,2	8,2	8,2	8,4
Hungary	9,5	9,5	9,0	7,7	7,8	7,5	7,4	7,5	7,6	7,9	6,9
Austria	6,4	6,4	6,6	6,6	6,5	6,6	6,8	6,8	6,8	6,8	6,8
Poland	4,6	4,5	4,5	4,6	4,5	4,8	4,8	4,9	4,9	5,0	5,1
Romania	6,0	5,8	5,7	5,5	5,6	5,5	5,6	5,5	5,0	4,9	5,3

Source: own processing, based on Eurostat database

Taking into account the status of developing countries, Bulgaria, Romania and Poland are in the lower half of the chart, with an oscillating trajectory between 4 and 5.3 percentage points, which indicates that gross domestic product is formed in a lesser proportion of the SSC for employees, compared to developed countries. But taking into account the share of employees' social contribution GDP, the values for employers' SSCs are higher, so the employers feel a higher pressure from this point of view.

Based on those studied above, it can be said that the differences between the developed and the emerging countries are significant; both in terms of the quotas and in terms of the social security contributions share in the gross domestic product.

5. Analysis regarding the relationship between unemployment rate, employment rate and social security contributions

The causes of high unemployment rates in Europe have been debated over time by many researchers (Siebert, 1997; Machin, 1999; Gallie, 2000; Tatsiramos, 2009; Lippe, 2018, Pasculescu, 2019). Since it is considered that the practice of high taxes, fees and contributions has negative effects in several ways, such as economic development, emergence of the phenomenon of underground economy and on direct investment, the empirical analysis in this paper aims to observe the influence of social security contributions on unemployment and employment rate.

In order to analyze the correlation between social security contributions, unemployment rate and employment rate, within the seven countries, was used the SPSS statistical program (Statistical Package for Social Sciences), following the next steps:

> - is analyzed the correlation between the employment rate, net social security contributions, social security contributions related to the employees and social security contributions related to the employers (expressed as a percentage of GDP);
> - is analyzed the correlation between the unemployment rate, net social security contributions, employees' social security contributions and employers' social security contributions (expressed as a percentage of GDP);
> - the relationship between statistically significant variables and the unemployment rate, respectively the employment rate, is analyzed with the help of multiple linear regression.

The unemployment rate in the analyzed countries expresses the total number of actively people, looking for a job, as a percentage of the total population. The employment rate expresses the share of active people with age between 20 and 64, in the total population. The net social security contribution indicator expresses the payments paid by both employees and employers to the public administration. This indicator refers to the entire government and is measured as a percentage of GDP over the period 2007-2017. The data has been taken from the Eurostat database and is expressed as a percentage.

In order to identify the effects of social security contributions on employment rate and unemployment rate, the backward method of the SPSS statistical program was used. This procedure involves step-by-step removal of the variables, starting with the one with the lowest statistical significance and finalizing with the acceptance of those independent variables that have the highest statistical significance, namely p-value <0.05.

We chose to develop two models of multiple linear regressions, in which we had *two dependent variables*:
- the employment rate (noted in SPSS: Employment)
- the unemployment rate (Unemployment).
  The *independent variables* considered were:
- total social security contributions (SSC_%GDP),
- employees' social security contributions (SSC_employee)
- social security contributions paid by employers (SSC_employer).

Also, we will take into account the determination coefficient R^2, which shows the degree of influence of the independent variables on the dependent variable. Table 1 examines the relation between the *dependent variable Employment*, and the independent variables, for the seven countries studied in the first part of the paper. For the variables to be included in the model, Sig value is required to be less than α (α = 0.05).

Table 1: Sig value for the employment dependent variable

	Dependent variable: Employment Sig Value		
	SSC_%GDP	SSC_employee	SSC_employer
Austria		0,000	
Germania	0,019	0,000	
Spania	0,000		0,000
România			0,043
Bulgaria	0,032	0,022	0,017

Polonia			0,001
Ungaria	0,010	0,004	0,007

Source: own processing with SPSS software

By performing centralization on the variables accepted in the model, the SSC_% GDP and SSC_employee independent variables are accepted in 4 of the 7 countries, and the SSC_employer variable exerts influence in 5 of the 7 analyzed states. As can be seen, in the case of Austria, the model accepted a single variable, the social security contributions of the employees, being a statistically significant variable with Sig <0,05. Thus, in Austria, there is a positive, plausible relationship between the SSC_employee and the employment in view of the large workforce, which entails the increase of contributions.

In Germany, two variables are accepted, namely total social security contributions and SSC_employer with values of Sig <0.02, which highlights the correlation between variables and also the 94% determination coefficient R^2 reinforces the veracity of the result. Also, for Spain, two variables are accepted, with Sig values of 0, which shows a strong correlation, significant with the employment rate. What can be said, based on the model, is that the relationship between the total social security contributions and the employment rate in Germany and Spain is inversely proportional. In conclusion, for developed countries, there are situations where employment rate is influenced by the indicators of social contributions.

Regarding emerging countries, Bulgaria and Hungary accept all the variables in the model, so the social security contributions have significant effects on the employment rate. In the case of Romania, the employment rate is inversely influenced by the social security contributions related to employers, namely: an increase with a unit of the social security contributions related to employers would influence the employment rate inversely, which could be the cause of the underground economy phenomenon. In the case of Poland, SSC_employer variable is also accepted and the relationship between the employment rates is directly proportional to the changes of employers' social security contributions.

Table 2 examines the correlation between *the dependent variable Unemployment* and the independent variables, for the seven studied countries. For the variables to be included in the model, it is necessary that the Sig value to be less than α (α = 0.05) and also the coefficient of determination R^2 should be as high as possible.

Table 2: Sig value for the unemployment dependent variable

	Dependent variable: Unemployment Sig Value		
	SSC_%GDP	**SSC_employee**	**SSC_employer**
Austria			0,000
Germania	0,012	0,000	
Spania	0,000		0,000
Bulgaria	0,031	0,032	0,018
România	0,037		
Polonia			
Ungaria	0,020	0,010	0,011

Source: own processing with SPSS software

By performing a centralization of the variables accepted in the model, the SSC_%GDP independent variable is accepted in 5 countries, followed by employer related social contributions that are accepted in 4 of the 7 analyzed countries and the SSC_employee variable accepted in 3 countries.

Also, for the Unemployment dependent variable, Austria accepts only a variable, but this one is related to contributions paid by employers. The value of Sig, which is equal 0, and the value of the determination coefficient R^2 of 89%, highlights the statistically significant correlation and the relationship between the two variables which is positive. This translates into the fact that an increase with a unit of measure of employers' social security contributions entails a direct proportional influence on the unemployment rate. Germany and Spain, as in the previous model, accept the same variables, having a strong significance in statistical terms, with Sig under 0.015 and R^2 of 93.4% for Germany and 97.1% for Spain. These percentages reinforce the significance of the model.

From the point of view of the linear regression model, in both countries the relation between the total social security contributions is directly proportional to the unemployment rate.

The situation in Austria, namely that the employment rate and the unemployment rate are not influenced by the total social security contributions, may be due the fact that Austrian tax policy, both in terms of contributions and taxes, does not discourage the optimal functioning of the labor market, given that in the analyzed years the unemployment rate in Austria was at the lowest level compared to other countries.

By analyzing the emerging countries, Poland is the only country that does not accept any model variables, and the unemployment rate is not

influenced by social security contributions. Again, Bulgaria and Hungary accept all three variables. The degree of influence of the independent variables on the dependent variable, respectively the unemployment rate, is at a good level, namely 65% for Bulgaria and 74% for Hungary. In the case of Romania, the variable SSC_%GDP is accepted at a statistically significant level of Sig = 0.037, but still at a low degree of influence with R^2 =45%.

In the case of the Unemployment dependent variable, Romania is the only country where there is an inversely proportionate relationship between total social contributions and the unemployment rate, respectively, the increase by a unit of measure of contributions, will lead to a decrease of the unemployment rate by 0.59 units of measure. This may be a consequence of the fact that there are incentives for employers, either from the government or from the fiscal control body, so that employers are encouraged to declare illegal work and exit from the underground economy, by registering workers and contracting work, which leads directly to increasing of social security contributions in GDP and decreasing unemployment.

As a result of multiple linear regression relations resulting from the synthesized model in Table 1, there is *a negative correlation between total social security contributions in gross domestic product and the employment rate* for all countries that have accepted this variable (respectively Germany, Spain, Bulgaria and Hungary).

As a result of multiple linear regression relations resulting from the synthesized model in Table 2, there is *a positive correlation between total social security contributions in GDP and the unemployment rate* for the countries that have accepted this variable (Germany, Spain, Bulgaria and Hungary). This can be explained by the fact that an increase in the volume of contributions, both for employees and for employers, will make the total costs of the firms to be higher than their financial possibilities, which can be translated into a decrease of employees' incomes, which directly affect the labor market.

Thus, a high pressure on the deduction of social security contributions will lead to increases in labor costs and decreases in work supply and demand for work.

6. Conclusions

The social security system has been created to improve general welfare and the importance of social security contributions has increased over the past decades, being a subject on whom it is necessary to carry out an in-

depth study of their economic and tax effects. Given that the phenomenon of unemployment is widespread, both globally and at European level, the purpose of this paper was to study the impact of social security contributions on the workforce. Because SSC are closely related to wages, their growth leads to increases in labor costs, which negatively affects the employment rate.

Based on the study, we concluded that the social security contributions rates differ greatly from one country to another, depending on the level of development, but also by fiscal policy undertaken.

Through the analysis, we wanted to observe the influence of the social contributions on unemployment rate and on labor force and the answer at the research question is that there was *a negative correlation between total social security contributions in gross domestic product and the employment rate*, as well as a *positive correlation between total social security contributions in GDP and the unemployment rate*. This result can be explained by the existence of a high tax burden on the levy on social security contributions, which leads to increases in labor cost that has negative effects, such as drops in labor demand, but also in labor supply, by diminishing the real salary of the employees.

High levels of levies from employees and employers can lead to an increase in the underground economy and a decrease in the labor force, which has a direct impact on rising unemployment. We do not believe that a drastic decrease of social security contributions is recommended, because in the short term it really can have a positively influence to employment rate, as well as the level of compliance with the payment, but in the long run, there will be deep gaps between income from social security contributions and expenditures for social protection. Thus, we believe that making and providing deductions for social security contributions, as well as providing tax benefits for low-income labor force, can lead to a long-term fiscal sustainability.

In order to stimulate the payment of social security contributions by the source of human capital, hidden in the underground economy, it is necessary to emphasize the social benefits of public services, to apply reductions of contributions for the persons that belong to vulnerable categories and also is important the application of fair treatment regarding the fiscal control carried out by the control body and not only. These measures can lead to an increase in the registered employment rate, as well as the amounts collected through contributions. However, low labor market performance is also influenced by political, economic, social factors, demographic changes, education levels, international economic development, migration etc., and the

incidence of social security contributions to unemployment and employment rate is not a primary factor of influence.

Regarding Romania, the future research directions may have as a starting point the shift of social contributions from employer to employee from 2018. This has led to an increase in gross wages by about 20%, in order to maintain the net salary of employees, so that the employer's total cost is kept at the same level. This phenomenon can be an interesting topic to research in the future, both on the development of social security contributions and the impact on the taxpayer, which can be translated into a higher fiscal pressure.

7. References

- Bunescu L., Comaniciu, C. (2014). Analysis Of Correlation Between Tax Revenues And Other Economic Indicators In European Union Member States. Studies in Business & Economics, 9(1)
- Comăniciu, C. (2011) Directions in the fiscal labyrinth, Publishing House of the "Lucian Blaga" University of Sibiu.
- Cremer, H., Lozachmeur, J. M., Pestieau, P. (2004) Social security, retirement age and optimal income taxation. Journal of Public Economics, 88(11), 2259-2281.
- Deslauriers, J., Dostie, B., Gagné, R., Paré, J. (2018) Estimating the Impacts of Payroll Taxes: Evidence from Canadian Employer-Employee Tax Data, (No. 11598), Institute for the Study of Labor.
- Dingeldey, I. (2001) European tax systems and their impact on family employment patterns. Journal of Social Policy, 30(4), 653-672.
- European Commission Database, available on https://ec.europa.eu/eurostat, last accessed on 10.02.2018
- Gallie, D., Paugam, S. (2000) Welfare regimes and the experience of unemployment in Europe. OUP Oxford.
- Giray, F. (2017) Social Security Contibutions as Payroll Tax and the Shadow Economy: A Comparison between EU Countries and Turkey, The MacroConference Proceedings of 5th International Conference on Policy Research Trends – Nice, p.11-20.
- Goudswaard, K., Caminada, K. (2015) Social security contributions: Economic and public finance considerations, International Social Security Review, 68(4), 25-45.

- Hagedorn, M., Manovskii, I., Stetsenko, S. (2016) Taxation and unemployment in models with heterogeneous workers. Review of Economic Dynamics, 19, 161-189.
- Kroft, K., Kavan, J, Lehmann ,E., Schmieder, J.,F. (2015) Optimal income taxation with unemployment and wage responses: A sufficient statistics approach. No. w21757. National Bureau of Economic Research.
- Law no. 227/2015 regarding the Romanian Fiscal Code, updated- Title V. Social Security Contributions.
- Laszlo, G. (1999) Value Added Tax versus Social Security Contributions, Journal of Economics and Statistics, 219(3-4), 308-325.
- Lesnik, T., Kracun, D., & Jagric, T. (2014) Tax Compliance and Social Security Contributions–The Case Of Slovenia, Transylvanian Review of Administrative Sciences, 10(42), 94-115.
- Lippe, T. Treas, J. & Norbutas, L. (2018). Unemployment and the Division of Housework in Europe. Work, employment and society, 32(4), 650-669.
- Machin, S., Manning, A. (1999) The causes and consequences of long term unemployment in Europe. Handbook of labor economics, 3, pp.3085-3139.
- Marx, I.: Job subsidies and cuts in employers' social security contributions: The verdict of empirical evaluation studies. International Labour Review, 140(1), 69-83 (2001).
- OECD: Taxing Wages 2018, OECD Publishing, Paris, https://doi.org/10.1787/tax_wages-2018-en, last accessed on 10.02.2019
- Ooghe, E., Schokkaert, E., & Flechet, J. (2003) The incidence of social security contributions: An empirical analysis, Empirica, 30(2), 81-106.
- Papatheodorou, C. (2017) The structure of household income and the distributional impact of income taxes and social security contributions, In Social Policy Developments in Greece, pp. 115-141. Routledge.
- Pasculescu, D., Pana, L., Pasculescu, V., M., Deliu, F. (2019) Economic criteria for optimizing the number and load factor of mining transformers, Mining of Mineral Deposits,Volume 13, Issue 1, ISSN 2415-3443 (Online), ISSN 2415-3435 (Print).

- Samuel S. E. &Tyokoso, G. (2014). Taxation and revenue generation: An empirical investigation of selected states in Nigeria. Journal of Poverty, Investment and Development, 4(1), 102-114.
- Sendlhofer, R. (2001) Incidence of Social Security Contributions and Taxes: Empirical Evidence from Austria, University of Innsbruck, Institute of Public Economics, Discussion Papers.
- Siebert, H. (1997) Labor market rigidities: at the root of unemployment in Europe, Journal of Economic perspectives, 11(3), 37-54.
- Široký, J., Střílková, R.: Social Security Contributions As "Neglected" Research Category?, Finance And Risk Vol. 1, 250-258 (2014).
- Situmorang, S. F. (2019). The Effect Of Tax Examination, Tax Administration Sanctions, Understanding Taxation, And Tax Employment (Tax Amnesty) On Compulsory Tax Compliance Personal At Kpp Pratama Medan Polonia. International Journal Of Public Budgeting, Accounting And Finance, 2(1), 1-10.
- Social Security Cost in Spain, available on https://www.accountinginspain.com/social-security-contributions/, last accessed on 09.02.2019.
- SSPTW: Social Security Programs Throughout the World: Europe, September 2018, available on: https://www.ssa.gov/policy/docs/progdesc/ssptw/2018-2019/europe/index.html, last accesed on 10.02.2019.
- Tatsiramos, K. (2009) Unemployment insurance in Europe: unemployment duration and subsequent employment stability. Journal of the European Economic Association, 7(6), pp.1225-1260.
- Tax rate online, available on: https://home.kpmg/xx/en/home/services/tax/tax-tools-and-resources/tax-rates-online.html, last accessed on 10.02.2019
- Văcărel, I. (2007) Public Finances, Didactic and Pedagogic Publishing House, Bucharest
- Vodă, A.D., Cristea, L.A. (2018) Economic and Fiscal Implications in the Post-Crisis Period, Annals of Faculty of Economics, Oradea, 1(2), 75-83.