



ASSESSING CHANGES IN LAND RENT COSTS AND THEIR IMPACT ON THE FINANCIAL PERFORMANCES OF AGRICULTURAL HOLDINGS IN BULGARIA

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ABSTRACT

The report analyses change in the cost of land rent on farms. It analyses the impact of rent expenditure on farm financial performance by farm type and regionally. It is argued that rising rent costs have a negative impact on the financial performance of farms and put pressure on their efficiency. This is more pronounced in areas specializing in intensive crop production, where larger agricultural areas are rented. The external factor costs exceed the farming overheads. There is a need for farmers to adopt a more pragmatic policy when renting agricultural land.

Keywords: rent; rent costs; external factor costs; net income; financial performances; agriculture

INTRODUCTION

The agricultural sector has an important place in the country's economy and, although it accounts for a relatively small share of gross value added - around 5% in 2021 (1), it is strategically important for ensuring the country's food security (2). In the post-2000 period, there has been a restructuring of the sector, associated with a reduction in the number of farms to 132 thousand, an increase in the utilised agricultural area to 33 ha/farm, an increase in the size of farms (3), an orientation towards crop production, mainly cultivation of intensive crops, etc. The period after our country's accession to the EU has been characterized by an increase in production, an increase in gross investments in the sector, growth in exports of agricultural produce and food. There is a positive relationship between gross output and intermediate consumption, cost of living and factor costs. With the country's accession to the EU, agricultural costs are increasing, mainly as a result of rising input prices. At the same time, increased investment activity to meet the needs of production restructuring increases input costs (mostly in land and machinery), which increases the demand for agricultural inputs.

Factor productivity of agriculture is increasing, and according to Ivanov et al. (2), the largest contributors to this increase are oilseeds and grains, essential and medicinal crops, some fruits, and vineyards. Changes in the demand for factors of production has different dynamics, explained by the desire of farms to increase their productivity and competitiveness. Land is the main resource for agricultural production needs from which agricultural output is obtained as a result of labour and material inputs. The interrelation of land with other factors of production in agricultural production has a technological and territorial aspect (4). Through effective management of land resources, favourable conditions are created not only for the development of agricultural enterprises, but also for other entities in the system that the agricultural sector represents. The efficient use of land as a basic and indispensable factor of production in agriculture is associated with complex social relations (5, 6). The in-depth study of the state of agricultural land, as well as of the complex relations related to its use, has an important place in achieving balance and sustainability in the Bulgarian literature has focused more on land prices, rents and land use and their impact on investment in agricultural land. Trends in the development of land rent prices in Bulgaria and the factors that determine its value have been thoroughly studied by Stanimirova (8) and

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Mihailova (9). The need for the average growth rate of rents not to exceed the average growth rate of the price of agricultural land in order not to create discrepancies between rents and prices and land is proved. The stabilisation of the growth rate of land rent and land price in Bulgaria is highly dependent on legal norms (9), direct payments under the CAP (10), economic cycles (8), access to credit (11), and the tax system (12). In the context of the discussions, the aim of this paper is to assess the changes in the rent expenditure in Bulgarian farms and their impact on their financial performance in the period after Bulgaria's accession to the European Union. It is argued that the increase in rent costs worsens the financial performance of farms and they become increasingly dependent on financial support in the form of subsidies. An attempt is made to assess the relationship between rent expenditure and net farm income by specialisation and in territorial terms. In comparison with the EU average farm values, the specificities of the processes in Bulgaria are traced in relation to the EU agricultural sector. The changes in rent expenditure and their impact on net income in farms. In order to meet the objective of the study, the following methodological tasks are carried out:

- ✓ examines changes in the composition of rent expenditures in factor costs and in total farm costs;
- ✓ examines the relationship between net income and rent expenditure - overall for farms and in comparison, with EU averages;
- ✓ examines changes in the composition of rent expenditure and its impact on net income on farms by specialisation;
- ✓ examines changes in the composition of rent expenditure and its impact on net income by region.

MATERIALS AND METHODS

The methodology of the study involves determining the place of farm rent expenditure in the formation of net income. The analysis is carried out using data from the Farm Accountancy Data Network (FADN), for the period after the country's accession to the EU in 2007 to 2021. For the purpose of economic analysis, comparative analysis methods, dynamics analysis, structural variables analysis, factor analysis and dependency analysis are used.

The data on rent formation are analysed to examine the factors that determine them, and to reflect their impact on the formation of net farm

income. The analysis carried out by farm specialisation and in territorial terms by statistical planning area makes it possible to highlight disparities in the use of production factors by farm type and by territory. The methodological framework of the study is limited to the average farm in the country. Comparing the results obtained with those for the EU average farm allows to trace the peculiarities of Bulgarian farms in the process of their restructuring and in their integration into the EU agriculture.

Changes in the composition, structure and dynamics of rent expenditure and its relationship to net farm income are the object of analysis. An analysis by farm specialisation will allow the impact of rent expenditure on net farm income to be assessed. The analysis by area will make it possible to assess the impact of rent expenditure on net farm income by planning area. According to FADN, the evaluation on the indicators follows the trend of decreasing the number of monitored farms from 146,7 thousand in 2007 to 57,4 thousand in 2021, with an increasing average size.

RESULTS

The composition of total farm inputs consists of intermediate consumption (including total specific cost and total farming overhead, excluding labour costs), depreciation and total external factor costs. During the analyzed period 2007-2021, in the agricultural holdings of Bulgaria, total inputs of the holdings increased, but with different rates of change. The total inputs of the holdings increased 5,8 times from €15 275 (2007) to €91 448 (2021). Intermediate consumption in farms grows 4,6 times – from €10 579 (2007) to €49 289 (2021). Total specific costs are increasing at similar rates – from €7 071 (2007) to €32 542 (2021) and total farming overheads – from €3 508 (2007) to €16 747 (2021). Depreciation increased 7,5 times as a result of the restructuring of the sector and increased investment activity – from €1 479 (2007) to €11 116 (2021). The highest growth rate – 9,6 times, is observed in the total external factor cost – from €3 215 (2007) to €31 042 (2021), with rent paid growing faster – 17,4 times.

The faster growth of rent costs relative to the external factor cost, labour and capital, can be explained by the intensive development of land relations and the land market (8, 9). In the agricultural holdings of the European Union,

total inputs increased only 2 times - from €48 103 (2007) to €99 053 (2021), and intermediate consumption increased from €32 431 (2007) to €63 329 (2021). Total specific costs are increasing at a faster rate – from €7 460 (2007) to €41 500 (2021) and total farming overheads – from €4 169 (2007) to €23 828 (2021). Depreciation expenses increase from €7 210

(2007) to €11 490 (2021). Total external factor costs are growing at a slower pace – from €8 463 (2007) to €16 234 (2021) and rent costs – from €2 274 (2007) to €5 004 (2021). Changes in the composition of total costs, production factor costs and rent costs in Bulgaria and on average for EU farms for the period 2007-2021 are presented in **Table 1**.

Table 1. Total inputs, total external factor costs, rent costs and structure of rent costs in total inputs and total external factor costs

Year	(BG)					(EU)				
	(SE270) Total Inputs (€)	(SE365) Total external factors (€)	(SE375) Rent paid (€)	Rent paid / Total Inputs (%)	Rent paid / Total external factors (%)	(SE270) Total Inputs (€)	(SE365) Total external factors (€)	(SE375) Rent paid (€)	Rent paid / Total Inputs (%)	Rent paid / Total external factors (%)
2007	15 274	3 215	1 030	6,7%	32,0%	48 103	8 463	2 274	4,7%	26,9%
2008	20 075	4 840	1 515	7,5%	31,3%	51 379	8 932	2 330	4,5%	26,1%
2009	27 143	6 568	2 160	8,0%	32,9%	53 030	9 540	2 578	4,9%	27,0%
2010	31 040	7 947	3 120	10,1%	39,3%	55 030	9 613	2 696	4,9%	28,0%
2011	33 876	9 304	4 185	12,4%	45,0%	59 151	9 917	2 808	4,7%	28,3%
2012	39 328	10 793	5 458	13,9%	50,6%	61 713	10 129	3 010	4,9%	29,7%
2013	41 098	11 430	5 894	14,3%	51,6%	62 666	10 148	3 075	4,9%	30,3%
2014	45 280	13 544	7 948	17,6%	58,7%	64 362	10 769	3 384	5,3%	31,4%
2015	49 700	14 602	7 888	15,9%	54,0%	65 849	11 265	3 540	5,4%	31,4%
2016	48 468	14 441	7 952	16,4%	55,1%	65 266	11 330	3 613	5,5%	31,9%
2017	73 242	22 961	12 888	17,6%	56,1%	66 688	11 625	3 738	5,6%	32,2%
2018	73 573	23 675	13 360	18,2%	56,4%	79 189	13 830	4 407	5,6%	31,9%
2019	76 789	25 182	14 085	18,3%	55,9%	81 727	14 406	4 484	5,5%	31,1%
2020	75 981	24 555	13 475	17,7%	54,9%	82 711	14 510	4 524	5,5%	31,2%
2021	91 448	31 042	17 888	19,6%	57,6%	93 053	16 234	5 004	5,4%	30,8%

Source: FADN

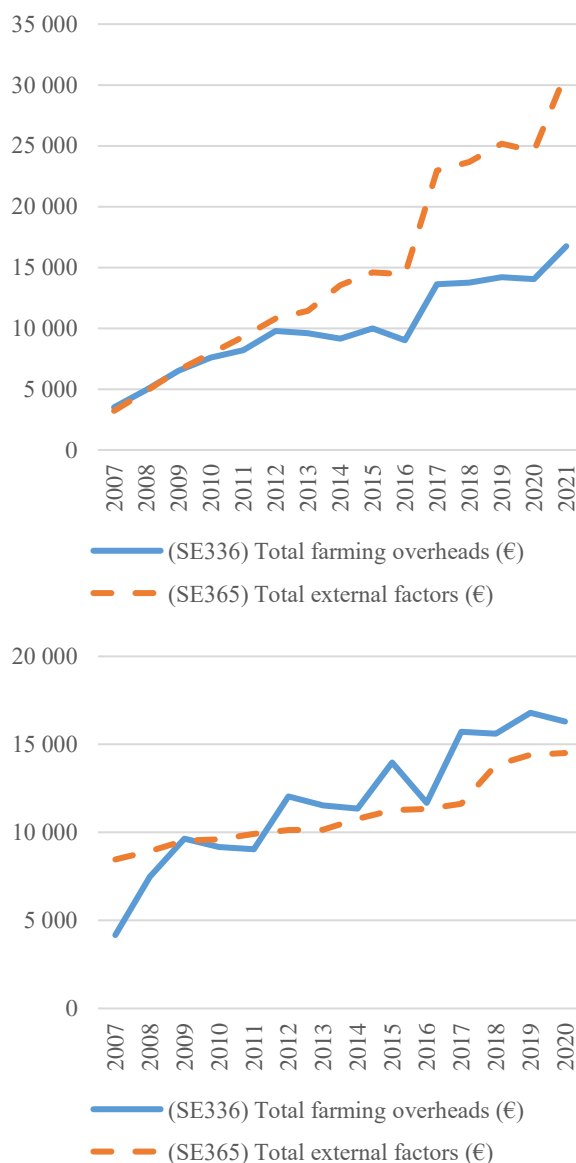
The table shows that there is a significant divergence in the expenditure structure between

Bulgaria and the EU. Rent costs in the EU accounts for only 4,5-5,5% of total inputs and 26,1-32,2% of total external factor costs. On Bulgarian farms, rent costs in total inputs increases from 6,7% (2007) to 19,6% (2021), and in total external factor costs from 32% (2007) to 57,6% (2021). The increased rent paid incurred by Bulgarian farms puts serious pressure on their net income, which becomes increasingly dependent on subsidies.

In addition to the cost analysis, the relationship between the total farming overheads and the total external factor cost can be traced. If at the beginning of the period analysed the total farming overheads exceeded total external factor costs, in 2021 factor costs will outstrip subsistence costs by 85,4 % (mainly on account of rent costs), to the extent that in the EU average farming overtakes factor costs. After 2013, with the introduction of direct income support payments, the growth rate of total external factor costs outpaced the growth rate of total farming overheads, while in EU farms the trend was reversed.

The dynamics of total farming overheads and total external factor costs for the period 2007-

2021 on farms in Bulgaria and the EU can be traced in **Figure 1**.

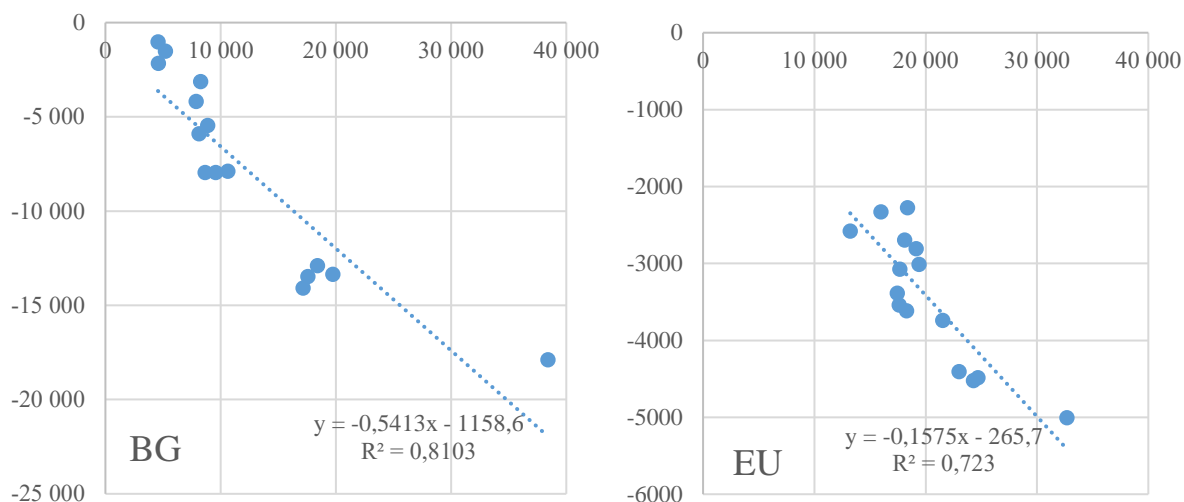


Source: FADN

Figure 1. Dynamics of total farming overheads and total external factor costs in Bulgaria (left) and for farms in the EU (right), 2007-2021.

Net farm income is an integrated indicator of the financial performance of farms, which is formed by subtracting total external factor costs from gross value added and adding the balance of subsidies and taxes. The net income of agricultural holdings in Bulgaria increased from €4 563 (2007) to €17 552 (2020) and €38 390 (2021). The favourable year 2021 for farmers ensured a significant increase in net income and for the first time since 2013 it is not dependent on subsidies. Over the same period, in EU farms

net income increased from €18 362 (2007) to €24 310 (2020) and €32 685 (2021). But the rising cost of rents is putting serious pressure on net income formation. The study of the correlation between rent expenditure as a component of net income shows a stronger correlation for Bulgarian farms compared to the EU average (**Figure 2**). This makes it necessary for Bulgarian farms to be more pragmatic in planning their input rent relationships, especially for the rent of agricultural land.

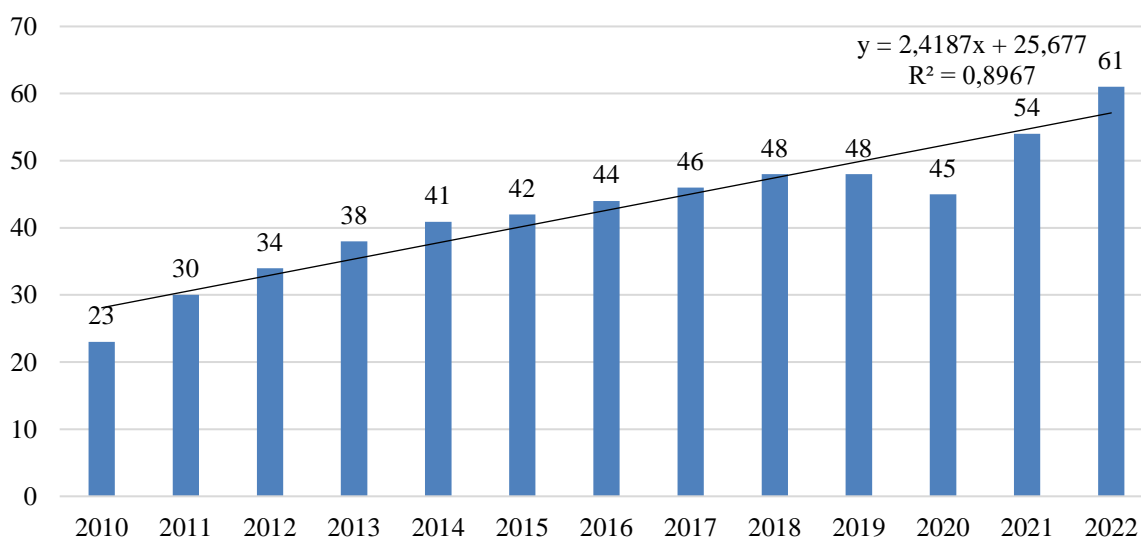


Source: FADN

Figure 2. Statistical relationship between net income and rent paid from farms in Bulgaria (left) and the EU (right), 2007-2021, euro per farm

In the period since 2007 there has been a continuous upward trend in the level of rents paid for renting land in Bulgaria. Data from the National Statistical Institute of Bulgaria for the period 2010-2022 show an average annual growth rate of 8,9% in rent payments (**Figure 3**), with significant fluctuations across different regions of the country. Sensitive changes are observed in the structure of rent expenditures

for renting agricultural land. Although the average rent in the country grew about 2.65 times over the period analysed, in typical grain-growing areas of the country rents grew 4-5 times. The increased demand for agricultural land has put pressure on the level of rent payments (8-10), which has had a proportionate impact on the level of rent expenditure.



Source: National Statistical Institute, Bulgaria

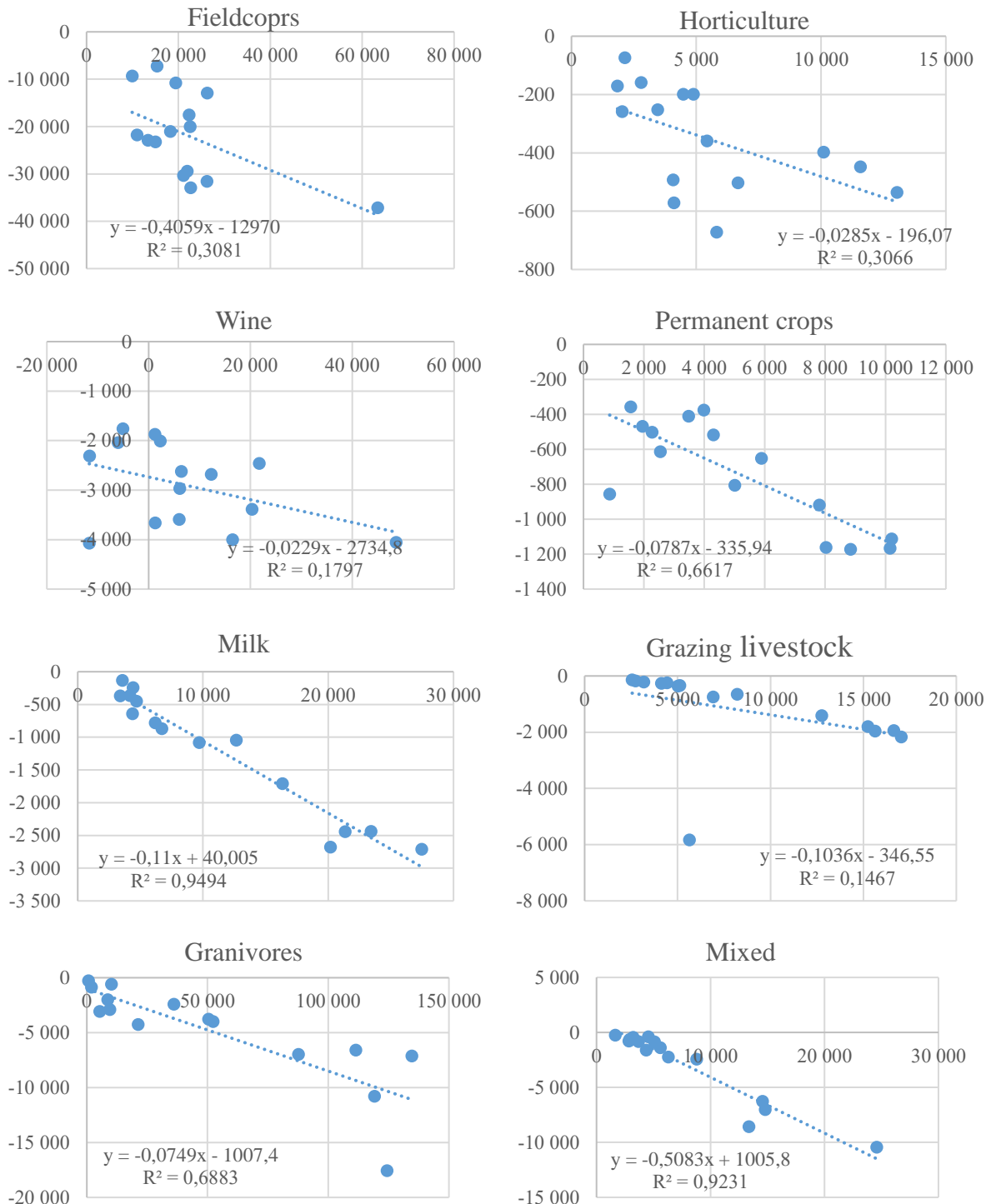
Figure 3. Dynamics of rent payments, 2010-2022, in BGN/dka.

By 2021, the cost of rent on Bulgarian farms exceeds by 3,57 times the cost of rent on the average European farm. This puts serious pressure on the net income of Bulgarian farms, which is why a significant part of the CAP support funds is directed towards covering the costs of rent payments instead of income

support. The elasticity of net income with respect to the level of rent expenditure measured over the period 2007-2021 shows that a 1% change in rent expenditure leads to a -2,21% reduction in net income on Bulgarian farms and a -1,54% reduction in net income on European farms.

In an attempt to further assess the impact of rent expenditures on farms in Bulgaria by specialization, it is noticeable that in the agricultural sectors, the dependence of net income on rent expenditures is different (**Figure 4**). In most sectors there is a significant correlation in the net income - rent expenditure relationship. The relationship is strongest in

sectors “milk”, “mixed” farming, “granivores” livestock, permanent crops, cereals and horticulture sectors. There is moderate dependence in the “Wine” and “grazing” livestock sectors. The sectors that consume more rented land have net income that is more sensitive to changes in rent costs.

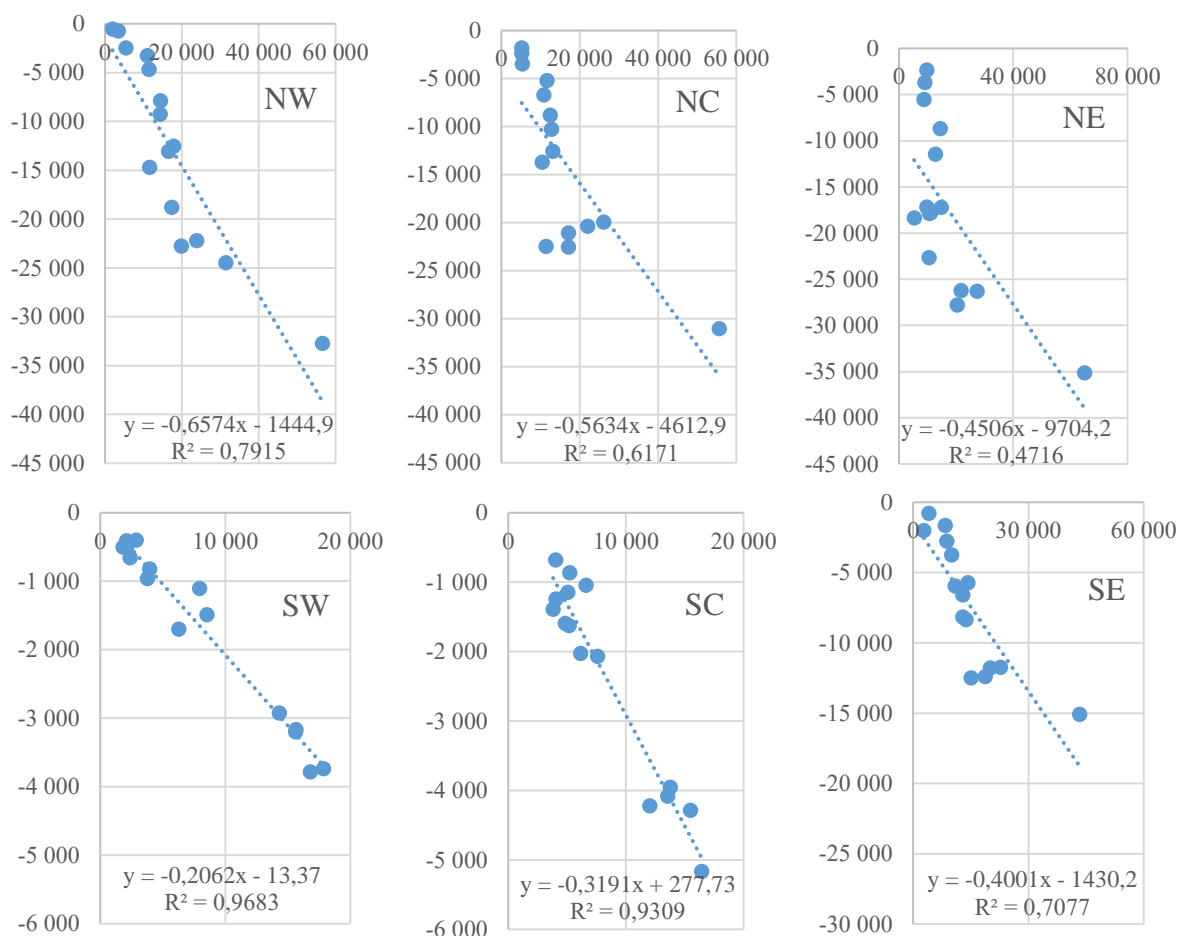


Source: FADN

Figure 4. Relationship between net income and rent costs on farms, by specialization, for the period 2007-2021, euro per farm

The study of rent expenditures on a regional basis shows significant disparities in the development of the different statistical planning areas. In the intensive crop production areas - the three northern regions and the South-Eastern planning region - there has been a significant increase in farm rent expenditure between 2007 and 2021. The highest growth in total rent expenditure was in the North-West Region (60,4 times), followed by the South-East Region (19,4 times), the North-Central Region (17,1 times) and the North-East Region (15,0

times). The other two regions, the South-West (9,5 times) and the South-Central region (4,9 times), which mainly grow fewer intensive crops such as vegetables and fruit and have a higher share of livestock farming, have seen relatively the lowest growth in factor costs. In an attempt to uncover the impact of rent on income, more in-depth estimates are made and presented in **Figure 5**. It is evident from the data in **Figure 5** that farms in areas where intensive cropping predominates, their net income is much more sensitive to cost of rent.



Source: FADN

Figure 5. Relationship between net farm income and farm rent costs, by region, 2007-2021, euro per farm

CONCLUSIONS

The analysis of rent costs at national and regional level and in comparison, with EU farm averages 1) The cost composition of the sector in Bulgaria is growing more than 5 times, with rent costs growing at a faster rate - more than 17 times, while EU farms are growing at a more even pace. This leads to an increase in the cost intensity of Bulgarian farms, which reduces their net income.

2) The formation of net income on Bulgarian farms by 2020 is highly dependent on the level

of subsidies and public support. This calls for a rethinking of expenditure policies in the direction of expanding investments in resource-saving technologies and containing the rate of change of input costs, in particular rent costs. Farms need to become increasingly pragmatic in planning expenditure, especially for renting farmland.

3) The external factor costs are growing at a faster rate than the farming overheads, and their share in farm net value added remains too high.

This is particularly characteristic of farms growing intensive cereals and oilseeds.

4) There are serious disparities in the composition of rent expenditure by farm specialisation, with intensive sectors being characterised by a very close relationship between net income and rent costs.

5) There are serious disparities in the composition of rent expenditure regionally. The highest rates of change are observed in the North West planning area, which is defined as the most developed in terms of agricultural production.

6) Some elements of the sector's income support policy need to be reconsidered to ensure that growth in input costs, in particular rent costs, are not encouraged.

The research methodology can be applied in future studies for further in-depth analyses regionally, by farm type, by farm size and by production specialization.

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