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ASSESSMENTS OF FARM CAPITALIZATION WITH PRODUCTION MEANS – FIELD SURVEY ANALYSIS

ABSTRACT

Capitalization is a determinant of farm economic viability, with sustainable contribution to increasing the competitiveness of the agricultural sector. A computation and analysis model has been built for evaluating the endowment of Romanian agricultural holdings with production means, estimating the total net investment value by types of agricultural machinery and farm equipment. The clustering method was applied on appropriate statistical indicators of the sample farms according to the considered selection criteria, providing the basis for analysis. The article presents the results provided by farm sample analysis, showing regional profile assessments obtained at farm level and by legal status of holdings.

Key words: agricultural holdings, productive capital, investment, sustainable development.

JEL Classification: Q12, O3, O15, Q01.

1. INTRODUCTION

Within the context of external imbalances and performance deficiencies of the agricultural sector, having as a source a number of causes at the microeconomic level [Otiman, 2009], the paper addresses the study of factors generating non-performance in Romania's agricultural economy, by investigating the technical capitalization of holdings.

As a promoter, or restrictive determinant of competitiveness, the development of quantitative and qualitative structural productive capital stock largely depends on the ability to properly manage and use soil resources and, therefore, the farm sustainability and economic development.

The paper presents the results obtained from applying a calculation model for evaluating the capitalization of farms with productive capital goods, based on the information provided by the field survey.

2. MATERIAL AND METHOD

The research used as information material the database obtained by processing the questionnaires applied in selected localities from all statistical regions of

Romania, in the period 2007–2008[1]. A computation model was used designed to assess the updated cost of mechanical means from sample, to estimate the replacement value of machinery, obtained by calculating the machinery depreciation cost and its present value represented by the net investment value. To obtain comparable values, intermediate operations were required to update the machinery prices: nominal purchase prices were recalculated by deflation values by using the Consumer Price Index for industrial goods, provided by the National Institute of Statistics, in 2009 as the reference period. Initial values were expressed in Euros, at the annual exchange rate provided by the National Bank of Romania, in the acquisition period and then adjusted to the current exchange rate. The statistical group method was applied to the indicators corresponding to the investigated holdings according to the considered selection criteria: regional, farm level and by legal status of holding [Rusali, 2010].

3. RESULTS AND DISCUSSIONS

The evaluation results for the agricultural tractors, by regions, at the level of investigated farms and by the legal status of holdings, i.e. natural person, or individual farm and legal entity, or commercial farm, in the investigated farm sample, are shown in Figure 1.

The heading *Thou. RON/holding* represents the mean amount of net investment per farm. Detailed results include regional distribution of farm tractors in the sample by value, by type and class power and of trailers, trucks and land cars – net investment and depreciation costs. Disparities are noticed between holdings by net investment and by the number of tractors in farm equipment, and uneven distribution relative to the amount of investment at regional level. The individual farms have much lower capitalization with tractors than the legal entities, the average sample is estimated at 7618 RON on individual farm, compared to 68639 RON per legal entity farm. The sample average net investment in agricultural tractors was estimated at 30163 RON per farm.

The evaluation results from tillage and seeding machinery, at regional, farm level and by legal status of farm are shown in Figure 2.

The estimated average value of the machinery amounted to 2098 RON per holding with natural person status, and 26104 RON per legal holding. A sample average value of 11041 RON per farm was estimated. The detailed results include the regional distribution of farms in the sample by value of tillage and planting machinery, by type – net investments and depreciation costs and the appropriate assessments corresponding to the legal status of farms. Figure 2 shows extremely

[1] Projects funded by the Ministry of Education and Research in 2005–2008: CEEX-56 "Modeling farm economic response to the integration of the environmental principles with the sustainable management of soil resources" and CNCSIS-19 "Complex models and research methods of sustainable rural development in Romania".

low values estimated for the tillage and seeding machinery, which indicates a major weakness of these types of basic machinery working in the aggregate with tractors, as major shortcomings for the crop sector.

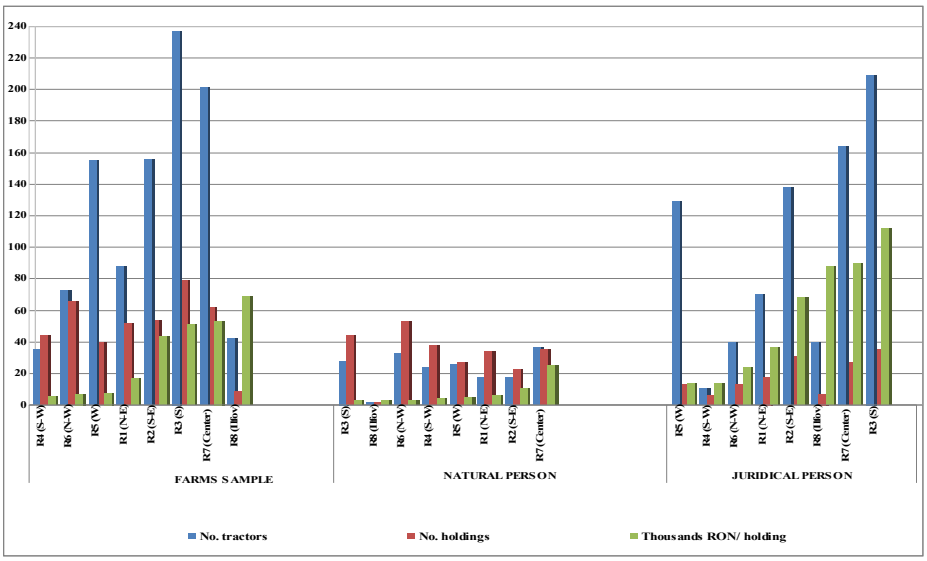

Figure 1. Distribution of farms from sample, by agricultural tractors value, by regions and legal status.

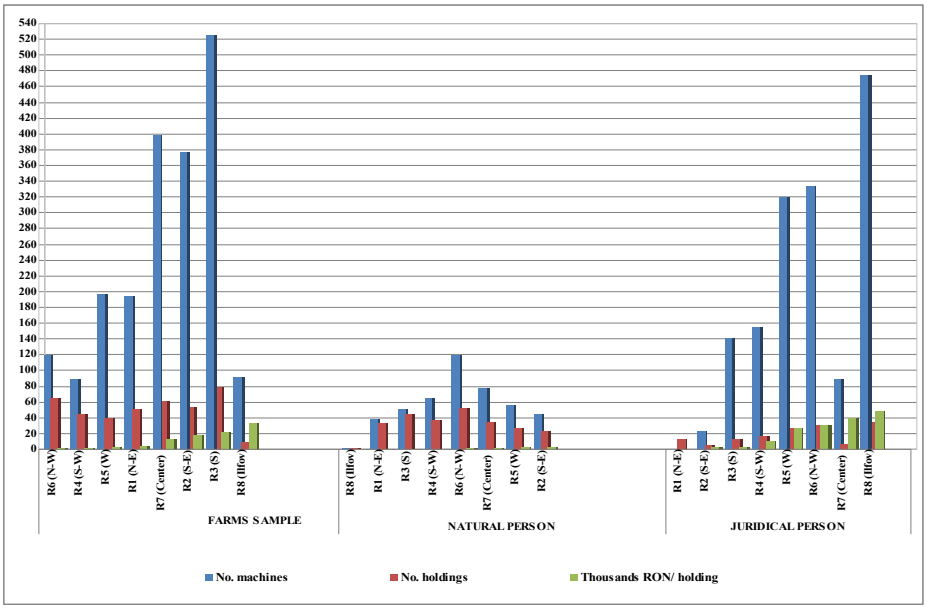

Figure 2. Distribution of farms from sample by value of tillage and seeding machinery, by regions and by legal status.

The fertilizing and chemical treatments application machinery has a similar regional distribution to the previous ones, but the amount of the average farm net investments is dramatically reduced.

The value of this machinery was estimated at 1165 RON on the average per holding as natural person and 4818 RON per legal entity holding, resulting in a sample average of 2514 RON per farm.

Figure 3 shows the results of the evaluations for combines and harvesters used on farms property, by regions, at the level of investigated farms and by the legal status of holding.

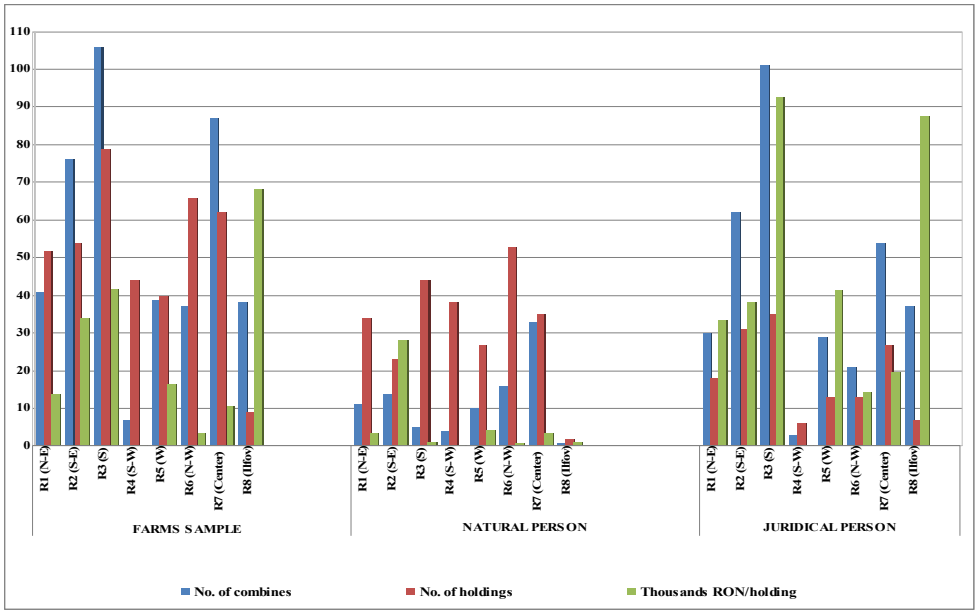

Figure 3. Distribution of farms from sample by value of combines and harvesters, by regions and legal status.

The average value of net investments on individual farms is clearly lower than that on commercial farms, due to the different average physical size: from 0.3 ha, in North-West, to 56ha, in South-East, on the individual holdings and from 66 ha, in South-West to 888 ha, in South, on commercial farms. It can be noticed that although there are imbalances between regions, the investments in combines and harvesters grow in importance both as level and as distribution level. The estimated average value of this machinery was 4414 RON per farm with natural person status and 45987 RON per legal entity farm, while the sample average was estimated at 19773 RON per farm.

In other categories of farm equipment, i.e. fixed and mobile irrigation facilities and milking equipment and devices, the overall assessment of net investments

amounted to 10476 RON on commercial farms, compared to 2515 RON on individual farms, while the average sample yields a value of 5457 RON per farm. Out of these, the irrigation facilities amounted 1679 to RON/farm, almost totally (99.7%) found on commercial holdings, while the milking facilities amounted to 3778 RON/farm, 66% distributed on commercial farms.

The average estimated value of investments in mechanical means, used in the property of farms in sample was 18722 Euros per farm (at the exchange rate of 3.6827 RON/EUR), 4836 Euros per individual farm and 42367 Euros per legal entity farm respectively.

With an endowment of Romanian farms almost three times lower, on the average, compared to EU-25 [EC, 2010], on which an average value of investments in agricultural machinery of 44300 Euros was estimated, the Romanian farms gap, dramatically deeper on small farms, is an indication of the shortcomings that burden on sector performance.

5. CONCLUSIONS

The results of the analysis demonstrate the need to modernize farms on the basis of massive investments in technical means, with a significant public component, including agricultural mechanization and irrigation systems. Productive capital, vital for agriculture, will favour restructuring through the development of farms and rural households, providing them the openness opportunity to agricultural, food and non-agricultural markets.

In the Romanian rural areas, the small farms have a threefold significance – socio-economic, environmental and cultural – which gives them a key role in the improvement of regional competitiveness and sustainability in conformity with the cross compliance principles and the social and historical specificities of the different areas. However, the study revealed large disparities in the existing technical endowment between individual and commercial farms, both at external and internal level, which represents a major constraint to obtaining profitable production that should enable re-investment conditions. The obtained estimates reveal internal gaps between farms and regions, as well as compared to EU investments in farm mechanization, which affects the external performance of Romanian farmers, indicating the technical capitalization among the non-performance factors in the rural economy.

In the conditions in which sustainable development means long-term non-negative sustainability, for the rural areas sustainability implies the need of an integrating vision of these socio-economic strength structures in order to benefit from support policies for rural areas, for agriculture included, and to attract investments for the modernization of activities and investment capacity building of farms with new production techniques.

REFERENCES

1. European Commission (EC), 2010, *Agriculture in European Union – Statistical and Economic Information*.
2. Otiman, P.I., 2009, *Rural Development and Agriculture: Opportunities to Attenuate the Economic and Financial Crisis and to Resume Economic Growth*, EADR, Volume 5, Issue 3–4, p. 97–128.
3. Rusali, Mirela, 2010, *Competitiveness and non-performance generating factors in agriculture: conceptual delimitations, analytical methods and evaluations on holdings productive capital*. Working paper, IAE, The fundamental program of the Romanian Academy: Eco-economy and Romania's sustainable development.