THE INFLUENCE OF AGRICULTURAL INVESTMENTS ON INCOME FROM ROMANIAN AGRICULTURE

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Abstract

The purpose of this paper is to determine the influence of agricultural investments on the Romanian agriculture incomes, realizing in the same time their evolution. In Romania, agriculture is a basic branch of the national economy because it provides food for the population as well as raw materials for the consumer goods industry. The research was carried out on the basis of statistical data published by the National Institute of Statistics of Romania, taking into account a period of 13 years, respectively 2005-2017. The connection between the value of investments in agriculture and the value of the incomes obtained from agriculture in Romania is a direct and high intensity.

Key words: agriculture, investments, income, Romania

INTRODUCTION

A high-performing economy is based on investment, as it helps to increase labor productivity, create new jobs and thus increase GDP in a country.

The investment is the economic factor that materializes in material, financial and labor resources, for the replacement of the used means of production, for the improvement of the already existing means of production or for the creation of new means of production, with the purpose of obtaining economically timed effects and which, in total, is higher than the initial expenditure. [12]

Investment leads to increasing and diversifying supply, creating new jobs and improving the quality of life, restoring ecological balance. So the goal of the investment is to earn income and profit, secure employment and tomorrow's safety.

The economic efficiency of the investments represents the relation between their economic outcomes and the investment effort [7]; but the gap between the moment of investment and the moment of obtaining the results has to be also taken into account.

Agriculture, tourism and manufacturing industry are sectors which contribute to a sustainable economic growth, so investments must to be attracted to these sectors, not to speculative sectors, like: real estate or retail. [10]

In Romania, agriculture is a basic branch of the national economy because it provides food for the population as well as raw materials for the consumer goods industry

The contribution of agriculture, forestry and fish farming to GDP in Romania is around 6% of GDP, while in the EU Member States it is around 1.7%. [9]

The level of life of a nation is in close dependence on food resources, quantitative and qualitative. [3]

Agriculture must ensure sufficient production for domestic consumption, and excess to be directed to export. This goal can be achieved through the development and modernization of agriculture through investments. [4,5]

Investment in agriculture ensure economic growth and labor productivity. [4,5]

The purpose of this paper is to determine the influence of agricultural investments on the Romanian agriculture incomes, realizing in the same time their evolution.

MATERIALS AND METHODS

The research was carried out on the basis of statistical data published by the National Institute of Statistics of Romania, taking into account a period of 13 years, respectively 2005-2017. The methods of analysis used for data processing were: the comparison method, the indices method, correlation method and regression method.

The indicators under study are represented by: agricultural investments and incomes obtained by farmers in agriculture.

The indices method shows the evolution of a phenomenon and highlights the annual growth rates. [12]

The comparison method highlights changes in time and space of events.

The correlation method highlights the degree of association between the variables. It is a general term used to define the interdependence or link between variables observed in statistical populations. In a narrow sense, it is a measure of the degree of statistical linkage between quantitative variables, called "correlation coefficient" [6]

The correlation coefficient is a composite indicator that measures the intensity of the connections between the variables, showing which share of the Y variation is a result of the influence of the X factor. [1]

The correlation ratio can take values between 0 and 1. If the value is close to 1, the link between the variables is stronger and less intense as they approach more than 0. The minus sign indicates the inverse link while the plus sign indicates the direct link. [2]

The correlation and regression calculation was made with the help of the statistical instrument in Excel, useful in the analysis, simulation and interpretation of results.

RESULTS AND DISCUSSIONS

In view of the important contribution of agriculture to Romania's GDP, it is essential to assess the investments in agriculture, as well as the incomes of people working in this field.

Analyzing the evolution of investments in agriculture during the analyzed period, we can see an upward trend until 2008, followed by a downward trend in 2009 and 2010, starting with 2011, the upward trend is coming.

The causes that led to the downward trend in 2008-2009 are due to the economic crisis, which was manifested at global level, but also in Romania. The decrease of investments in agriculture in 2009 compared to 2008 was 12.7% and 8.9% in 2010 compared to 2009. The highest increase can be seen in 2008 compared to 2007, respectively 52.6%. Compared to 2005, in 2015 investments increased by 255%. But there is a decrease of 8.2% in 2016 compared to 2015.
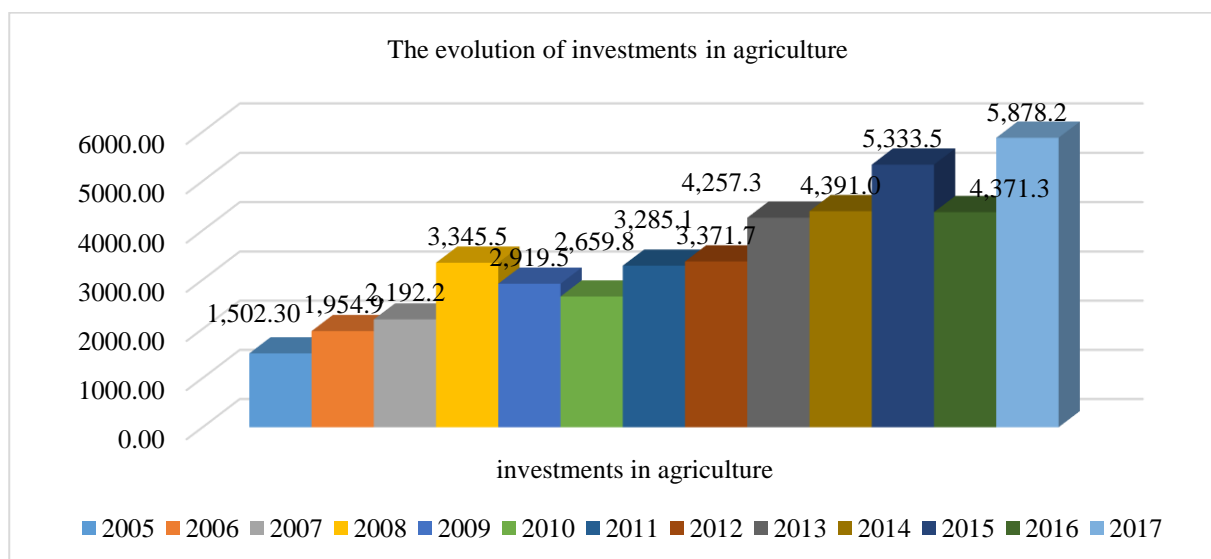

Fig.1. The evolution of investments in agriculture in the period 2005-2017
Source: NIS, http://statistici.insse.ro, Accessed on 4.03.2018 [11].

Attracting foreign direct investment to the area of agriculture can be a solution, especially for organic farming, given the growing demand for organic products. Because of the moderate use of chemical fertilizers in Romania, conversion to organic farming can be made to capitalize on its comparative advantages, namely agricultural land of high quality and productivity. [8]

Foreign direct investment can drive upgrading of agriculture and increasing yields by developing irrigation systems, equipping farms with modern machinery, and using fertilizers that are less harmful to the environment. Unfortunately, the experience of recent years shows that investments made in agricultural land have purely speculative purposes.
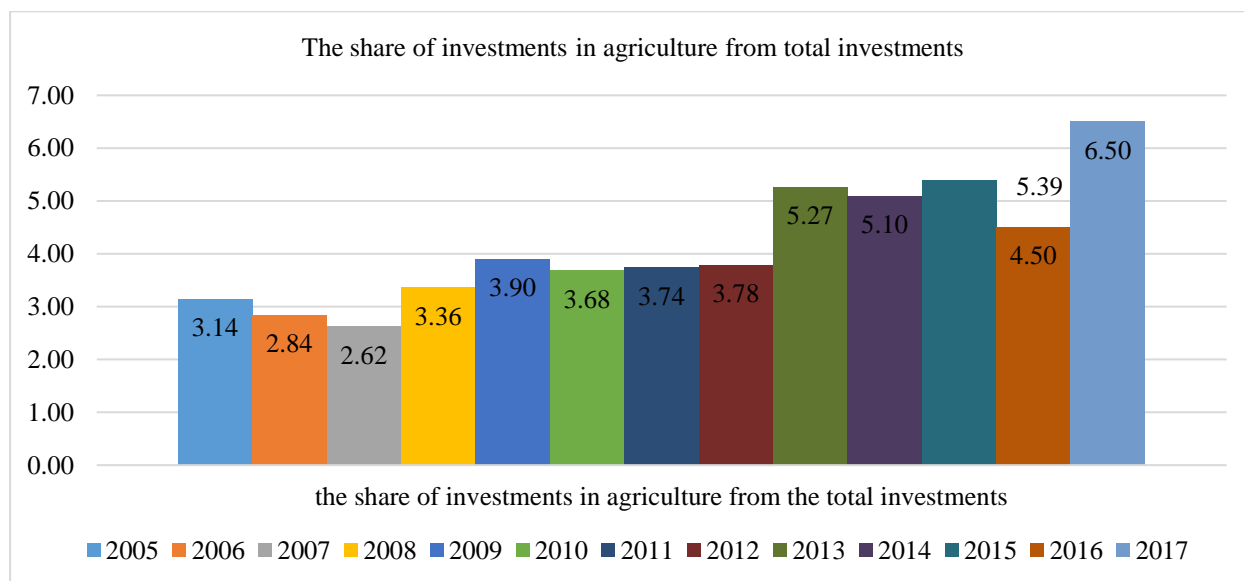

Fig.2. The share of investments in agriculture from total investments in 2005-2017 period
Source: NIS, http://statistici.insse.ro, Accessed on 4.03.2018 [11].

Analyzing the share of investments in agriculture from total investments in Romania according to the chart 2 it can be noticed that in 2007 the lowest share was recorded, respectively 2.6%. In the period 2010-2012 the share of investments in agriculture from the total investments was about 3.7%, and in 2017 the highest value is observed, namely 6.5%.
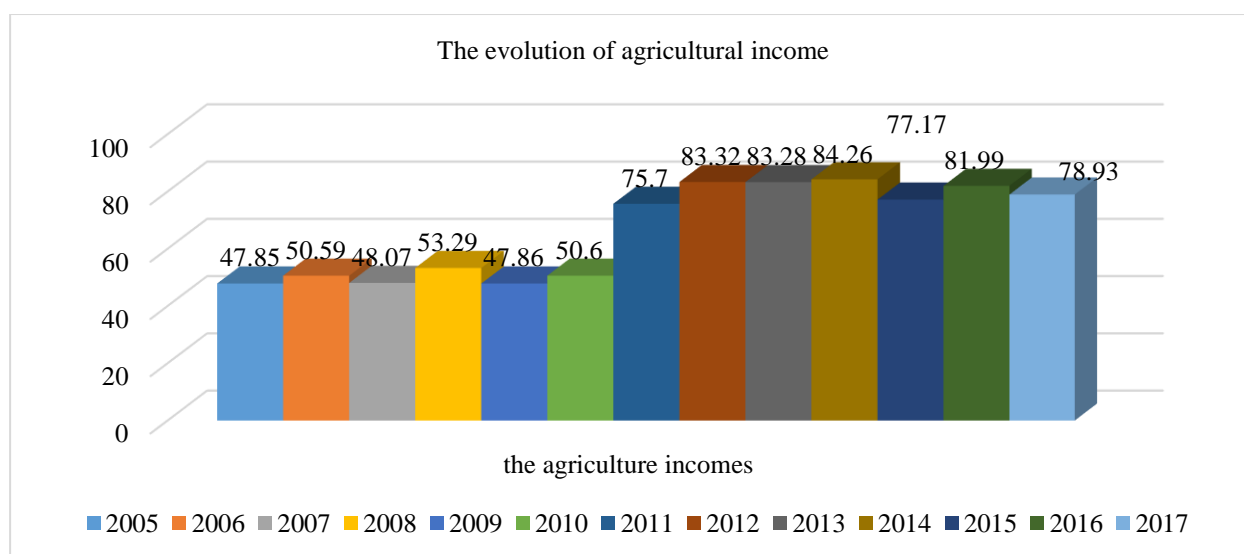

Fig.3. The evolution of agricultural income in 2005-2017 period
Source: NIS, http://statistici.insse.ro, Accessed on 4.03.2018 [11].

Analyzing farm incomes according to the Fig. 3 there is an upward trend until 2014, followed by a decline in 2015, a slight increase in 2016, followed by a fall in 2017. The amount of income in agriculture is very low compared to other areas.

Table 1.The results of the regression function between agricultural investment and agricultural income

Regression Statistics	
Multiple R	0.786369
R Square	0.618376
Adjusted R Square	0.583683
Standard Error	9.575483
Observations	13

ANOVA

	df	SS	MS	F	Significance F
Regression	1	1,634.299	1,634.299	17.8242	0.001432
Residual	11	1,008.589	91.68988		
Total	12	2,642.888			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	36.81431	7.881851	4.67077	0.000682	19.46647	54.16215	19.46647	54.16215
X Variable 1	0.008959	0.002122	4.221872	0.001432	0.004288	0.013629	0.004288	0.013629

Source: Own calculations.

The competitiveness of Romanian agriculture is influenced by the imbalance between the large number of small farms compared to the large ones, which also influences the incomes obtained.

Because of the large number of small-sized farms, their ability to negotiate with large chain stores is very low, which leads to the appearance of intermediaries, which means low incomes for producers.

Based on the resulted data (Table 1), the connection between the value of investments in agriculture and the value of the incomes obtained from agriculture in Romania is a direct and high intensity, because the coefficient of correlation having a value of 0.786.

The value of the coefficient of determination indicates that 78% of the variation of the agricultural income is influenced by the volume of investments in agriculture.

Because F = 17.8242, and the probability (F - statistical) is 0.001432 (a lower value than 0.05), this model is valid, the calculated value of F test being higher than the theoretical one. With a direct and close connection between the two indicators, we can assume that an increase of 1 million lei in agricultural investments will lead to an increase in agricultural incomes by 89.50 lei.

CONCLUSIONS

Analyzing the evolution of investments in agriculture during the analyzed period, we can see an upward trend until 2008, followed by a downward trend in 2009 and 2010, starting with 2011, the upward trend is coming.

Attracting foreign direct investment to the area of agriculture can be a solution, especially for organic farming, given the growing demand for organic products.

Analyzing farm incomes there is an upward trend until 2014, followed by a decline in 2015, a slight increase in 2016, followed by a fall in 2017. The competitiveness of Romanian agriculture is influenced by the imbalance between the large number of small farms compared to the large ones, which also influences the incomes obtained.

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