FEATURES OF THE FORMATION OF AGRICULTURAL LAND VALUE IN THE EUROPEAN COUNTRIES

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The influence of the Common Agricultural Policy (CAP) on the agricultural sector of the European Union (EU) has been studied. The specifics of the formation and comparison of the calculated (by the method of capitalization of net operating or rent income) and the market value of agricultural land in Europe and the Netherlands, in particular, are justified.

Keywords. Agricultural land, value, the land market, the European union, the common agricultural policy.

Problem statement.

The EU uses about 40% of its budget to finance the Common Agricultural Policy. This is one of the most important and expensive areas of EU [4]. There is reason to believe that European agriculture would be at a much lower level of profitability without subsidies under the Common Agricultural Policy.

Since CAP has a significant impact on the development of agriculture in Europe, we must consider the system of agrarian sector in the EU Member States and explore the features of the value chain of agricultural land in Europe.

Analysis of recent research and publications.

The question we research and development in the agricultural sector of the European Union subject of numerous publications of the Food and Agricultural Organization (FAO), United Nations (UN), the World Bank and the European Commission.

Regarding the relations between Ukraine and the European Union in the field of agriculture, there is a contribution made D. Nizalov, O. Nivievskyi, O. Prokopenko, Y. Mahnova.

The purpose of the article is the identifying the features of the formation of agricultural land value in Europe, which includes support under the Common Agricultural Policy.

Main material.

According to the Land Code of Ukraine there is currently a ban on the sale of agriculture land and other land parcels (shares) to January 1st, 2018.
The main condition for the functioning of the agricultural land market is the adoption of a law on their circulation. At the same time, one of the key issues arising from the introduction of the agricultural land market is as follows: How much will a hectare of agricultural land in Ukraine cost?

In order to form an adequate cost of agricultural land in Ukraine, it is worth investigating the market for such lands and their value in the countries of the European Union.

According to various sources the cost of agricultural land in Europe ranges from 1000 to 5000 EUR/ha in Eastern Europe, 15 000 to 30 000 EUR/ha – in Western Europe and 60 000 EUR/ha in some highly developed countries.

But in most countries, the EU’s cost of land ranges from 5000 to 25 000 EUR/ha, which is an average of 15 000 EUR/ha.

In the study of EU agricultural sector, it is necessary first of all to note the main feature - the EU Common Agricultural Policy. It dates back to 1962. This is an agricultural policy of the European Union, which is intended to support European farmers by introducing subsidies and other programs. The main task of the CAP is to ensure an acceptable standard of living for farmers and quality food at affordable prices – for consumers, particularly by organizing common agricultural market and application of the principles of single prices, financial solidarity and advantages of the EU [1].

Support for farmers under the Common Agricultural Policy program is carried out in several main ways, namely:

- **Direct payments** – farmers receive annual payments to help stabilize farm revenues in the face of volatile market prices, unpredictable weather conditions and variable input costs. To benefit from these payments, farmers must respect rules and practices concerning environmental standards, animal welfare, food safety and traceability.

- **Rural development programs** provide co-funding for projects with economic, environmental or social objectives, primarily targeting farms and SMEs in rural areas.

- **Market measures** – special measures linked to specific market situations, as well as support for trade promotion, the school milk and fruit schemes, and producer organizations, which help farmers to get a better deal when negotiating prices and conditions with processors and supermarkets. [5].

According to statistics from the European Union at a time when the number of farms and the number of employees tends to decrease, the gross yield of agricultural activity is gradually increasing. In the period from 2003 to 2014, the gross output of agricultural products in monetary terms increased by 22,3 %. The relevant data are presented in Table 1.

| Table 1. Gross agricultural output of the European Union for the period 2003-2014. [9] |
| --- | --- | --- | --- | --- | --- | --- | --- |
| | 2003 | 2005 | 2007 | 2009 | 2011 | 2013 | 2014 |
| Plant growing | 176091 | 168991 | 191838 | 173793 | 208854 | 212442 | 201960 |
| Livestock breeding | 131929 | 136008 | 142374 | 136810 | 156635 | 168635 | 168806 |
| Other | 21823 | 24228 | 26596 | 28127 | 30458 | 32078 | 32767 |
| Total | 329843 | 329227 | 360808 | 338730 | 395947 | 413155 | 403534 |

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At the same time, according to the official website of the European Commission, the income of the EU member states in the field of agriculture in 2014 was approximately 147 billion EUR, which is almost 14% more than in 2003. Indicators of EU agricultural income for the period 2003-2014 are presented in Figure 1.

Among all the ways to promote the development of the agrarian sector, the most expensive and the most widespread are direct payments, which account for about 70% of the total annual funding within CAP over the last years. Thus, in 2014 direct payments were paid 41 billion euro, representing 75% of the total funding of 55 billion EUR (Fig. 2). The situation in 2013, when direct payments amounted to 40 billion EUR, with a total budget of 58 billion euro, i.e. 69%, was slightly different.

Such additional subsidies for farmers to take a significant share in the income of farmers in agriculture, which takes white she-thirds of total revenue in the EU agricultural sector. Table 2 shows the proportion of funding from foundations common agricultural policy first in total income of EU agriculture.

That is, in the period from 2003 to 2014, on average 40% of the total income in the agricultural sector was due only to subsidies from European budgets.

On average, in the EU member states in 2013, 250 EUR/ha was allocated for direct payments per year: the maximum was in Malta – 670 EUR/ha, the minimum – in Latvia – 80 EUR/ha. In 2014
this figure fell slightly to 230 EUR/ha per year [5].

But pay attention n and that for such large subsidies needed to farm according to environmental and food’s conditions that are sufficiently stringent.

Nevertheless, given the availability of such grants, one can make a hypothesis that direct payments have a significant impact on the formation of the value of agricultural land in the EU.

To assess the impact of the CAP on the formation of the cost of land, to compare the market value of land in Europe (which is about 15 000 EUR/ha) with the value determined by the capitalization of net operating or rental income. In addition, it is suggested that such a comparison be made on the example of the Netherlands as a high-income country and agricultural production.

According to the European Commission [6] by 2014 the value of arable land in the Netherlands was 57 000 EUR/ha.

Since support under the direct payments of the Common Agricultural Policy is a constant source of income (in the condition of fulfilling the set requirements), it is proposed to determine the value by the method of capitalization of net operating or rent income by the following formula:

\[ C = \frac{N}{R_c} + \frac{DP}{R_f} \]  

where:  
\( C \) - the cost of agricultural land EUR/ha;  
\( N \) - net operating income, EUR/ha;  
\( R_c \) - capitalization rate;  
\( DP \) – amount of direct payments under the CAP, EUR/ha;  
\( R_f \) - risk-free rate.

In 2014 income in the Netherlands from wheat totaled 1 925.7 EUR/ha, and the average income in Europe – 969.0 EUR/ha [9]; expenses amounted to 820 and 650 EUR/ha, respectively [8, 12]; CAP direct payments for 2015 reached 430 EUR/ha in the Netherlands and 266 EUR/ha – in Europe the average [7].

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<tr>
<th>Table 2. Share of CAP funding in the EU agriculture income.</th>
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<td>Share of financing of agriculture, %</td>
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<td>2003</td>
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<tr>
<td>Share of direct payments</td>
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<td>The total share of CAP</td>
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<th>Table 3. Initial data for calculating and comparing the cost of agricultural land in Europe and the Netherlands</th>
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<td>EU</td>
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<td>---------------------------------------------------------------</td>
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<tr>
<td>Yield, q / ha</td>
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<tr>
<td>Sales price, EUR / q</td>
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<td>Costs of production, EUR / ha</td>
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<td>Gross income, EUR / ha</td>
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<td>Direct payments of CA, EUR / ha</td>
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<td>Capitalization rate, %</td>
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<td>The risk-free rate, %</td>
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<td>Market value of arable land, EUR / ha</td>
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<td>Cost calculated by the capitalization method, EUR / ha</td>
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According to the Rosenberg Real Estate Fund (RREEF) the average capitalization rate in Europe is about 6,6%, the Netherlands – 7,8%, and risk-free rate – 3,0 and 2,2%, respectively [13].

Calculated by the method of capitalization, the average cost of agricultural land in Europe is almost identical to the statistical data, while the value of land in the Netherlands, albeit much higher than the average European, but differs from the market.

This may be explained by the fact that, first of all, the authenticity and relevance of the source data may be questionable; and secondly, many other factors that affect the formation of the value of agricultural land (national agricultural policy, balance of supply and demand, etc.) were not taken into account.

However, such a cost-determining methodology makes it possible to understand the main sources of agricultural value formation in Europe, namely: income from agricultural production and support within the CAP.

It should be noted that in the calculation process, it was found that capitalized net operating income was only 35% in Europe and 42% in the Netherlands. The rest of the value is formed through grants within the framework of the Common Agricultural Policy.

Conclusions.

In addition, a significant proportion of farm income countries of the European Union comes from the common agricultural policy first, about 70% of these subsidies comes in the form of direct payments to farmers per annum per hectare of cultivated land. Much of these payments are independent, that is, they are not tied to productive output and product prices, which ensures farmers confidence in the profit, regardless of yield or regional market conditions.

In turn, this reduces the risks of farming in Europe and increases the popularity and effectiveness of rural areas in the European Union.

Thus we can say that a significant part of the value of agricultural land in Europe forms the Common Agricultural Policy.

References