Universal Journal of Agricultural Research 10(6): 639-650, 2022 http://www.hrpub.org
DOI: 10.13189/ujar.2022.100605

Management of Non-current Assets and Capital Investments in Enterprises of the Agro-industrial Sector: A Case Study of Ukraine

Tetiana Shmatkovska[1,*], Hanna Muterko[2], Andrii Bilochenko[3], Olha Shulha[4], Olha Kuznietsova[5], Mykola Dziamulych[6]

[1]Department of Accounting and Taxation, Lesya Ukrainka Volyn National University, 28 Vynnychenko str., 43025, Lutsk, Ukraine
[2]Department of State Higher Educational Establishment, Priazovskyi State Technical University, 7 Universytetska str., 87555, Mariupol, Ukraine
[3]National Scientific Centre «Institute of Agrarian Economics» NAAS, 11 Heroiv Oborony Street, 03041, Kyiv, Ukraine
[4]Department of Management, State University of Intelligent Technologies and Telecommunications, 1 Kuznechna str., 65023, Odesa, Ukraine
[5]Department of Management, Finance and Administration, Odesa Institute of the Interregional Academy of Personnel Management, 19 Chornomorskogo Kozatsva str., 65003, Odesa, Ukraine
[6]Department of Economic, Lutsk National Technical University, 43018, Lutsk, Ukraine

Received July 10, 2022; Revised October 7, 2022; Accepted October 25, 2022

Cite This Paper in the Following Citation Styles

(a): *[1] Tetiana Shmatkovska, Hanna Muterko, Andrii Bilochenko, Olha Shulha, Olha Kuznietsova, Mykola Dziamulych6 , "Management of Non-current Assets and Capital Investments in Enterprises of the Agro-industrial Sector: A Case Study of Ukraine," Universal Journal of Agricultural Research, Vol. 10, No. 6, pp. 639 - 650, 2022. DOI: 10.13189/ujar.2022.100605.*

(b): *Tetiana Shmatkovska, Hanna Muterko, Andrii Bilochenko, Olha Shulha, Olha Kuznietsova, Mykola Dziamulych (2022). Management of Non-current Assets and Capital Investments in Enterprises of the Agro-industrial Sector: A Case Study of Ukraine. Universal Journal of Agricultural Research, 10(6), 639 - 650. DOI: 10.13189/ujar.2022.100605.*

Abstract In the article we proved that, in the modern conditions of doing business in Ukraine, there is a high specific weight of operating non-current assets in the non-current assets of agricultural enterprises, which is caused by their production direction and sale of products in wholesale lots. In order to study the formed trend, the polynomial trend line of the specific weight of operating non-current assets in the composition of non-current assets of agricultural enterprises in Ukraine is displayed. The features of non-current asset management in agriculture are determined by certain features regarding their use, which include the slowness of capital movement, uneven loading, the irrationality of formation, and low liquidity. In the article, we established that the value of long-term biological assets of agricultural enterprises of Ukraine increased during the research period. However, at the same time, there was a simultaneous reduction in the specific weight of these assets, both as part of the total assets of enterprises and as part of non-current assets. That is, it can be concluded that the increase in the value of biological assets in agricultural enterprises is caused solely by the increase in prices for finished products and an increase in their cost price. Based on the results of the study, it was established that during the analyzed period, investments in the agricultural sector had a growing trend for a long time. Drop in investments that occurred in 2020-2021 was due to the crisis impact of the COVID-19 pandemic, which resulted in a general reduction in investment activity in the markets. According to the results of the analysis of the relationship between the size of capital investments and the level of profitability of enterprises in the agrarian sector of Ukraine, such interdependence was found in the studied period for medium-sized and small agricultural enterprises. According to the results of our research, cartograms of the grouping of regions of Ukraine by the specific weight of capital investments in tangible and intangible non-current assets of the agricultural industry of Ukraine in

January-December 2020 were built, which allows realizing the visualization of the presentation of the obtained scientific results. In addition, from the research results we obtained, we can draw a conclusion about the high attractiveness of medium-sized enterprises in the agrarian sector as an object for capital investment.

Keywords Agricultural Enterprises, Non-current Assets, Capital Investments, Regression Analysis, Agro-industrial Sector

1. Introduction

The variability of the market situation and the generally high level of uncertainty, which are characteristic of globalized economic systems, significantly complicate the functioning and interaction of all links of production and commercial networks. Such influence of unstable factors of the external environment significantly complicates the process of asset management of agricultural enterprises. At the same time, both the development of production, obtaining the maximum profit, and increasing the market competitiveness of the enterprise, in general, depends on the effectiveness of such management. As the practice of economic activity shows, in order to achieve the best results, it is necessary to monitor and constantly analyze the dynamics of the use, first of all, of non-current assets and, based on this, to implement measures to improve the planning system at the enterprise. All this determines the relevance of the analysis of the use of non-current assets and significantly increases its role in the economic process.

In this aspect, one of the most important components of this process is the management of the structure of non-current assets of agricultural enterprises, which is formed under the influence of specific features of agro-industrial production, specialization, production volumes, technologies and technical support, financial support of enterprises, etc. Accordingly, it can be stated that in the modern conditions of the operation of the agrarian business, the issue of ensuring a sufficient amount of assets of the enterprise in order to guarantee its effective functioning in the planned period becomes particularly relevant. At the same time, it is worth noting that the correctly formed structure of non-current assets of economic entities and their effective use in the process of agro-industrial production is reflected in the final financial results of the enterprises, contributes to the growth of cash flows involved in the production, and generally has an impact on the financial condition. Therefore, the objective need of agricultural enterprises is the need for a quality indicator of weighted decisions in the field of non-current asset management, the solution of which will contribute to the growth of the level of the financial potential of enterprises in the agrarian sector of the economy.

2. Literature Review

Effective management of non-current assets of agricultural enterprises largely depends on understanding its practical essence and role in the general mechanism of enterprise management. However, approaches to understanding the essence of such management are debatable and can be interpreted differently by different researchers. In particular, it is necessary to note the significant contribution to the study of practical aspects of enterprise asset management, which was made in the works of such scientists as N. Barabash [3], A. Boiar [4], R. Mann [5], I. Oleksandrenko [12], T. Shmatkovska [16], O. Stashchuk [17], V. Varenyk [19], V. Yakubiv [20], V. Zhuk [21] and others.

Separately, it is necessary to note the study of the methodical approach to the evaluation of the effectiveness of the use of non-current assets of enterprises, which was revealed in the works of N. Ershova [7]. In particular, the effectiveness of the use of factor analysis in asset management based on the diagnosis of deviations of elements of non-current assets from the planned level in order to increase the efficiency of their use has been proven. In our opinion, this approach is actually relevant, since agricultural enterprises are significantly dependent on timely financing of investments in fixed capital, which requires additional attention when planning financial activities.

Generally agreeing with the proposed approach, we consider it necessary to note that more complex and differentiated econometric methods of financial planning must be used for the efficiency of management of non-current assets of agricultural enterprises. This is due to the seasonal specificity of the activity of agricultural producers, which significantly affects the rhythm of financial flows in economic activity.

It is also worth paying attention to the research of I. Riepina [14] and N. Davydenko [5], which actualizes the issue of understanding the very essence of the enterprise`s assets only as a separate part of its general economic resources, which is chosen by it for the implementation of entrepreneurial activities under other specified conditions. The capital of the enterprise, in turn, is a source of investment in the process of activating resources, transferring them from public property to the property of the business entity in order to obtain added value. Therefore, it is the process approach that is able to reveal the internal dynamism of assets, which makes it possible to build a system of their management.

In addition, it is worth noting the research of A. Abdurakhmanova and M. Krempova [1], who claim that in order to understand the essence of the strategy of managing non-current assets, it is necessary to first understand the mechanism of profit generation in the enterprise. In fact, profit is recognized as such at the moment of transfer of all risks for the shipped products to the counterparty. Thus, the more such shipments, the higher the profit. That is, the

main task is to shorten to the minimum possible time the period from receiving the order to the shipment of finished products and receiving money for them. Thus, the task of managing the financial cycle of the production assets of the enterprise arises.

While generally agreeing with this statement, we nevertheless do not recommend focusing exclusively on the company`s profit in the process of managing its non-current assets, since the support of the production cycle at agricultural enterprises quite often requires financing, the payback of which goes beyond the planned annual period. Therefore, in our opinion, it is worth differentiating approaches to profit management and non-current asset management for agricultural enterprises.

Thus, we determine the need to update approaches to ensure effective diagnostic analysis of non-current assets of the enterprise, which currently requires additional research.

3. Materials and Methods

Stochastic relationships, which are characterized by the interaction of the average values of the factor and result characteristics, are called correlation-regression. Such connections are investigated using correlation-regression analysis.

The most important characteristic of the correlation relationship is the regression line, that is, the function that connects the average values of X and Y. The correlation-regression model of the relationship is a regression equation, which is generally written using the formula:

$$y_x = f(X) + \xi,$$

where: y_x – theoretical values Y;
$f(X)$ – regression line;
ξ – residual component.

If the dependent characteristics change more or less uniformly – the empirical line of connection (the line of group averages) approaches a straight line – the connection between them can be described using a linear function:

$$\hat{y} = a_0 + a_1 x,$$

where: a_0 *and* a_1 – parameters of the linear regression equation.

At the same time, the parameter a_1 – is the regression coefficient, considered as the effect of the influence of x on $\hat{y}$. It shows how many units, on average, the resulting characteristic $\hat{y}$ changes with a change in the factor characteristic x by one unit.

In the case of a direct connection between dependent features, b is a positive value, in the case of an inverse relationship, it is negative.

Parameter a – is the free term of the regression equation, it is the value of $\hat{y}$ at $x = 0$. If the limits of variation do not contain zero, then this parameter has only an estimated value, i.e. it shows the averaged influence on the outcome sign of factors not taken into account or not selected for research.

In paired correlation-regression analysis, the following functions (regression equations) are mainly used:

linear $y_x = a_0 + a_1 X$
parabolic $y_x = a_0 + a_1 X + a_2 X^2$
cubic $y_x = a_0 + a_1 X + a_2 X^2 + a_3 X^3$
degrees $y_x = a_0 * X^{a1}$
hyperbolic $y_x = a_0 + \frac{a_1}{X}$..

Statistical science examines the criteria for evaluating correlation-regression equations from the point of view of correlation and dispersion analyses, as well as error theory. In statistical calculations of correlation models, the most common methods of evaluating sample characteristics are Student`s (t-test) and Fisher`s (F-test) tests.

4. Results and Discussion

The presented research on the management of non-current assets of agricultural enterprises began with the study of the operational component of such assets. When studying the management of operating non-current assets, the issue of defining the concept and composition of operating non-current assets of agricultural commodity producers should be more clearly specified.

Operating non-current assets are that part of them that is directly used in the production and sale of the company`s products. At the same time, the operational non-current assets of agricultural enterprises include fixed assets, long-term biological assets, and intangible assets [6].

In the modern conditions of doing business in Ukraine, there is a high specific weight of operating non-current assets in the non-current assets of agricultural enterprises, which is caused by their production direction and sale of products in wholesale lots. In order to study the formed trend, the polynomial trend line of the specific weight of operating non-current assets in the composition of non-current assets of agricultural enterprises in Ukraine is displayed (Fig. 1).

The regression equation has the form: y = -0.2541x2 + 1.1062x + 81.703 and shows that the average specific weight of operating non-current assets in the composition of non-current assets of the agriculture of Ukraine was about 82% from 2012-2021. Each year, on average, the specific weight of operating non-current assets in the composition of non-current assets is reduced by 2.5% and also has an acceleration of the decline of 1.1%. At the same time, the dynamics of the acceleration of the fall of the specific gravity is low, and the approximation reliability coefficient (R^2) is 0.84, that is, the reliability and adequacy of the detected and formed conclusions are quite high.

It should be noted that, according to the realities of the Ukrainian agrarian economy, there is a rather high degree of wear and tear on operational non-current assets used by

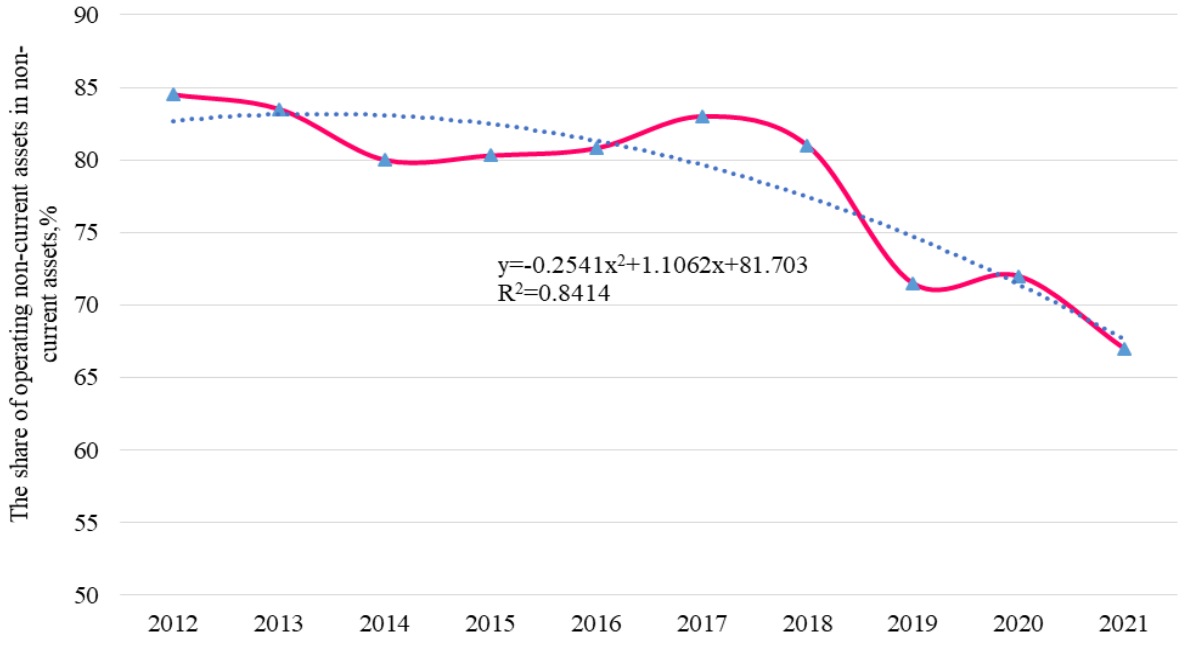
agricultural producers. According to the results of the analysis of the created situation, we found a clear trend regarding the increase in the rate of wear and tear of operating non-current assets of agricultural enterprises of Ukraine (Figure 2).

The obtained regression equation y = 2.0819x + 27.63 shows that for the period 2012 - 2021, the rate of wear and tear of operating non-current assets of enterprises in the agricultural sector of Ukraine increased by 2 percentage points every year. Note that according to the results of the calculations, the reliability and adequacy of the formed conclusions can be recognized as average (at the same time, the approximation reliability coefficient is close to 0.5) due to the high level of fluctuation of the indicator in the last year. In the forecast for the end of 2022, subject to the preservation of existing trends, the degree of wear and tear of operating non-current assets of agricultural enterprises in Ukraine may reach 70%.

In our opinion, the high level of wear and tear of operational non-current assets of agricultural enterprises and the significant lack of funds for their renewal are associated with a significant disproportion of prices for agricultural and industrial products in Ukraine, which requires the development of a number of measures for state regulation of the formed disparity.

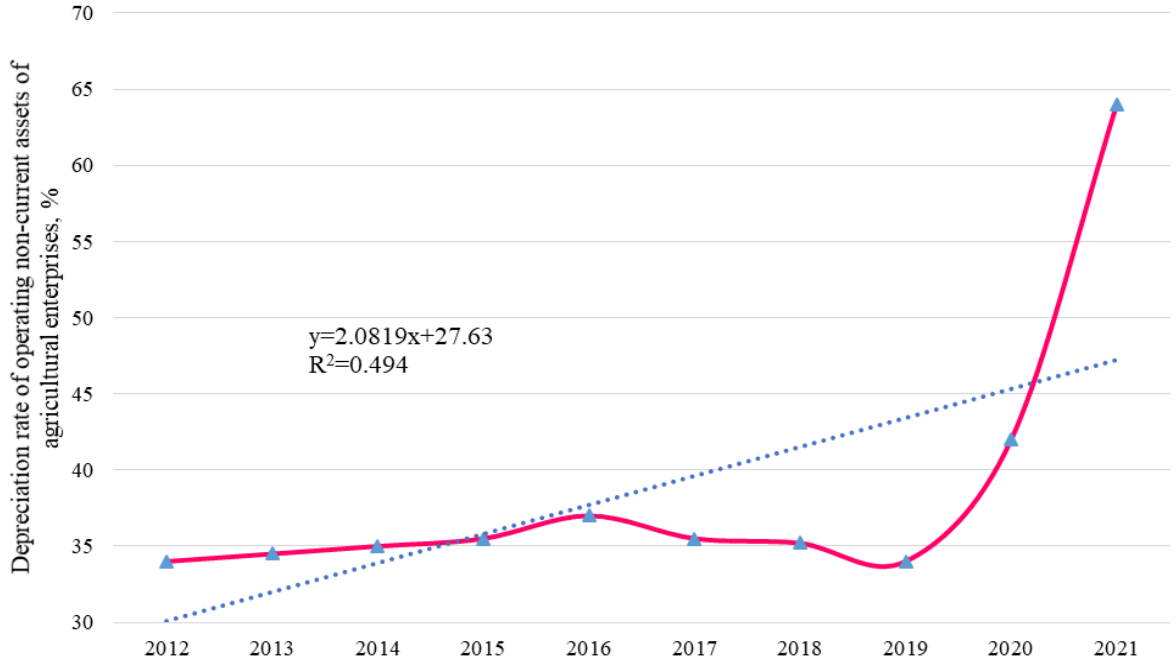
In agriculture, the formation of operational non-current assets occurs mostly at the expense of own sources, which increases indicators of financial stability. In the case of a high degree of wear and tear on fixed assets, agricultural producers in Ukraine are forced to resort to lending, which is currently available mostly for large agribusiness.

Also, in the management of operational non-current assets of agricultural enterprises, it should be taken into account that operational non-current assets in agriculture also include living organisms, namely animals (working and productive livestock) and plants (perennial plantations) [8,13]. The value of these types of assets is reflected in the financial statements of enterprises as long-term biological assets, up to a certain period, which depends on physiological processes, not only does not decrease in the process of use but also increases.



Source: calculated by the authors based on [18]

Figure 1. Polynomial trend model of the specific weight of operating non-current assets in the composition of non-current assets of agricultural enterprises of Ukraine, as of the end of the year



Source: calculated by the authors based on [18]

Figure 2. Linear trend model of the depreciation rate of operating non-current assets of agricultural enterprises in Ukraine for 2012-2021, as of the end of the year

Table 1. The value of long-term biological assets of agricultural enterprises of Ukraine for 2019-2021

Indicator	2019	2020	2021	2021 (+/-) to 2019
The cost of long-term biological assets at the end of the year, million UAH	7481.5	7658.3	8099.8	618.3
The specific weight of long-term biological assets in the composition of assets, %	2.0	2.6	1.4	-0.6
The specific weight of long-term biological assets in non-current assets, %	6.2	6.7	4.8	-1.4
The specific weight of long-term biological assets in the composition of production non-current assets, %	8.6	9.3	7.2	-1.6

Source: calculated by the authors based on [18].

According to the results of the analysis of the Table 1 established that the value of long-term biological assets of agricultural enterprises of Ukraine increased during the research period. However, at the same time, there was a simultaneous reduction in the specific weight of these assets, both as part of the total assets of enterprises and as part of non-current assets. That is, it can be concluded that the increase in the value of biological assets in agricultural enterprises is caused solely by the increase in prices for finished products and an increase in their cost price. In addition, such a reduction in specific weight is caused, first of all, by a decrease in the cost of long-term biological assets. In order to assess this trend, we analyzed the dynamics of livestock and poultry in Ukraine (Table 2).

As we can see, during the analyzed period (Table 2), there is a clear trend towards a general decrease in livestock and poultry in agricultural enterprises of Ukraine. In particular, over the past eight years, the number of cattle has decreased annually by an average of 135.7 thousand head, or by 3.5%; pigs – by 193.2 thousand head, or by 2.6%; sheep and goats – by 278.1 thousand heads, or by 2.3%. An exception is the poultry population, the number of which during the studied period decreased insignificantly, and its values fluctuated both in the direction of decrease and increased in individual years. However, the poultry population is part of current biological assets, so it can be said that there is a general crisis trend in the field of long-term biological assets in agricultural enterprises of Ukraine. The explanation for this is that the devaluation processes, which lead to an increase in the cost of fodder in connection with the growth of world grain prices, while the prices of meat products have remained practically unchanged over the past three years.

The generated results indicate the growth of the value of long-term biological assets of agricultural enterprises of

Ukraine with the simultaneous reduction of their specific weight both in the composition of aggregate assets and in the composition of non-current assets. That is, the increase in the value of this type of assets is caused exclusively by the increase in prices and cost. In addition, the specified reduction in specific weight is caused primarily by a decrease in the value of long-term biological assets of the livestock industry.

When forming operational non-current assets of agricultural enterprises, it should be borne in mind that the use and reproduction of long-term biological assets are limited in time. At the same time, these limitations are due to their biological properties during operation. However, the specified type of assets with scientifically based formation (for example, the development of selection work in enterprises, which will increase the specific weight of intangible assets) can extend the period of their useful use.

Such a feature of agricultural production as seasonality causes uneven use of certain types of operating non-current assets during the year. Also, the technological features of the cycle of agricultural production determine the short-term use of some types of agricultural machines during the year - tractors, combines, agricultural machines, etc.

At the same time, finished agricultural products enter the next production cycle as a means of production (animal offspring, seeds, seedlings), and, as a result, there are peculiarities in the formation of operational fixed assets, and the accumulation and reimbursement of a part of operational biological assets occurs naturally [15].

An important aspect related to the support of enterprises in the agrarian sector of the economy is targeted programs that provide for the financing of certain types of activities or stimulation of the acquisition of certain types of assets by agricultural enterprises [2].

With the presence of significant personnel, intellectual and technological potential, and the availability of budget funding, it can be noted that there are significant reserves for the development of selection, genetic and breeding work in Ukraine. Therefore, state support for the development of breeding and breeding work in Ukraine should be based on a systematic approach and well-established project management in the state administration.

We analyzed the changes that took place in such support programs for agricultural producers in Ukraine for the period 2017-2020 (Fig. 3).

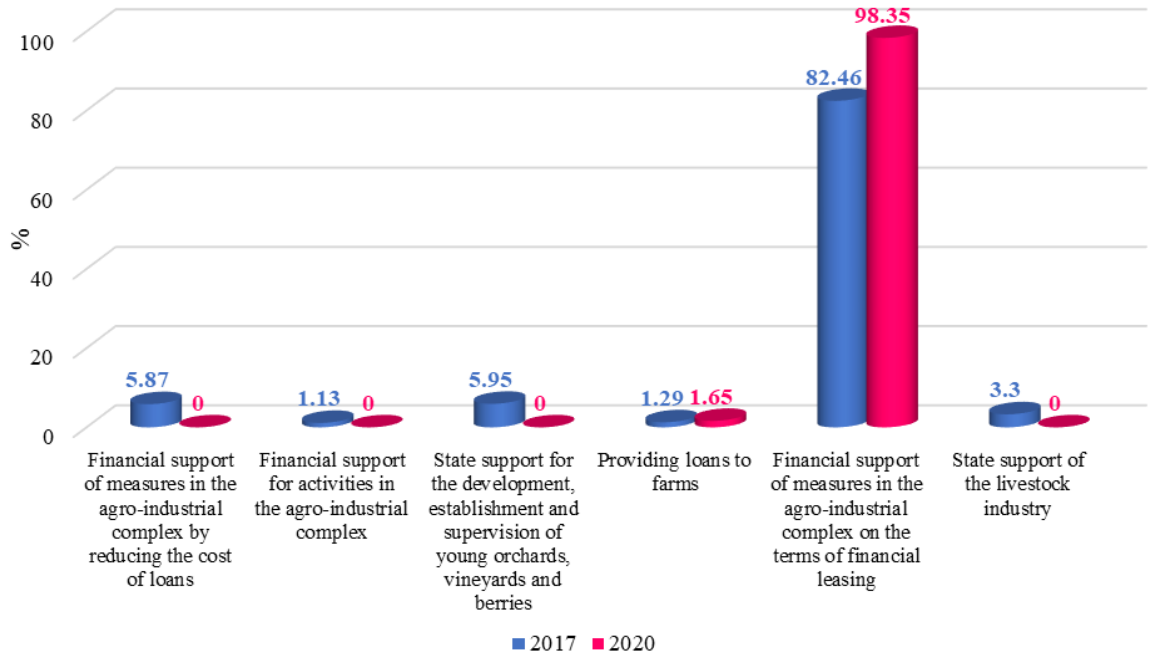
As we can see, during the analyzed period, the main specific weight of state financing of agricultural sector support programs was concentrated on financing the acquisition of assets by agricultural enterprises under leasing conditions. This share in the total volume of state financing increased from 82.46% in 2017 to 98.35% in 2020. Expenditures were reduced in all other areas of state programs, and only the area of preferential lending to farms also increased, but in the total structure of expenses it occupied only 1.65% in 2020 Thus, it can be concluded that the state is interested in financing the acquisition of non-current assets by agricultural enterprises, which should lead to the renewal of the production base and a general increase in the efficiency of doing business by agricultural producers.

At the same time, the most important criterion for assessing the effectiveness of asset accumulation for agrarian enterprises is the total volume of investments in the field of agriculture and the dynamics of their changes (Fig. 4).

Table 2. Livestock and poultry in Ukraine for 2014-2022, as of January 1

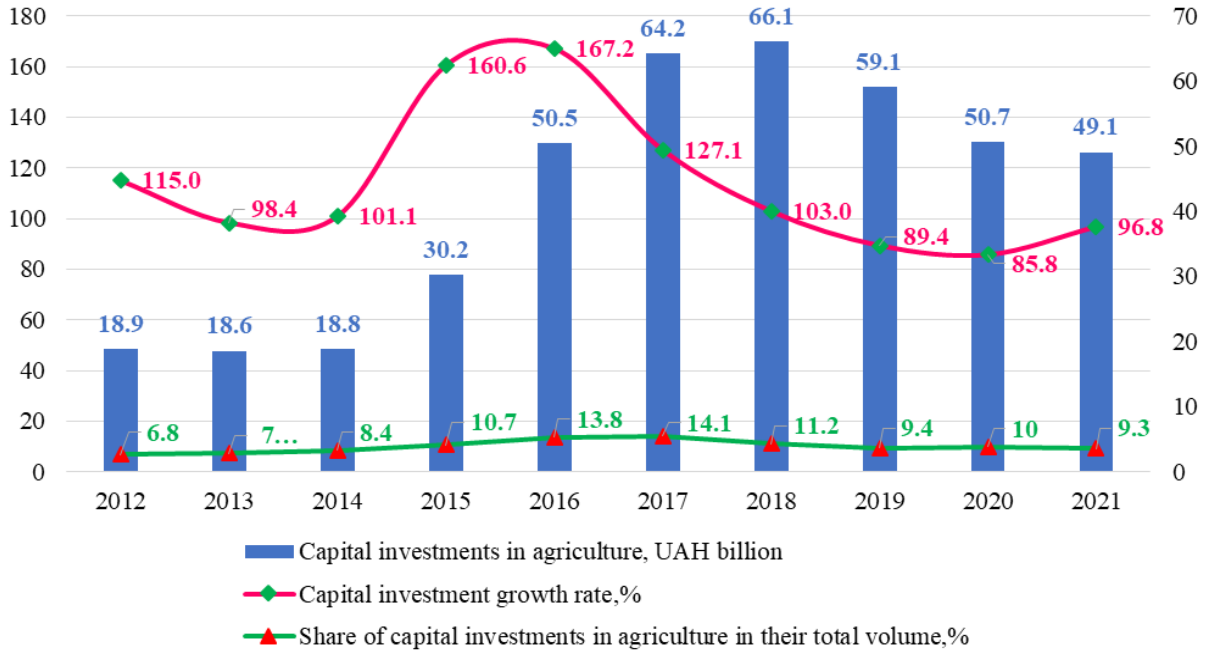
Years	Cattle, thousand heads	Pigs, thousand heads	Sheep and goats, thousand heads	Poultry, million heads
2014	3,884,0	7,350,7	1,371,1	213,3
2015	3,750,3	7,079,0	1,325,3	204,0
2016	3,674,9	6,688,9	1,311,9	202,4
2017	3,682.3	6,669.1	1,314.8	201.7
2018	3,573.7	6,108.6	1,315.2	204.8
2019	3,332.9	6,025.3	1,268.6	211.7
2020	3,117.7	5,730.4	1,207.9	220.5
2021	2,874.0	5,876.2	1,140.4	200.6
2022	2,662.8	5,611.9	1,093.0	202.2
Average absolute growth	-135.7	-193.2	-278.1	-1.2
Average growth rate, %	-3.5	-2.6	-2.3	-0.6

Source: calculated by the authors based on [18]



Source: calculated by the authors based on [18]

Figure 3. The structure of the use of funds under budget programs to support the development of agro-industrial complex enterprises, provided for by the Ministry of Agrarian Policy in the draft of the State Budget of Ukraine in 2017 and 2020



Source: calculated by the authors based on [18]

Figure 4. Dynamics of capital investments in agriculture in Ukraine for 2012-2021

Based on the results of the study, it was established that during the analyzed period, investments in the agricultural sector had a growing trend for a long time. However, in 2019, their total volume decreased from UAH 66.1 billion to UAH 59.1 billion. At the same time, the more significant drop in investments that occurred in 2020-2021 was due to the crisis impact of the COVID-19 pandemic, which resulted in a general reduction in investment activity in the markets. However, if we evaluate the growth rate of investments in the agricultural sector, their reduction has

been observed since 2017, when the growth rate decreased from 167.2 to 127.1%. This indicates problems with the financing of the agricultural sector in relation to the renewal of its production base, which may threaten a general decrease in the efficiency of the functioning of agricultural enterprises in the future [11]. In addition, if we pay attention to the share of capital investments in agriculture in their overall structure by the end of the year, it can be noted that this indicator has increased relative to the beginning of the period from 6.8 to 9.3%. However, in 2016 this value was 13.8%, and in 2017 – 14.1%. All of the above is evidence of a fall in the profitability of investments in the agricultural sector from the mid-2010s to the present time.

The dynamics of capital investments and the level of profitability according to the size of agricultural enterprises in Ukraine are considered on the basis of the table 3. We note that the analysis of trends in capital investments by size among agricultural and enterprises of other types of economic activity indicates high investment activity in the agricultural sector, compared to other market sectors. Analyzing the data for 2012-2021, we observe positive changes in investment in the agricultural sector of Ukraine because it increased for all agricultural enterprises in terms of size, especially large – by 3 times, small - by 3.4 times, which have the highest rate of growth, medium - 2.2 times. A comparison of the level of profitability by the size of agricultural enterprises in dynamics indicates a significant increase in medium-sized enterprises in the agricultural sector and a decrease in large and small ones.

Table 3. Dynamics of capital investments in enterprises of the agricultural sector of Ukraine and their level of profitability in 2012 - 2021 by the size of agricultural enterprises

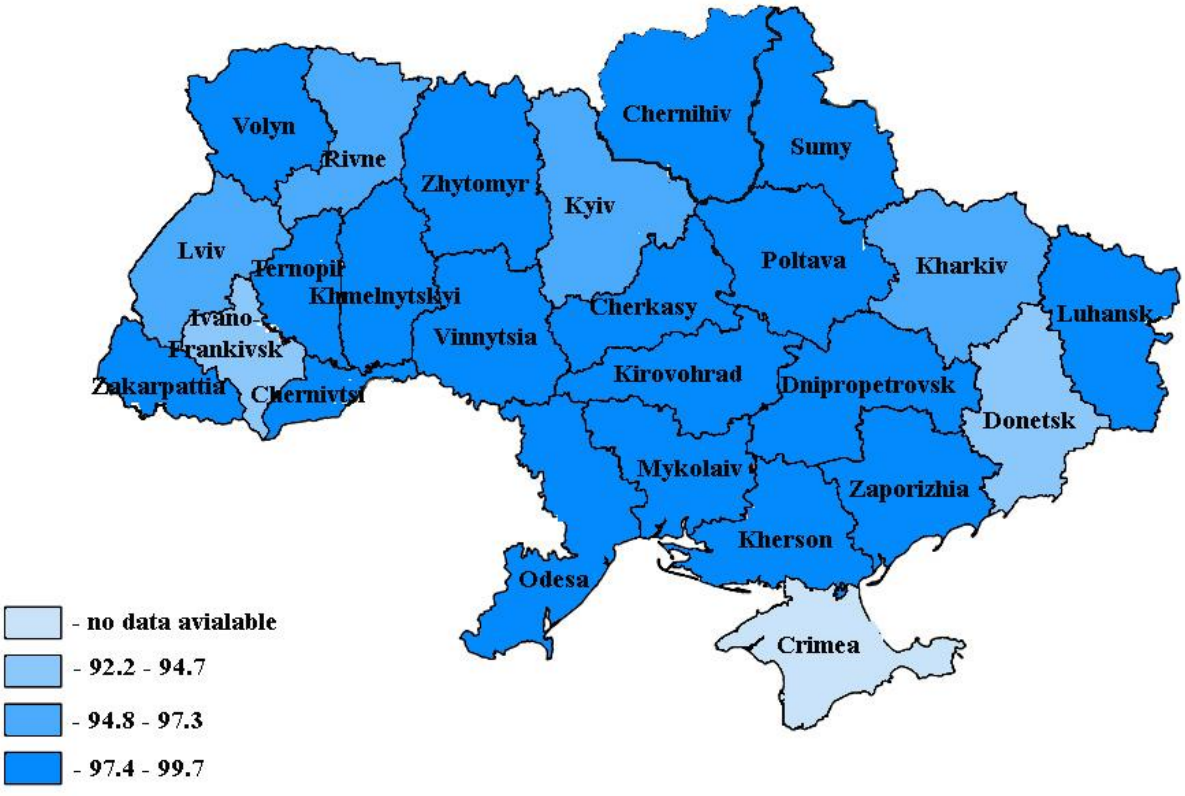
Years	Sizes of agricultural enterprises, million UAH			
	Big	**Middle**	**Small**	**(including micro-enterprises)**
2012	2882.5	11122.7	5200.6	1336.0
2013	2242.3	11259.9	5417.0	1285.9
2014	1711.8	11020.5	5850.1	1532.3
2015	3798.3	15141.8	10858.4	2569.7
2016	2696.4	25630.0	21993.2	6024.4
2017	4343.3	32501.4	27239.4	6422.3
2018	8110.1	33723.5	24742.8	6097.7
2019	10936.0	29653.7	19320.4	3395.7
2020	8548.4	25355.4	17459.7	2954.8
2021	8647.5	24887.5	17582.3	2978.7
Ratio of 2021 to 2012,%	in 3 times	in 2,2 times	in 3,4 times	in 2,2 times
The level of profitability (unprofitability) of all activities of enterprises in the agrarian sector, %				
2012	24.6	13.1	16.7	13.6
2013	15.3	6.3	8.1	7.0
2014	14.9	6.9	9.8	6.6
2015	45.4	23.4	32.4	30.9
2016	24.7	21.6	30.0	26.5
2017	20.5	15.4	15.6	7.7
2018	21.2	14.3	10.9	7.9
2019	6.1	23.6	9.6	8.9
2020	12.4	18.2	5.4	5.1
2021	14.9	18.9	9.8	8.7
Deviation in 2021 from 2012, +/-	-9.7	5.8	-6.9	-4.9

Source: calculated by the authors based on [18]

According to the results of the analysis of the relationship between the size of capital investments and the level of profitability of enterprises in the agrarian sector of Ukraine, such interdependence was found in the studied period for medium-sized and small agricultural enterprises. In particular, for medium-sized enterprises, the smallest amount of capital investment in 2014 has a certain impact on low profitability this year (6.9%), and vice versa – a significant amount of capital investment in 2019 obviously had an impact on high profitability in 23.6 % in this year. In part, the same trend is characteristic of small enterprises in the agricultural sector of Ukraine in the studied period.

It was found that indicators of the sustainability of capital investments, the autonomy of financing sources, and distribution of funds in assets between current and fixed assets, on the one hand, and indicators of the sustainability of agricultural production, on the other hand, are characterized by a strong relationship. This indicates the need to increase the number of investments (including capital) in the agricultural sphere of Ukraine, the need to stabilize sources and optimize the capital structure and ensure the effective distribution of investments for the formation of assets of agricultural commodity producers according to their size. These trends are quite acceptable, since the fact making a profit allows you to direct financial resources to capital investments, and the achievement of the specified result depends on the stability of the financial condition of agricultural enterprises.

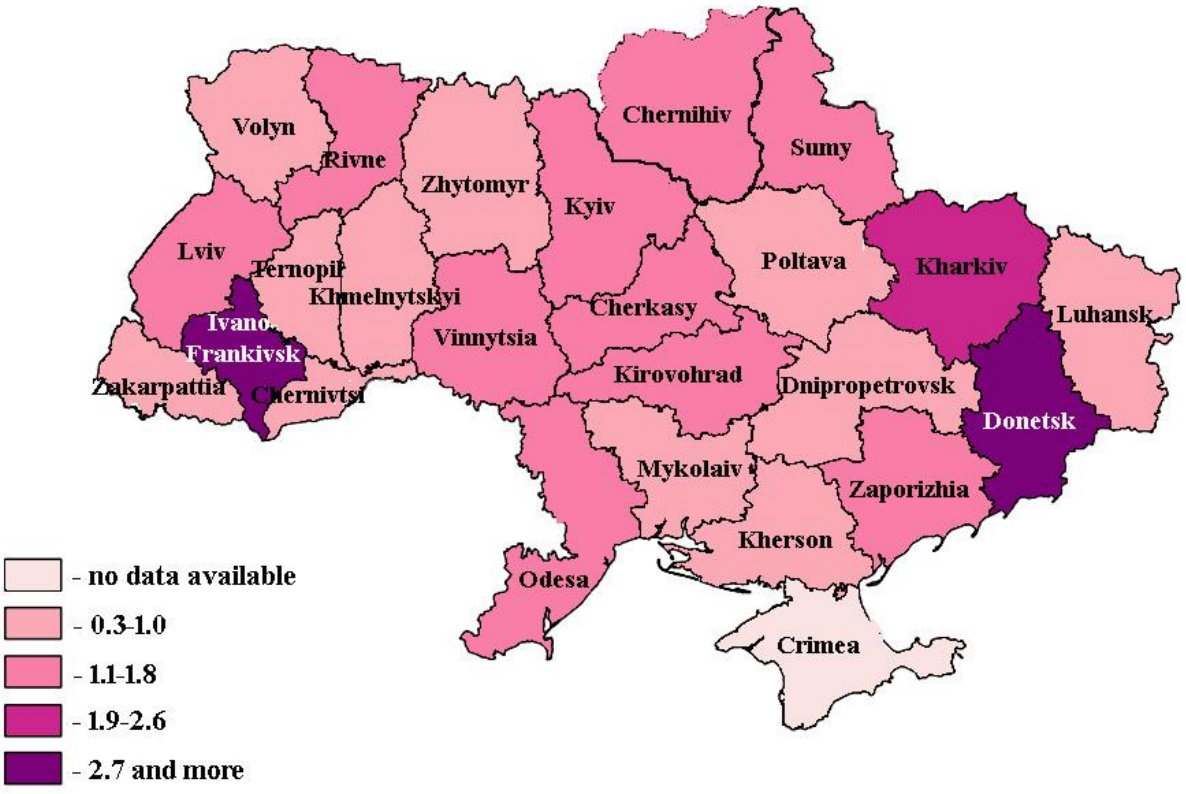
According to the results of our research, cartograms of the grouping of regions of Ukraine by the specific weight of capital investments in tangible and intangible non-current assets of the agricultural industry of Ukraine in January-December 2020 were built, which allows realizing the visualization of the presentation of the obtained scientific results (Figs. 5, 6). Thus, it was established that most regions of Ukraine invest 97.4-99.7% of capital investments (from their total amount) in tangible non-current assets. The smallest is the group of regions of Ukraine, where the specific weight of capital investments in tangible non-current assets is within 92.2-94.7% of their total amount (Fig. 5). Such is only Ivano-Frankivsk and Donetsk regions of Ukraine. Accordingly, in 2020, the maximum specific weight of capital investments in the intangible assets of agribusiness enterprises is monitored in these regions of Ukraine – from 2.7% (Fig. 6).



Source: calculated by the authors based on [18]

*Data exclude the temporarily occupied territory of the Autonomous Republic of Crimea, the city of Sevastopol and for a part temporarily occupied territories in the Donetsk and Luhansk regions

Figure 5. Cartogram of the grouping of regions of Ukraine by the specific weight of capital investments in tangible non-current assets of the agricultural industry in January-December 2020, in % of the total volume of capital investments of the agricultural industry in the region*



Source: calculated by the authors based on [18]

*Data exclude the temporarily occupied territory of the Autonomous Republic of Crimea, the city of Sevastopol and for a part temporarily occupied territories in the Donetsk and Luhansk regions

Figure 6. Cartogram based on the results of the grouping of the regions of Ukraine by the specific weight of capital investments in intangible assets of the agricultural industry in January-December 2020, in % of the total volume of capital investments of the agricultural industry in the region*

It should be noted that a feature of the formation of non-current assets in agriculture is the absence or insignificant specific weight of intangible assets. After all, in fact, in the industry, operational intangible assets are represented, as a rule, by the registration of rights to lease land plots. Given the perspective of the activity, it would be expedient to include in their composition, also the results of breeding innovation work and the value of the results of other scientific research in crop and animal husbandry.

In addition, in most cases, agricultural enterprises of Ukraine do not account, or do not fully account for intangible assets, or do not evaluate them properly. An example of this can be various computer programs that are used but are often not properly reflected in the financial statements of agricultural enterprises.

The results of the grouping of the regions of Ukraine by the specific weight of capital investments in the intangible assets of the agricultural industry of Ukraine in January-December 2020 are presented in the form of a cartogram (Fig. 6). As the results of the study show, the specific weight of capital investments in this group of non-current assets in the agricultural sector of Ukraine is quite low and mainly ranges from 1 to 1.8%. More than 1.9% of such expenses are tracked only in the Kharkiv region, where large agricultural holdings are located, and relatively more are invested in non-current intangible assets in the Donetsk and Ivano-Frankivsk regions of Ukraine.

5. Conclusions

So, the features of non-current asset management in agriculture are determined by certain features regarding their use, which include the slowness of capital movement, uneven loading, the irrationality of formation, and low liquidity.

From the research results we obtained, we can draw a conclusion about the high attractiveness of medium-sized enterprises in the agrarian sector as an object for capital investment. Indicators of output and capital investment in agriculture in Ukraine have a positive upward trend. At the same time, there are also negative aspects that are characteristic of the agricultural sector, namely, the material and technical base of agribusiness enterprises need significant updating. Therefore, before using the

provided capital investments, it is necessary to appropriately prioritize the key areas of funding.

Based on the results of the analysis, we established that the key direction of state financing of agricultural sector support programs was the promotion of asset acquisition by agricultural enterprises under leasing conditions, which accounted for 98.35% of all funds allocated by the state in 2020. At the same time, a decrease in the volume of investments in the agricultural sector was recorded, which was observed in 2019 and indicates problems with their payback. However, in our opinion, taking into account the impact of the COVID-19 pandemic on investment activity in 2020-2021, for which statistical financial data is insufficient, requires additional clarification. The general drop in the level of profitability of agricultural enterprises, which also began in 2018-2019, is a confirmation of the problem with the return on investment. Therefore, it is possible to state the existence of problems with the profitability of the agricultural sector in Ukraine over the past three years.

In view of this, we consider research on ensuring the rationalization and increasing the efficiency of the use of non-current assets of the agricultural industry, as well as on the formation of a process model for the management of operational non-current assets of agricultural enterprises and the establishment of project management in the state administration in the development and financing of programs to support the agricultural sector of Ukraine, promising.

REFERENCES

[1] Abdurakhmanova, A. E., Krempova, N. L. “Optimization of asset management enterprises,” *Culture of the peoples of the Black Sea region*, Vol. 253, pp. 10–13, 2012.

[2] Abuselidze, G., Bilyak, Y., Mračkovskaya, N. K. “Methodological and Practical Issues of the Organization of the Personnel of the Enterprise and the Implementation of Changes to its Structure,” *Studies of Applied Economics*, 39(8), 2021. DOI: 10.25115/eea.v39i8.4449

[3] Barabash, N., Pashkuda, T. “Forecasting changes in the structure of assets and capital of agricultural enterprises,” *Economics & Education*, Vol. 6(2), pp. 52-57, 2021. DOI: 10.30525/2500-946X/2021-2-9.

[4] Boiar, A. O., Shmatkovska, T. O., Stashchuk, O. V. “Towards the theory of supranational finance,” *Cogent Business & Management*, Vol. 5(1), 1482594, 2018. DOI: 10.1080/23311975.2018.1482594.

[5] Davydenko, N. M. “Transformation of financial management of agricultural enterprises in conditions of contemporary challenges,” *Economy of agro-industrial complex*, Vol. 2, pp. 63-68, 2016.

[6] Dziamulych, M., Shmatkovska, T., Krupka, M., Yastrubetska, L., Vyshyvana, B., Derevianko, S. "Introduction of NSFR Ratio in the Activities of Commercial Banks in Ukraine," *Universal Journal of Accounting and Finance*, Vol. 9(6), pp. 1544-1550, 2021. DOI: 10.13189/ujaf.2021.090631.

[7] Ershova, N. I. “Improvement of the methodical approach to the analysis of working capital as a factor of the efficiency of an industrial enterprise,” *Bulletin of the National technical "KhPI" University. Issue “Actual problems of management and financial and economic activity of the enterprise”,* Vol. 45(951), pp. 37-46, 2012.

[8] Koval, V., Mikhno, I., Udovychenko, I., Gordiichuk, Y., Kalina, I. “Sustainable natural resource management to ensure strategic environmental development,” *TEM Journal*, Vol. 10(3), pp. 1022-1030, 2021. DOI: 10.18421/TEM103-03.

[9] Lukman, E., Nawangwulan, W., Hana, L. "The Millennial Farmers' Interest in Succeeding the Family Agriculture for Hydroponic Application in Garut District, West Java Indonesia," *Universal Journal of Agricultural Research*, Vol. 10(3), pp. 266-274, 2022. DOI: 10.13189/ujar.2022.100308.

[10] Mann, R., Martinovich, V., Yakusheva, O. “The peculiarities of working capital management at agroindustrial enterprises of Ukraine,” *Problems and Perspectives in Management*, Vol. 16(2), pp. 260-268, 2018. DOI: 10.21511/ppm.16(2).2018.24.

[11] Novikova, O., Pankova, O., Chaliuk, Y., Kasperovich, O. “The Potential of Digitalisation and Social Dialogue in Ensuring Post-Pandemic Labour Market Sustainability: Priorities for Ukraine,” *Studies of Transition States and Societies*, Vol. 13(2), pp. 70-85, 2021.

[12] Oleksandrenko, I. V. “Methodical approaches to the diagnosis of current assets of the enterprise,” *Business Inform*, Vol. 2, pp. 277-283, 2014.

[13] Ostapenko, R., Herasymenko, Y., Nitsenko, V., Koliadenko, S., Balezentis, T., Streimikiene, D. “Analysis of production and sales of organic products in Ukrainian agricultural enterprises,” *Sustainability*, Vol. 12(8), pp. 3416, 2020. DOI:10.3390/su12083416.

[14] Riepina, I. M. “Assets of the enterprise: categorical analysis and systematology,” *Formation of the market economy*, Part 2, pp. 548–553, 2008.

[15] Rozskazov, A. G., Chaliuk, Y. O., Anishchenko, V. O., Smal, I., Matviichuk, O. “Implementing of the COM-B Model in In-Service Training of Civil Servants as a Prerequisite for Effective Public Governance,” *Academic Journal of Interdisciplinary Studies*, Vol.10(3), pp. 241-252, 2021. DOI: 10.36941/ajis-2021-0080.

[16] Shmatkovska, T., Dziamulych, M., Vavdiiuk, N., Petrukha, S., Koretska, N. Bilochenko A. “Trends and Conditions for the Formation of Profitability of Agricultural Enterprises: On the Case of the Lviv Region, Ukraine,” *Universal Journal of Agricultural Research*, Vol. 10(1), pp. 88-98. DOI: 10.13189/ujar.2022.100108.

[17] Stashchuk O., Shmatkovska T., Dziamulych M., Nikolaeva A., Mostovenko N., Zabedyuk M. Ishchuk L. “Assessment of joint stock companies finance security risks in Ukraine,” *Accounting*, Vol. 6(7), pp. 1181-1192, 2020. DOI: 10.5267/j.ac.2020.9.009.

[18] State Statistics Service of Ukraine, Online available from http://www.ukrstat.gov.ua.

[19] Varenyk, V. M. "Diagnostic analysis of cash flows of the national economy," *Economic Nobel Herald*. Vol. 1(7), pp. 87–94, 2014.

[20] Yakubiv, V., Sodoma R., Hrytsyna, O., Pavlikha, N., Shmatkovska, T., Tsymbaliuk, I., Marcus, O., Brodska, I. "Development of electronic banking: a case study of Ukraine," *Entrepreneurship and Sustainability Issues*. Vol. 7(1), pp. 219-232, 2019. DOI: 10.9770/jesi.2019.7.1(17).

[21] Zhuk, V., Bezdushna, Y., Tyvonchuk, S. "Improvement of IFRS application policy in relation to land assets of agricultural enterprises," *Independent journal of management & production*, Vol. 10(7), pp. 702-724, 2019. DOI: 10.14807/ijmp.v10i7.889.