

## TRENDS IN THE FORMATION AND CORRELATION OF CURRENT AND NON-CURRENT ASSETS OF AGRICULTURAL ENTERPRISES: A CASE STUDY OF UKRAINE

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### Abstract

*The study aims to identify trends in the formation of the structure of assets of agricultural enterprises in Ukraine and the ratio of their individual groups. In preparation of work the complex methods of economic research used in this study were: monographic, critical analysis, structural and trend analysis, correlation-regression analysis, etc. The study found that in the current economic conditions, the technical potential and repair and maintenance base of the agricultural sector of Ukraine does not meet the requirements of scientifically sound needs of agricultural production. The supply of machinery to most agricultural producers in Ukraine is approaching a critically insufficient level. It is substantiated that the main agricultural machines of agricultural enterprises of Ukraine are provided only by 45-65%. The article proves that more than 90% of the technical means of agricultural enterprises of Ukraine have already served their depreciation period; their technical readiness for fieldwork does not exceed 60-70%. The article substantiates that due to malfunctions and physical wear and tear, a quarter of tractors and combines are not used in Ukraine every year, and the technical service system operates at minimum capacity.*

**Key words:** agricultural enterprises, asset management, current assets, non-current assets, structure of assets of agricultural enterprises

### INTRODUCTION

Production and financial activity of any agricultural enterprise depend on the availability and optimality of the asset structure, which is formed under the influence of a number of factors: specialization, production volumes, technology, and technical support of production processes, providing the enterprise with material resources and so on.

In conditions of instability and variability of the external environment of economic entities, there is an objective need to develop a set of measures to strengthen the level of their economic security. One of the most important components of this process is the management of the asset structure of agricultural entities,

the efficiency of the formation and use of which depends on the final results of economic activity, uninterrupted circulation of capital, and financial condition of enterprises.

The transition of agricultural production to an industrial basis, the emergence of new equipment, technologies, organizational innovations are determined by the quantitative and qualitative composition of non-current and current assets that would meet the realities of modern production needs of agricultural enterprises.

The urgency of solving the problem of the ratio of current and non-current assets for the agricultural sector is determined by the strategic importance for each country, the spread of large-scale production, constant changes in the agro-industrial complex, and

Ukraine`s entry into the world community. Therefore, the methods and tools for analyzing the processes of formation and use of assets, methodological issues of optimizing the ratio of their individual parts require further scientific study.

A significant contribution to the development of theoretical and methodological principles and issues of asset management was made by such leading scientists as, in particular, O. Agres [1], O. Apostolyuk [2], O. Binert [4], F. Butynets [5], I. Chukhno [7], M. Dziamulych [8-12], Marcuta et al [13], P. Nosov [14], O. Parkhomenko [15], A. Poddierohin [16], A. Popescu [17-26], A. Rymarchuk [27], T. Shmatkovska [28-30], R. Sodoma [31-32], V. Sopko [33], O. Stashchuk [34-36], I. Yakoviyk [38], Ya. Yanyshyn [39], O. Yatsukh [40], I. Zhurakovska [41].

In our opinion, the issues of asset management, the ratio of their current and non-current components in agricultural formations, their analytical evaluation, and methodological justification in the economic literature are covered insufficiently, and therefore need further study, what justifies the relevance of our study.

## MATERIALS AND METHODS

The study aims to identify trends in the formation of the structure of assets of agricultural enterprises in Ukraine and the ratio of their individual groups.

To achieve this goal in the study solved a set of the following tasks:

- the structure of assets of Ukrainian enterprises in the studied period as of the end of the year by types of economic activity was assessed;
- the size and dynamics of the share of assets of the agricultural sector in the assets of all sectors of the economy of Ukraine;
- the dynamics of changes in the ratio of non-current and current assets of agricultural enterprises of Ukraine in the study period;
- the tendencies of formation of the ratio of current and non-current assets at the end of the year concerning agricultural enterprises of Ukraine are revealed and investigated.

In preparation of work, formation of analytical developments, conclusions, and recommendations the complex methods of economic research was used, among which: monographic; critical analysis; structural and trend analysis, correlation-regression analysis, etc.

## RESULTS AND DISCUSSIONS

Dynamic and proportional development of the national economy, the formation of its rational sectoral structure can be achieved only by ensuring a balanced relationship between intermediate and final products of all industries and between the volume and structure of production and final consumption. The solution to this problem requires the development of a comprehensive approach to the study of the composition of assets of agricultural producers in the system of macroeconomic relations.

The importance of studying the property base of agriculture as a component of the economic complex is determined by its place in the national economy of Ukraine, the content and nature of economic and social functions.

Thus, in Fig. 1 we studied the structure of assets of Ukrainian enterprises in terms of their economic activities in 2011-2019.

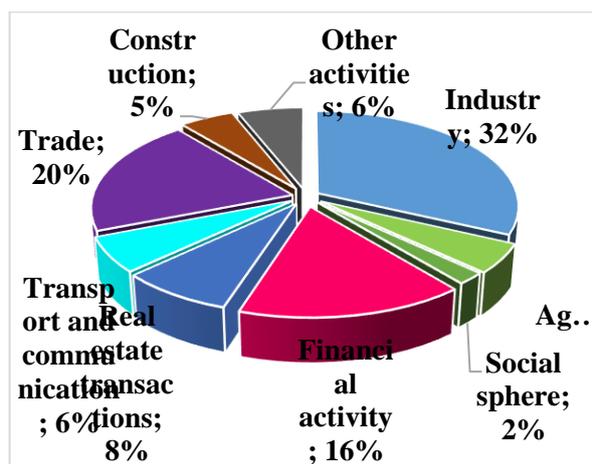


Fig. 1. The structure of assets of enterprises of Ukraine by type of economic activity for 2011-2019, on average, as of the end of the year, %

Source: Own development based on [37].

According to the results of the analysis of Fig. 1, note that the largest amount of investment coming into the economy of Ukraine goes to industrial assets – 32%, trade – 20%, and the

development of financial activities – 20%. The share of social assets (education, health care, art, sports, entertainment and recreation, social services) in their overall structure during 2011-2019 was at a very low level – 2%.

According to the analysis of Fig. 1, it was found that agricultural assets cause much less interest in investing in them. The share of the agricultural sector in the structure of assets in the study period was about 5%. This indicator in comparison with other branches of Ukraine is rather low. Its value also indicates the unattractiveness of investors in the agricultural sector of the economy.

With the right choice of investment policy by state and local authorities, the share of investment in agriculture in Ukraine, according to forecasts, may increase to 25.0%. The analysis of the structure of assets by type of activity in Ukraine gives grounds to claim that the volume of investment in the agricultural sector does not meet global

standards due to the constant shortage of financial resources. Therefore, it is expedient, in our opinion, to study the dynamics of the share of agricultural assets in the assets of all sectors of the economy. To do this, in Fig. 2 we have developed and presented a polynomial trend line of the share of industry assets.

Herewith the regression equation has the form:

$$y = 0.0637x^2 - 0.5086x + 5.0438$$

and shows that the average share of agricultural assets in the assets of all sectors of the economy of Ukraine in 2011-2019 was 5%. Every year, the share of agricultural assets has a slowdown of 0.5%, and the dynamics of growth acceleration are low (0.0637). The coefficient of reliability of the approximation ( $R^2$ ) is 0.825, i.e., the reliability of the generated conclusion is quite high.

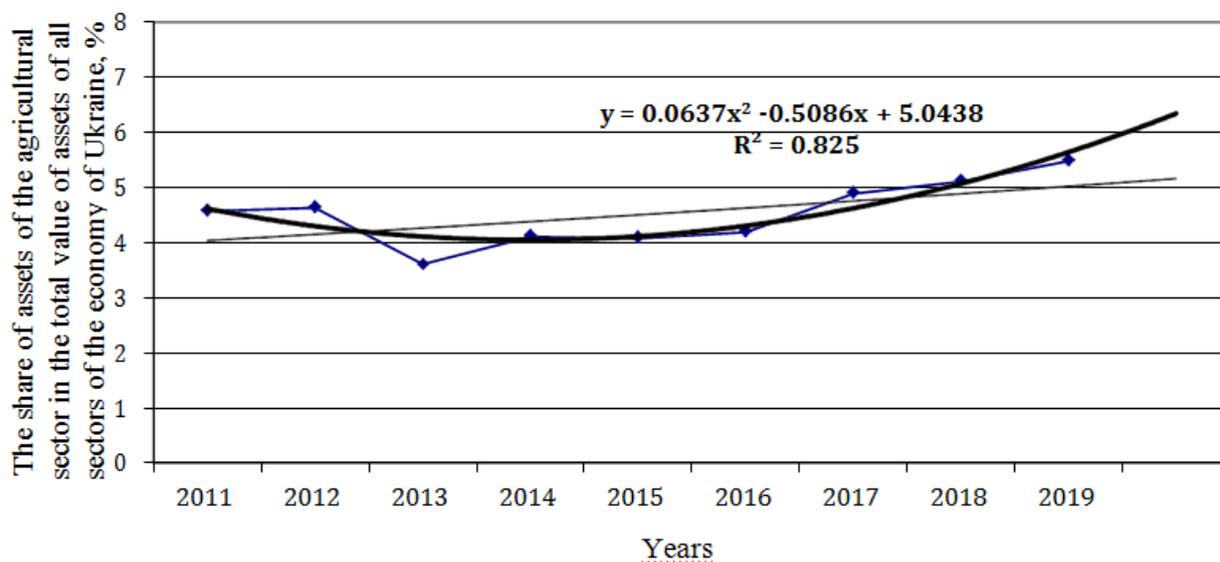


Fig. 2. Polynomial trend model of the share of agricultural assets in the assets of all sectors of the economy of Ukraine for 2011 – 2019  
 Source: Own development based on [37].

The current situation is not good enough for the Ukrainian economy, as agriculture plays an important role in shaping economic growth. Agricultural producers ensure the country's food security and make a significant contribution to export flows. In 2011-2019, 12% of gross value added was created in this agricultural sector, 19.7% of the total

employed population of the country works here, so, in our opinion, at the state level, it is advisable to develop a set of measures to stimulate investment incentives in the agricultural sector.

It is well known that the relationship between non-current and current assets plays an important role in the process of managing

them. From the point of view of a systematic approach to the management of agricultural enterprises, the composition and structure of their assets are of great importance. On the one hand, the lack of current assets leads to periodic failures in the enterprise, reduced liquidity, and reduced financial stability, on the other hand, the lack of non-current – to non-fulfilment of planned production, lack of equipment and premises, and, consequently, to the lower market value of agricultural enterprises [3]. In addition, the excessive volume of current assets leads to the presence of agricultural enterprises temporarily free, inactive assets, excessive financing costs, as a result – a decrease in profits of such enterprises; and excessive non-current assets – to the deterioration of their useful life and

reduce the value of agricultural enterprises. The dynamics of changes in the ratio of non-current and current assets of agricultural enterprises of Ukraine in the study period are shown in Fig. 3. According to the results of the study, we found that in the overall structure of assets during 2011-2019 there is a steady trend to increase the share of current assets while reducing non-current. In particular, as of the end of 2019, the share of non-current assets was 38% against their share of 56% at the end of 2011, thus decreasing by 18% in the study period. The absolute reduction in their share during 2011-2019 averaged 2% per year. Accordingly, the share of current assets of agricultural enterprises increased annually during the analyzed period by an average of 2% per year.

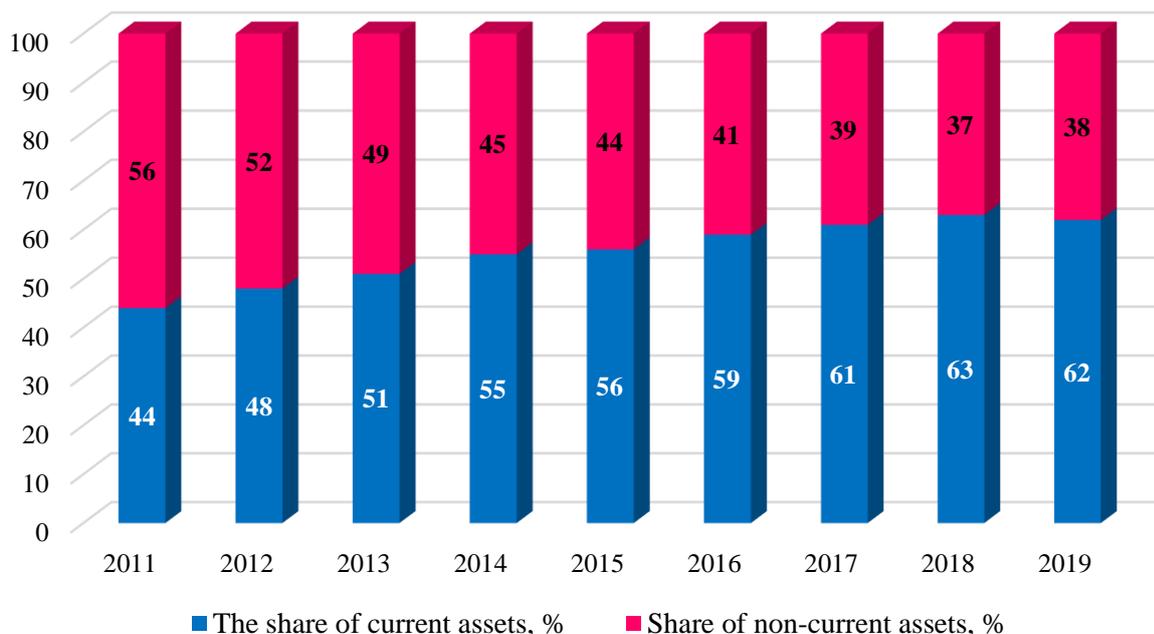


Fig. 3. Dynamics of change in the ratio of non-current and current assets of agricultural enterprises of Ukraine for 2011 – 2019, as of the end of the year  
 Source: Own development based on [37].

We found that in the study period, the largest share in the structure of assets of agricultural enterprises of Ukraine accounted for current assets at the end of 2018 (namely – 63%), which indicates the formation of a fairly mobile structure of assets and accelerates their turnover. The so-called “heavy” structure of assets is more typical for agricultural enterprises, so this trend cannot be considered a completely positive phenomenon, as the

share of non-current assets decreases mainly due to the fact that most agricultural enterprises are unable to replace assets of obsolete and depreciated fixed assets (machinery, equipment, etc.) new, as well as unstable price situation in the market of material resources, which forces agricultural producers to create greater reserves. At the same time, there is a tendency to increase the total value of assets of agricultural enterprises

in Ukraine during 2011–2019 as a whole (Fig. 4).

According to the results of construction and analysis of the linear trend model, it is established that in the studied period there is a clear tendency to increase the value of assets of agricultural enterprises. The regression

equation  $y = 32,538x + 1,949.4$  shows that for the period 2011–2019 the average value of assets of agricultural enterprises increased by UAH 32.5 billion annually. Note that the reliability of our conclusion is high because the coefficient of reliability of the approximation is close to 1.

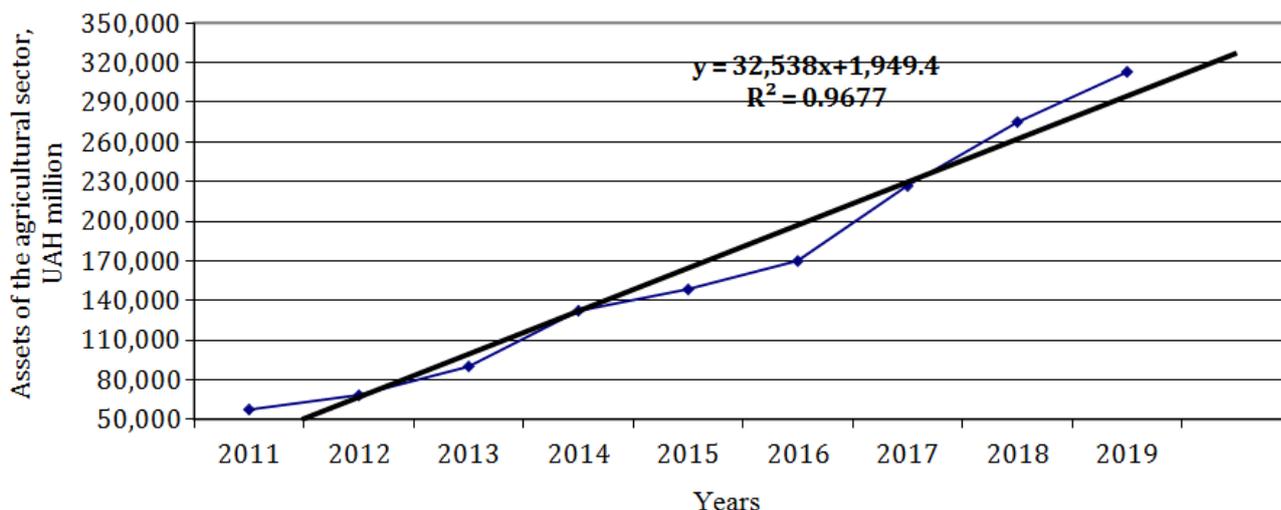


Fig. 4. Linear trend model of the value of assets of agricultural enterprises of Ukraine for 2011 - 2019, as of the end of the year

Source: Own development based on [37].

Thus, the increase in the value of assets of agricultural enterprises in the study period was due to their turnover. Significant financing problems do not provide an opportunity to invest in the restoration of non-current assets of agricultural producers, which leads to a gradual decrease in their share in the overall structure due to depreciation. It is established that the specified decrease in the value of non-current assets occurred mainly due to fixed assets, reduced the volume of construction in progress. At the same time, the growth of current assets was mainly due to inventories. The current situation indicates the presence of problems in the calculations of agricultural enterprises. In addition, agricultural enterprises in Ukraine limit, in particular, the sale of crop products of the new harvest, expecting a further increase in market prices, which reduces the turnover of working capital.

We support the opinion of Y. Chaliuk, who notes that the most accurate overall structure of assets is characterized by the ratio of current and non-current assets, the value of

which should take into account the sectoral characteristics of the assets of agricultural enterprises [6].

This indicator in asset management is of great importance for the strategic management of the enterprise as a single system. We have studied its dynamics at the macroeconomic level in Ukraine with the help of a power curve, which sufficiently smoothes the indicators that monotonically increase or decrease over time. In fig. 5 shows the power trend line of the ratio of current and non-current assets for agricultural enterprises of Ukraine in 2011–2019.

The regression equation has the form:  $= 0.7732x^{0.311}$  and shows that the initial level in the ratio of assets for agricultural enterprises of Ukraine in the study period is 77 kop. current assets per UAH 1 non-current. On average, in 2011-2019, the ratio of current and non-current assets of agricultural enterprises in Ukraine increased annually by  $1^{0.311}$  times.

Summing up, we note that the results of our research found that in the current economic conditions, the technical potential and repair

and maintenance of the agricultural sector of Ukraine do not meet the requirements of scientifically sound needs of agricultural production. The supply of machinery to most farmers is approaching a critically low level. It is established that the agricultural enterprises of Ukraine are provided with the

basic agricultural machines only by 45-65%. In addition, it was found that more than 90% of technical means of agricultural enterprises of Ukraine have already served their depreciation period, their technical readiness for fieldwork does not exceed 60-70%.

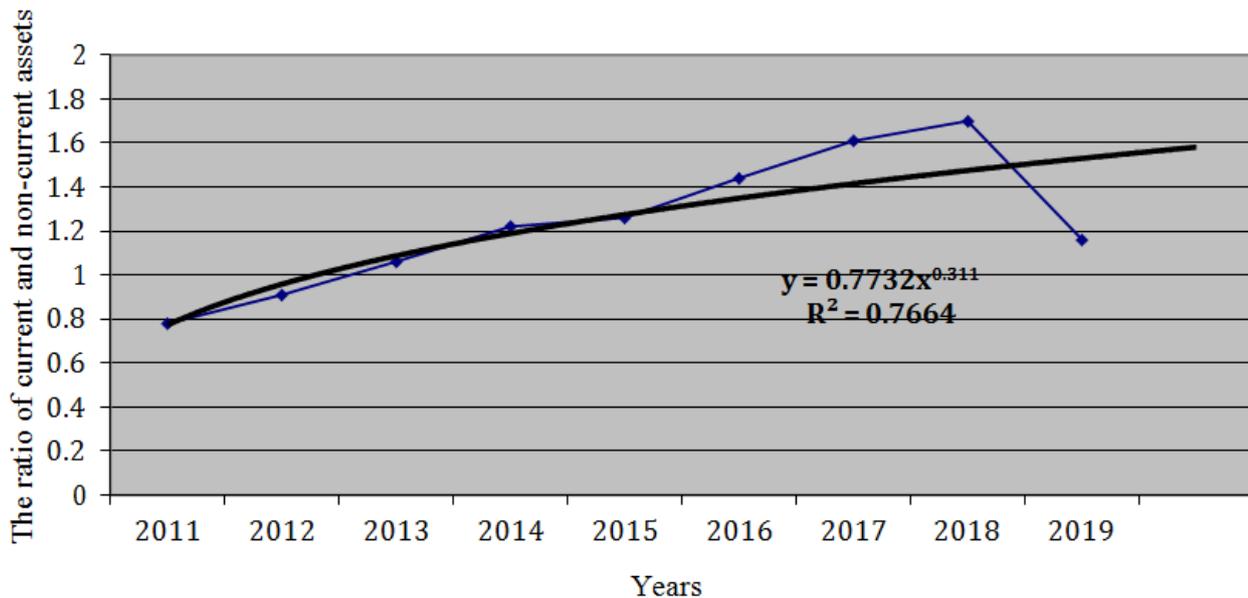


Fig. 5. Power trend model of the ratio of current and non-current assets of agricultural enterprises of Ukraine in 2011–2019, as of the end of the year  
 Source: Own development based on [37].

The rate of annual write-off of worn-out machinery in the agricultural sector of Ukraine in the study period is several times higher than the rate of its purchase. The results of the study revealed that due to malfunctions and physical wear and tear, a quarter of tractors and combines are not used annually, and the technical service system operates at minimum capacity.

## CONCLUSIONS

Thus, the study found that the average share of assets of the agricultural sector of Ukraine in the sectoral structure of assets for the period 2011-2019 was quite low - about 5%, which indicates its unattractiveness for investors operating in the agricultural sector. In our opinion, given the prospects and significant export potential of the industry, state and local authorities need to develop a prudent investment policy at all levels.

Every year the share of agricultural assets in Ukraine is characterized by slow growth, and the dynamics of accelerating growth is low, which is not evidence of the formation of positive trends, as agriculture plays an important role in ensuring its economic growth.

In the general structure of assets of agricultural enterprises of Ukraine during 2011-2019, there is a steady tendency to increase the share of current assets, which indicates the formation of a more mobile structure of assets. It is established that the current trend cannot be considered positive, as the share of non-current assets decreases mainly due to the fact that most agricultural enterprises are unable to replace obsolete and worn-out fixed assets with new ones.

The most important factor in ensuring the continuity of the production process of agricultural enterprises is the availability of the required amount of inventories, so the policy of current assets management begins

with minimizing the total cost of inventories of agricultural enterprises. When the size of inventories is insufficient, the timeliness and completeness of the implementation of production processes of the enterprise are violated, the timely reproduction of current assets is not provided. This is one of the reasons for the decline in recent years in the efficiency of the use of current assets of agricultural enterprises in Ukraine. The problem is to minimize the total costs associated with ordering the next batch of any of the resources and their storage in the warehouse. There is a clear relationship between the value of these costs and the factors that affect them, namely the more often companies make orders to purchase the resources they need, the greater the cost of such orders they incur, but the cost of storing a unit of such current assets.

Under such conditions, in our opinion, the optimization of the asset structure should be based on the use of controlling and budgeting. In particular, the main areas of improving the asset structure of agricultural enterprises may be the rationing and budgeting of current assets; introduction of a sufficient frequency of revaluations of fixed assets; formation of preconditions for the growth of specific weight of fixed assets of production sphere; inventory of assets in order to identify unused objects; optimization of sources of asset formation by increasing the role of lending and financial leasing; taking measures to reduce receivables and improve the sales process, which will increase the share of working capital in the field of production and strengthen the economic security of enterprises as a whole.

As a result, it should be noted that the technical potential and repair and maintenance base of the agricultural sector of Ukraine do not meet the requirements of scientifically sound needs of agricultural production. That is why the implementation of state and regional investment policy, as well as in the development of financial strategy of large agricultural enterprises of different forms of ownership and different specialization will be promising research to justify the relationship

between current and non-current assets as a strategic guideline based on their business.

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