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A STUDY ON THE EVOLUTION OF TAX PRESSURE IN ROMANIA

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Abstract

Fiscal pressure is often considered a barometer for the impact and level of taxation experienced by individual taxpayers and businesses. In Romania, the study of the tax burden has been and will remain a highly debated topic in a national as well as European context. Thus, in this article, we conducted a descriptive statistical analysis of the evolution of the tax burden in Romania, and showcased the research results in different graphically expressive ways (maps, tables, graphs), all presented from a dual perspective. On the one hand, we followed the impact of taxation on households, and on the other hand, in a broader approach, we highlighted the tax burden reflected at the county and regional level.

Keywords: fiscal pressure, local taxation, development regions, Romania

JEL classification: H20, H71

1. INTRODUCTION

Fiscal policy decisions impact the lives of taxpayers throughout the world and Romania is no exception to this rule. For the last two and a half decades, taxation has become one of the major concerns of both government officials and researchers. The tax burden is widely regarded as a measure of the effect of taxation on the taxpayers and, therefore, the evolution of the tax burden is crucial in any analysis on the impact of fiscal policy measures. However, there are only a few published studies on the matter of the tax burden in Romania and even fewer that deal with fiscal pressure at a household level, at a local level or at a regional level. Consequently, our study aims to fill this gap and provide information regarding the evolution of the tax burden in Romania at a household level, at a county level and at a development region level, for the time period between 2010 and 2012.

The current study is structured into five sections. The first section contains a brief literature review. Section two is dedicated to the presentation of the evolution of the tax burden experienced at a household level in Romania, based on the structure of the

household. Sections three and four present the results of the statistical analysis of the fiscal pressure at a county level and at a regional level. The last section contains concluding remarks and a summary of the research results presented in the previous sections.

2. LITERATURE REVIEW

Over the last decades, fiscal pressure has been a constant subject of interest for researchers in the field of taxation. Classical methods for measuring the tax burden were developed and adjusted in accordance with economic developments and technological progress in the field of data analysis. For example, Fullerton and Rogers (1993) and Harding and Warren (1999) continued and updated a study on the bearers of the tax burden designed by Pechman and Okner (1974). The aforementioned 1999 study examines the tax burden in Australia, taking into account the direct tax burden, the indirect tax burden and the tax burden on companies, concluding that the overall impact of the Australian tax system is progressive. Albouy (2009) analyzes the unfair distribution of the tax burden on U.S. taxpayers based on where they live and how it affects labor migration.

Many studies on the tax burden are based on general equilibrium models, such as those published by Bovenberg and Goulder (1996) and Rutherford and Paltsev (1999). The authors of the 1999 study use a general equilibrium model to analyze the excess tax burden of indirect taxation in Russia. Goulder and Williams (2003) show how the interaction between the taxation of goods and labor, which are not considered in general equilibrium models, lead to an underestimation of the excess tax burden. Thaiprasert, Faulk and Hicks (2013) used data on property and sales taxes in the U.S. state of Indiana that they process using a regional general equilibrium model to analyze the effect on aggregate economic indicators in the short and long term.

In the European Union as well, the fiscal pressure has been an issue of constant interest for researchers. Karageorgas (1973) talks about the distribution of the tax burden from income taxes generated by the different social categories using the example of Greece, taking transfers into account too. Comparing Greece to other European countries, the author concludes that the Greek tax system would only deepen inequality distribution tax burden between the taxpayers. Fiscal pressure is, on the other hand, the expression of tax competition between states. Overesch (2005) in a research report on the subject argues that in an international context, the establishing of the effective tax burden is a measure of the attractiveness of a location or another for multinational companies. He proposes a method for calculating the effective tax burden and, according to the proposed model, makes a hierarchy of states with the highest average effective tax rate experienced by companies. This ranking is led by Spain, Germany and France, with average effective tax rates of over 34% and concluded by Cyprus and Lithuania, with approximately 3 times smaller effective tax rates, not exceeding 13%.

Regarding Romania, in recent years interest in the study of the tax burden has increased considerably (Braga, Zărnescu & Mirea, 2010; Pripoiaie & Pripoiaie, 2011; Vintilă & Țibulcă, 2013). The issue remains, however, poorly represented when it comes to addressing fiscal pressure on a county level or on a regional level.

In this context, the current analysis undertaken of the tax burden in Romania aims to provide results that highlight the tax burden at the level of counties and development regions, as they are delineated by the administrative and territorial authorities in our country.

3. FISCAL PRESSURE EXPERIENCED AT THE HOUSEHOLD LEVEL

First, we propose an analysis of the fiscal pressure felt in Romania at the household level. To this end, we performed a graphical analysis based on data taken from the website of the National Institute of Statistics regarding the percentage of expenses with taxes and contributions in the total expenditure of a household for the period 2008-2011. The classification of households is performed depending on how those family members relate to the labor market (employees, farmers, unemployed or retired).

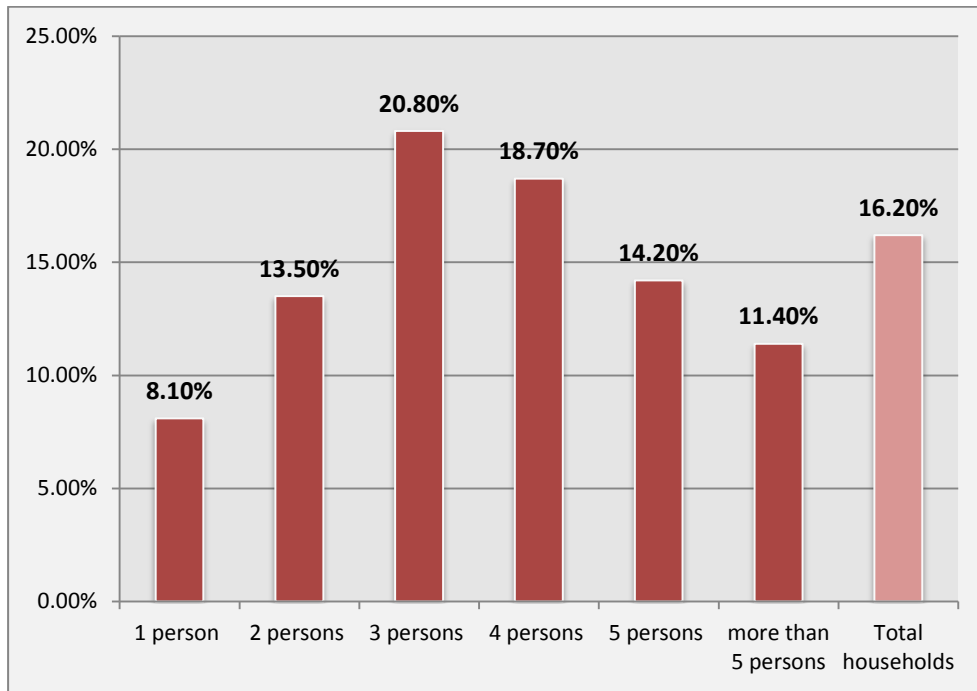
Graph 1 highlights the fact that the highest level of tax burden is felt by the households with employed family members, where more than 20% of the total expenses incurred are payments made regarding taxes and contributions. Moreover, the tax burden for those taxpayers increased by 4 percentage points in recent years, from 21.7% in 2008 to 25.7% in 2011. The lowest level of taxation is experienced by farmers' households, where only 2 to 3% of the total expenses incurred are due to the payment of taxes and contributions. But even for these households, the tax burden upward trend continues, with increases from 2% in 2008 to 3.3% in 2011.



Graph 1. Tax pressure level experienced by households in Romania (2008-2011)

Source: own processing of data taken from www.insse.ro

For all the different types of households, the tax burden registered an upward trend in recent years, a trend that can also be observed for the pressure felt by all households. In 2008, 13.5% of total expenditures were directed towards payment of taxes and contributions. In 2011, the percentage increased by 2.7 percentage points, so that 16.2% of total expenditure came to be due to payment of taxes and contributions, one of the possible explanations for this increase is represented by the effect of the global financial crisis.



Source: own processing of data taken from www.insse.ro

Graph 2. Tax pressure felt by households based on number of people in the household (2011)

Similar to the above analysis, we used data from the website of the National Institute of Statistics to analyze fiscal pressure felt at the household level in 2011, using a classification of the households done according to the number of people in each household. The tax burden felt by a household is considered to be the percentage of expenses due to payment of taxes and contributions in the total expenses incurred. The analysis results are presented and illustrated in Graph 2.

It can be seen that the highest tax burden is felt by households with 3 persons (20.8%), followed by households with 4 members (18.7%). The tax burden felt by households with 3 members is situated above the average calculated for all households by 4.6 percentage points, while the tax burden felt by households with 4 persons is situated above the average determined for all households by 2.5 percentage points. The level of taxation felt for other types of households is situated below the average established for all households in 2011.

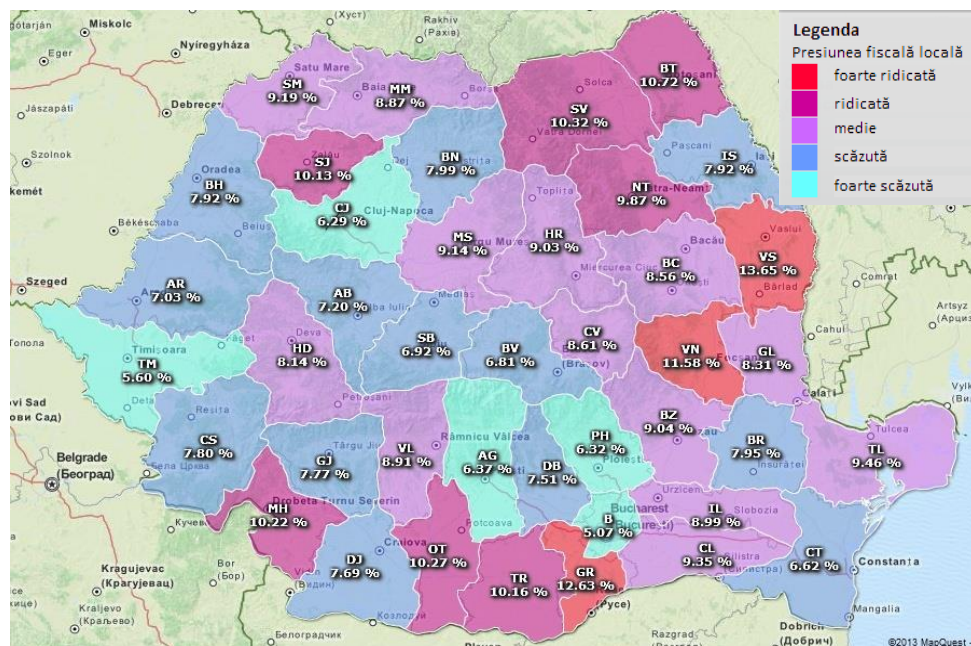
The lowest level of tax burden is felt by households with one person, where the costs of paying taxes and contributions represent only 8.1% of total household expenditure. It should be emphasized that the difference between the maximum and minimum tax burden is 12.7 percentage points, which means that a household with one person feels only about 39% of the tax burden experienced by a household with 3 members. This considerable difference highlights how differently the impact of the same tax system is felt by different categories of taxpayers.

The analysis of the tax burden on a national level does not provide, however, any information about the geographical distribution of the tax burden in Romania and does not allow comparisons between different areas of the country to determine whether, based on

the location, some taxpayers feel a higher tax pressure than others. To achieve more extensive results, we will continue with an analysis of the tax burden for counties and development regions delineated at an administrative-territorial level in Romania.

4. FISCAL PRESSURE EXPERIENCED AT THE COUNTY LEVEL

To add an extra dimension to the analysis of fiscal pressure in Romania, we believe it is useful to study taxation at a local level as well. For this purpose, it is necessary to have a good knowledge of the structure of the local budget revenues in order to determine the amount of tax revenue in each county and each region, respectively.



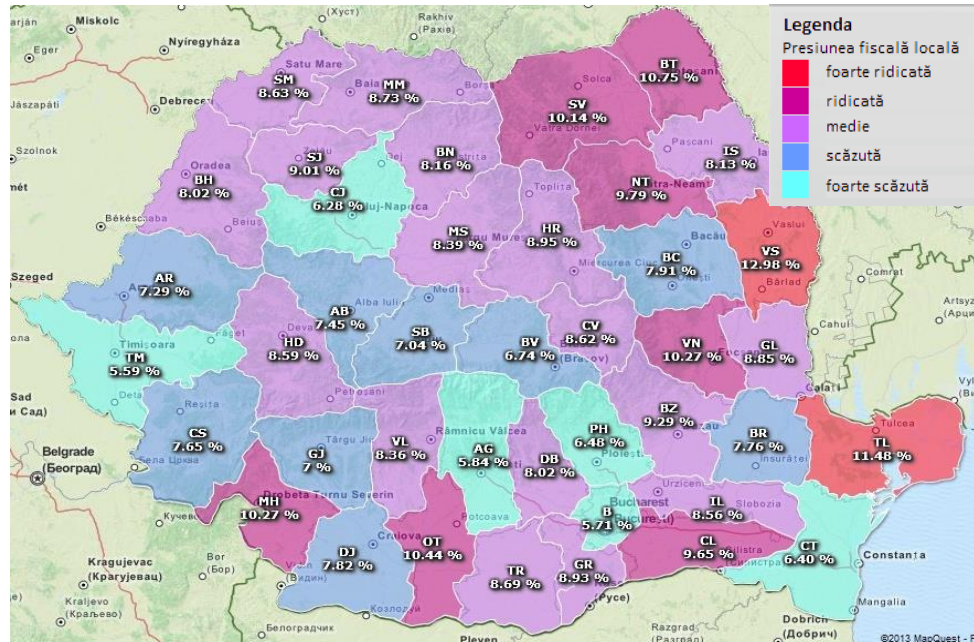
* *Note:* translation of Legend – Local fiscal pressure (from top to bottom): very high; high; medium; low; very low

Source: own achievement based on the data presented in Table 1
Figure 1. Tax burden at a county level in Romania (2010)

The following are the results obtained using data collected on the implementation of local budgets in our country, both at county and regional level. Thus, calculations and figures are made for the overall local tax burden, measured as the ratio of tax revenues in the local budget execution for each county/region in the GDP realized at the county level or region level, respectively. The most recent data were collected in 2010, 2011 and 2012, and are expressed as a unit of measurement in million lei.

To illustrate the geographical distribution of the tax burden at the county level, the tax burden was analyzed in 2010 and 2011. Results of the analysis are highlighted graphically in the maps of Romania (Figure 1 for the year 2010 and Figure 2 for 2011). In the two maps of Romania, we presented data on the total tax burden, which is determined as a percentage in

the county GDP of total tax revenue presented in the local budgets. The calculations were done for each of the years included in the study.



* *Note:* translation of Legend – Local fiscal pressure (from top to bottom): very high; high; medium; low; very low

Source: own achievement based on the data presented in Table 1

Figure 2. Tax burden at a county level in Romania (2011)

For 2010 (Figure 1) Romanian counties were divided into five categories and colored accordingly on the map, based on the county overall tax burden for 2010. Thus, the first category, with counties with very low tax burden contained in range between 5% and 6.5%, was marked on the map with a light blue color and includes 4 counties (Cluj, Timis, Prahova and Arges) together with Bucharest. The second category, that of counties with low tax burden situated in the interval (6.5%, 8%), includes 13 counties, mostly in Transylvania (Brasov, Sibiu, Alba, Arad, Bihor), but also counties in other areas the country whose capital cities are among the largest cities in Romania (Dolj, Iasi, Constanta).

Range three (8%, 9.5%) includes 13 counties with average tax burden (among them we find the counties of Bacau, Tulcea, Covasna, Harghita, Satu Mare). The fourth category, that of counties with high tax burden situated in the interval (9.5%, 11%), includes both areas of northeast (Suceava, Botosani, Neamt) and the southwest of the country (Teleorman, Olt, Mehedinti). The last category, with the fiscal pressure values situated in the range (11%, 14%), includes only three counties (Vaslui, Vrancea, Giurgiu).

If we use the information in Figure 1 to place Romania's counties in order of decreasing tax pressure, the county of Vaslui would be in first place with a tax burden of 13.65% at a distance of 1 percentage point form the second county in line, Giurgiu with a tax burden of 12.63% in 2010. Bucharest would be ranked in last place, with a tax burden of 5.07% in 2010.

Table 1. Tax burden at a county level in Romania (2010, 2011 and 2012)

County	Year			County	Year		
	2010	2011	2012		2010	2011	2012
Bihor	7.92%	8.02%	7.40%	Galați	8.31%	8.85%	6.97%
Bistrița-Năsăud	7.99%	8.16%	10.10%	Tulcea	9.46%	11.48%	7.13%
Cluj	6.29%	6.28%	5.39%	Vrancea	11.58%	10.27%	8.45%
Maramureș	8.87%	8.73%	7.89%	Argeș	6.37%	5.84%	5.74%
Satu Mare	9.19%	8.63%	8.27%	Călărași	9.35%	9.65%	7.13%
Sălaj	10.13%	9.01%	9.26%	Dâmbovița	7.51%	8.02%	6.47%
Alba	7.20%	7.45%	6.47%	Giurgiu	12.63%	8.93%	7.27%
Brașov	6.81%	6.74%	5.47%	Ialomița	8.99%	8.56%	5.80%
Covasna	8.61%	8.62%	7.65%	Prahova	6.32%	6.48%	5.53%
Harghita	9.03%	8.95%	7.73%	Teleorman	10.16%	8.69%	7.69%
Mureș	9.14%	8.39%	7.66%	Ilfov	5.98%	6.02%	6.15%
Sibiu	6.92%	7.04%	6.05%	București	5.07%	5.71%	3.95%
Bacău	8.56%	7.91%	7.75%	Dolj	7.69%	7.82%	6.58%
Botoșani	10.72%	10.75%	10.81%	Gorj	7.77%	7.00%	5.16%
Iași	7.92%	8.13%	6.63%	Mehedinți	10.22%	10.27%	10.68%
Neamț	9.87%	9.79%	9.11%	Olt	10.27%	10.44%	8.52%
Suceava	10.32%	10.14%	10.18%	Vâlcea	8.91%	8.36%	7.81%
Vaslui	13.65%	12.98%	10.77%	Arad	7.03%	7.29%	6.56%
Brăila	7.95%	7.76%	7.43%	Caraș-Severin	7.80%	7.65%	7.76%
Buzău	9.04%	9.29%	7.17%	Hunedoara	8.14%	8.59%	8.11%
Constanța	6.62%	6.40%	5.61%	Timiș	5.60%	5.59%	5.03%

Source: own calculus based on data taken from www.insse.ro

As a result of the analysis carried out for 2011 (Figure 2), Romanian counties were divided into the same five categories and colored using the same map colors for each interval as in the analysis for 2010 described previously.

What is noteworthy is the transfer of the county of Constanta from the second range to the first interval, which means a reduction in the tax burden for taxpayers in the area. Bihor and Dambovita transferred from the second interval to the upper range, so there has been an increase in the tax burden for those areas. In 2011, the third category, which is that of counties with average values of the tax burden, comprises of the largest number of Romanian counties (17 counties). The county of Vrancea transferred from the range of counties with very high fiscal pressure to the range of those with high taxation, thus a decrease was registered in the tax burden in this area in 2011 compared to 2010.

In a highest-to-lowest ranking of counties according to the local tax burden, in 2011, the county of Vaslui would still rank first. However, the tax burden in this area decreased by 0.67 percentage points in 2011 over the previous year. Last place, with the lowest tax burden, would be occupied by the county of Timis (5.59%). Bucharest occupies the second

to last place in the ranking, with a tax burden of 5.71%. This percentage is higher than that of the previous year by 0.64 percentage points.

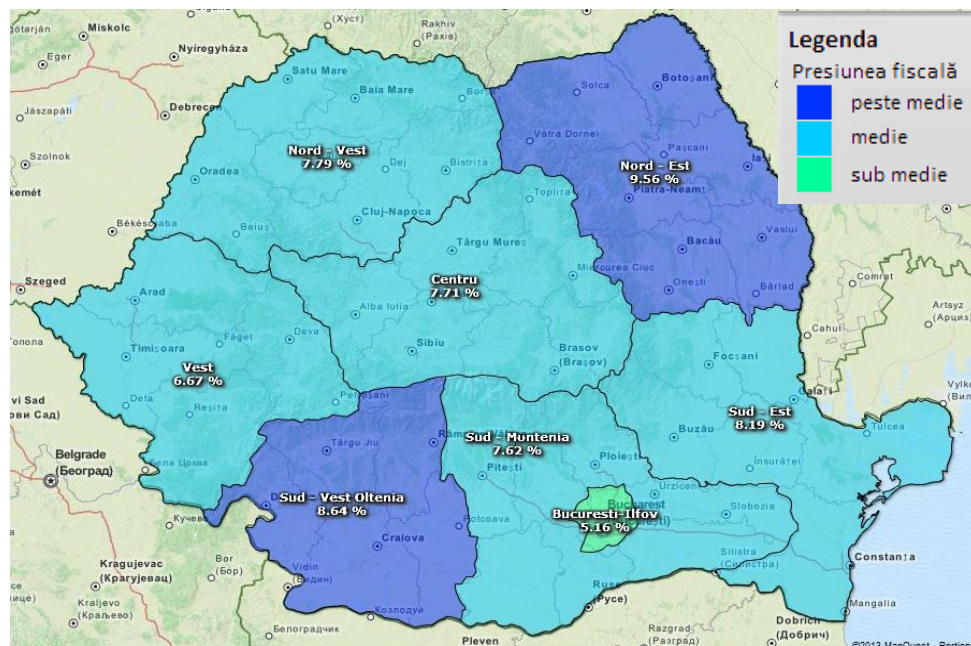
Regarding the evolution of the county level tax burden in 2012 as it can be seen from Table 1, the highest tax burden (10.81%) was found in the county of Botosani. In the next position in a highest-to-lowest ranking, is the county of Vaslui. With a tax burden of 10.77%, the tax burden in this county the value exceeds recorded in the previous year by 0.5 percentage points. Another change worth noting for 2012 from 2011 is that the lowest level of tax burden was record again in Bucharest (3.95%), with the county of Timis on the second to last place in the ranking. Thus, they are among the counties with the lowest tax burden in 2012, the same as in the previous years.

All in all, we may conclude that the highest fiscal pressure at a county level falls on the shoulders of the inhabitants of some of the poorest counties in Romania (Vaslui, Tulcea, Vrancea). Given the fact that the living standard here is much lower than in other regions of the country, it is not surprising that these counties have the highest levels of tax burden. A few of these areas have even been declared disadvantaged areas by the government. At the opposite end of the spectrum, the counties with the lowest fiscal pressure are also the areas with the highest living standard in Romania (Bucharest, Timis, Cluj, Prahova). People in these counties have higher incomes and, therefore, it is to be expected that they bear the taxes much easier. Again, we would like to underline that our study is based on the way taxes are perceived by the taxpayers at a local and regional level.

5. FISCAL PRESSURE EXPERIENCED AT THE REGIONAL LEVEL

The geographical distribution of the tax burden at the level of development regions was analyzed for the years 2010, 2011 and 2012 in order to gain a whole perspective on taxation levels experienced locally in Romania. The results of the analysis are highlighted graphically in two maps of Romania (Figure 3 for 2010 and Figure 4 for 2011). The two maps of Romania present data on the overall tax burden, which is determined as a percentage of total tax revenue in the local budgets in the GDP achieved at the level of each region.

According to the 2010 results, the development regions of Romania were divided into three categories and colored accordingly on the map, depending on the amount of the overall regional tax burden for each year. The first category, which consists of the regions with below average fiscal pressure situated in the range (5%, 6.5%), was marked on the map with a light green color, and it includes a single development region (Bucharest-Ilfov). The second category, which consists of the development regions with average tax burden situated in the interval (6.5%, 8.5%), includes 5 regions (Nord-Vest, Vest, Centru, Sud-Muntenia and Sud-Est). Range three (8.5%, 10%) includes development regions with above-average tax burden (Nord-Est and Sud-Vest Oltenia). If we use the information in Figure 3 to place Romania's development regions in a highest-to-lowest ranking of the tax burden, the Nord-Est region would be in first place with a tax burden of 9.56% in 2010 and a difference of 0.92 percentage points to the second place region, Sud-Vest Oltenia (8.64% of regional GDP). The Bucharest-Ilfov development region would be ranked last, with the lowest tax burden (5.16 % in 2010).



* *Note:* translation of Legend – Fiscal pressure (from top to bottom): above average; average; below average

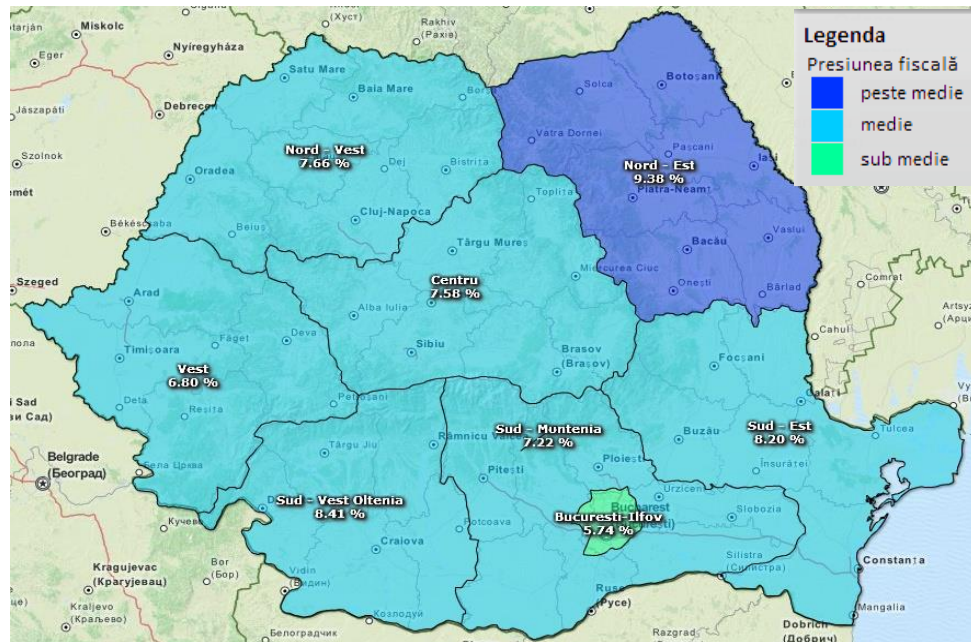
Source: own achievement based on the data presented in Table 2

Figure 3. Tax burden at a regional level in Romania (2010)

Analyzing the tax burden measured as the percentage of overall tax revenue in the regional GDP realized in each development region in 2011 (Figure 4), the development regions of Romania were divided into the same three categories and marked on the map using the same colors for each range as in the case described previously for 2010.

The Sud-Vest Oltenia region transferred in 2011 from the third interval, which consists of the regions with above average fiscal pressure, to the second category, with counties with average values of the tax burden. However, it is noteworthy that the decrease in the tax burden of the said region was only 0.23 percentage points (from 8.64% in 2010 to 8.41% in 2011). In terms of tax burden, the Sud-Vest Oltenia region was near the lower limit of the range in which it was framed (8.5%, 10%) in 2010, so there is no significant change.

In a highest-to-lowest ranking of development regions according to fiscal pressure recorded locally in 2011, the Nord-Est region would take first place just as in the previous year. Fiscal pressure in that area decreased by 0.18 percentage points in 2011 over the previous year, however, we cannot say that the change is significant one. With the lowest regional tax burden (5.74%), the Bucharest-Ilfov region ranks last in 2011 as well, although there was an increase of 0.58 percentage points in the fiscal pressure registered for the region from the previous year.



* *Note:* translation of Legend – Fiscal pressure (from top to bottom): above average; average; below average

Source: own achievement based on the data presented in Table 2

Figure 4. Tax burden at a regional level in Romania (2011)

In 2012, the lowest level of fiscal pressure was recorded throughout the Bucharest-Ilfov region (4.16%), according to the data presented in Table 2. The tax burden level in the region has decreased by approximately 1.5 percentage points in 2012 compared to 2011. The highest tax burden in 2012 was recorded throughout the Nord-Vest region, although the calculated value for the region also decreased in 2012 (9.38%) from that registered in 2011 (8.63%).

Table 2. Tax pressure at a regional level in Romania (2010, 2011 and 2012)

Development Region	Year		
	2010	2011	2012
Nord - Vest	7.79%	7.66%	7.22%
Centru	7.71%	7.58%	6.52%
Nord - Est	9.56%	9.38%	8.63%
Sud - Est	8.19%	8.20%	6.70%
Sud - Muntenia	7.62%	7.22%	6.18%
București - Ilfov	5.16%	5.74%	4.16%
Sud - Vest Oltenia	8.64%	8.41%	7.21%
Vest	6.67%	6.80%	6.23%

Source: own calculus based on data taken from www.insse.ro

Although the hierarchy of development regions in terms of the regional overall tax burden remained similar from one year to another, it must be stressed that a downward trend for the registered values can be clearly noted from 2010 until 2012. The greatest reduction in the level fiscal pressure was felt in the Bucharest-Ilfov region and the lowest decrease occurred in the Nord-Vest (0.44 percentage points) and Vest (0.57 percentage points) regions respectively.

6. CONCLUDING REMARKS

The analysis of the tax burden at the household level shows that for 2008-2011 fiscal pressure felt by households where the members are employees was almost double that experienced by households where the members are retired or unemployed. As for the number of people in the household, for 2011, households with 3, 4 and 5 members have experienced the highest level of tax burden. The lowest level of fiscal pressure was felt by households with just one member.

The statistical study based on data regarding the fiscal pressure at county and regional level for the years 2010, 2011 and 2012, revealed the fact that there were no major differences between the results for the three years. The development region with the highest level of tax burden was the Nord-Est region, with a level of fiscal pressure over 8.5% for all the three analyzed years. The development region with the lowest level of the tax burden was the Bucharest-Ilfov in the three years analyzed (with a fiscal pressure of below 6% in all cases).

In terms of the tax burden experienced on county level, the results remained similar in 2011 compared to 2010. The county of Vaslui recorded the highest level of fiscal pressure in both years. In 2010, the lowest tax burden was recorded in Bucharest, followed by the county of Timis. In 2011, the two municipalities have switched places in the ranking of the counties with the lowest tax burden. In 2012, the highest tax burden was recorded in the county of Botosani, followed in the national hierarchy by the county of Vaslui. In 2012, the lowest tax burden was recorded in Bucharest, followed by the county of Timis. However, the value of the tax burden registered in 2012 in Bucharest was more than 1 percentage point lower than that registered in the county of Timis.

The current statistical study is a useful tool for revealing the manner in which the tax burden in Romania is experienced at the household level as well as at the county and regional levels. The results presented highlight the evolution of the tax burden from one year to another, in the context of fiscal measures taken to counteract the effects of the global financial crisis in Romania. Our results can be a useful tool for the local authorities as well as the central government in establishing tax policies.

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