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ECONOMIC POTENTIAL OF AGRARIAN ENTERPRISES AS AN IMPORTANT DEVELOPMENT FACTOR

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Abstract

The paper aimed to present the evaluation process of the economic potential of agrarian enterprises and its links to the financial results of such enterprises in Ukraine. The study used the data of financial statements of different types of agrarian enterprises of Ukraine and the statistical data provided by the Ministry of Agriculture. The authors proposed updated definitions of "economic potential of the enterprise" and "economic potential of the agricultural enterprise". During the analyzed period, the agricultural holdings had a relatively lower rate of economic potential, than farms. The production of cereals and leguminous has decreased by 1.8%. The meat production's trend line predicted its gradual increase and milk production in 2020-2021 would decline up to 10 million tons if market conditions will stay the same. As a conclusion, the management of the economic potential of agricultural holdings and limited liability companies was more effective, than the one at farms, as bigger producers effectively restored and consistently kept their profitability after crisis reductions.

Key words*: economic potential, enterprise's potential, agricultural production, agrarian formations, agricultural sector.*

INTRODUCTION

The agricultural production of Ukraine is one of the major sources of state revenues, as well as an important tool for supporting national security by providing its population with high-quality food and other important goods and services.

The agricultural enterprises form the basis of the agrarian sector of Ukraine, where each one of them is a part of a dynamic economic system and its base component. The support and development of all forms of agricultural production require attention from both public and private institutions, including scientific and educational ones.

The economic development of Ukraine has been influenced by the significant internal and external challenges, the consequences of which are market destabilization, weakening the production capacity of different industries, and reducing the purchasing power of consumers.

To maintain the stable market positions of Ukrainian agricultural producers a deep study of agrarian formations and their economic potentials is required.

Studying the economic potential of agricultural formations involves an overview of its theoretical basis, in particular, scientific trends, scientist's findings, previous results, and key definitions.

Existing approaches to the system of economic potential of the enterprise could form three dominant concepts:

- resource concept, according to which the economic potential is a combination of different types of resources;
- functional concept, where the potential is regarded as a set of functions providing of capacities;
- complex concept of resources and targets, according to which the potential is a set of resources and capabilities to achieve concrete results (Prohorova & Bozhanova, 2011).

In the context of the above, the next definitions of the essences of different concepts are given. Thus, Ansoff I. has expressed the original idea about the nature of the economic potential of the enterprise. He linked the potential of the enterprise with the results of strategic management. The scholar noted that "the potential of the company at the beginning of the production cycle consists of financial, commodity, human resources, and information; at the end of the production cycle it is represented as manufactured profitable

products, and services combined with the rules of social behavior enabling an organization to consistently achieve their goals" (Ansoff, 1984).

Kotler F. has expressed a similar idea, explaining the economic potential of the enterprise as the potential of sales that enterprise can do. In addition, he had emphasized that only the demand for the type of products sold by the company may limit the potential of the company sales (Kotler & Zaltman, 1971).

Lepiokhin O. suggested the determination of the economic potential of the enterprise within the same concept. He focused on the idea that the economic potential should be determined as "the aggregate capacity of available economic resources to provide the maximum production of goods and services that are in high demand in the market for profit and meeting social needs". The peculiarity of this researcher's view is that he sees only economic resources as the components of economic potential (Lepiokhin, 2009).

Osipov P. had focused on the study of the links between economic and resource potential and determined the following: "the economic potential is the maximum of resource and production potentials based on the maximum efficiency of elements, forming these resource and production potential" (Osipov, 2004). Using the resources of the enterprise without targeted results in this definition shows that the author also prefers the resource concept.

Summarizing the views of scientists, we offer to use the next definition of the economic potential of the enterprise. It is a complex of resources and capabilities of the enterprise that could be mobilized as needed ensuring the sustainable development of the enterprise through the cooperation of the elements of its potential to provide the market with popular products and services.

The economic potential of an agricultural enterprise is a synthesis of such groups of components as technological and production components, financial and economic components, personnel and social components, biological and ecological components, and unidentified ones. The unidentified components are those have not been included in the named groups of components, but are important for a particular enterprise. Therefore, the economic potential of an agricultural enterprise is the integration of technology and production, financial and economic, personnel and social, biological and ecological, and unidentified components providing maximum profitability of the enterprise within the concept of sustainable development.

MATERIALS AND METHODS

In order to characterize the economic potential of agrarian enterprises of Ukraine production of cereals, leguminous, milk, meat, and activities of 8 agricultural producers were studied. Calculations of the economic potential of an enterprise required the collection of statistical data on its components. To assess it we have formed a system of indicators in accordance with grouping principles of economic potential components, in particular, the technological and production component of economic potential can be represented by such indicators (Taraniuk, 2014) (Table 1).

Table 1. Indicators and symbols of technological and production components of the economic potential of agricultural enterprises

Indicators	2016	2017	2018
Produce	P_1	P_2	P_3
Work-in-progress	W_1	W_2	W_3
Goods and services	G_1	G_2	G_3
Inventories	I_1	I_2	I_3
Accounts receivable	AR_1	AR_2	AR_3
Accounts payable	AP_1	AP_2	AP_3

Source: proposed by authors

Next step is to transform the collected data into a homogeneous group. To do it we have compared the data with the benchmark indicator, which is the maximum indicator of each row (1).

$$Yi = \frac{Xi}{Xei} \quad (1),$$

Y*i* - adjusted indicator;
X*i* - indicator of row *i*;
Xe*i* - benchmark of row *i*, Xe*i*=1.

Table 2 presents the procedures of transformation of technological and production components of economic potential.

Table 2. Transformation of technological and production components of economic potential

Indicators	2016	2017	2018
Produce	P_1/P_3	P_2/P_3	1
Work-in-progress	W_1/W_2	1	W_3/W_2
Goods and services	1	G_2/G_1	G_3/G_1
Inventories	I_1/I_2	1	I_3/I_2
Accounts receivable	AR_1/AR_3	AR_2/AR_3	1
Accounts payable	1	AP_2/AP_1	AP_3/AP_1

Source: compiled by authors

The suggested approach helps to calculate the integrated indicator of each component and the aggregated economic potential indicator of studied agricultural enterprises.
The next step of the calculation process is the calculation of the index of each component by using the formula below. As an example, the index of technological and production components in 2017 (2):

$$TP_{2017} = \sqrt{\prod_{i=1}^{m} Y2017} \quad (2)$$

After the calculation of components' indexes, we have to summarize the indicator of the economic potential of the enterprise. The components of economic potential could have different weights, and therefore it is needed to determine the coefficient for every component. To achieve it, the focus group of experts of agribusiness and economists has evaluated the significance of every component for such analysis. The results of their evaluation are in Table 3.

Table 3. Coefficients for the economic potential components of agricultural enterprises based on expert opinions (example)

The components of the economic potential	Points	Coefficient (k)
Technology and production	35	0.35
Personnel and social	20	0.2
Financial and economic	22	0.22
Biological and ecological	18	0.18
Unidentified	5	0.05
Total	100	1

Source: compiled by authors

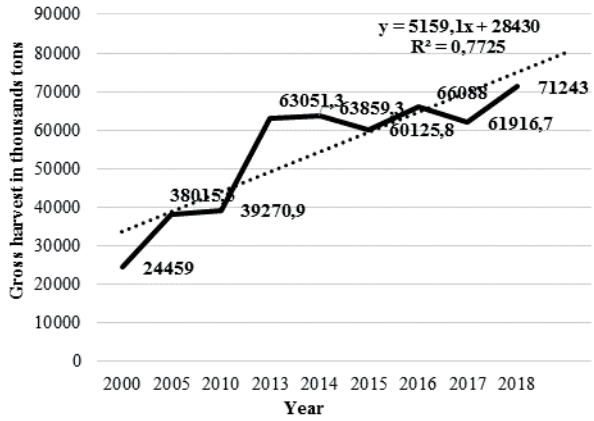
After the determining the coefficients and component values of economic potential, a basic formula for the integrated indicator of economic potential could be designed (3):

$$E_{pl} = k_{TP} \times TP + k_{PS} \times PS + k_{FE} \times FE + k_{BE} \times BE + k_U \times U \quad (3)$$

TP, PS, FE, BE, U - component values of economic potential;
k_{TP}, k_{PS}, k_{FE}, k_{BE}, k_U - coefficients of components of economic potential.

RESULTS AND DISCUSSIONS

To evaluate the dynamics of cereals and legumes cultivation in Ukraine we have designed a trend line based on the statistical data of 2000-2018 (Figure 1).



Source: created by authors using (Prokopenko, 2018)

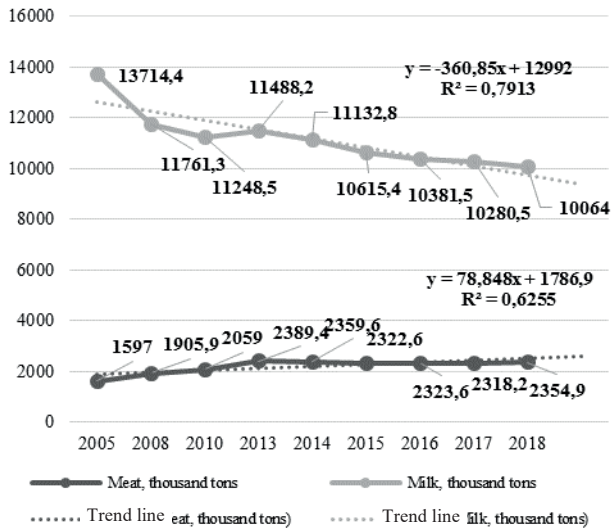
Figure 1. The graph of the dynamics of cereals and leguminous cultivation in Ukraine in 2000-2018, thousands of tons

During the study period, the production of cereals and leguminous has decreased by 1.8%. A significant decline in the production of these crops had been recorded in 2015 and 2017. The reduced production volumes could be explained by a set of reasons, including changes in the structure of production of such crops; the implementation of reforms directly related to land resources and methods of their governance (decentralization); such critical climatic issues, as extremely high summer temperatures and periods of heavy rainfall. According to the trend line of the cereals and leguminous production, their gross collection with high probability (determination coefficient is over 0.77) will continue to increase and in 2020-2021 could reach 80 million tons.

In 2018, the production of these crops after a slight fluctuation in 2015-2017 exceeded the level of 2014. When comparing the data of 2018 with data from 2000 it appears that the current production level is almost three times higher than in 2000.

Statistics show that during the study period the level of meat production has hardly changed and at the beginning of 2017 amounted to 2318.2 thousand tons, which is 3% less than in 2013.

To evaluate the prospects for the economic development of agricultural meat and dairy producers we have conducted a trend analysis based on the statistics of raw meat and milk production during 2005-2018 (Figure 2).



Source: created by authors based on (Prokopenko, 2018)

Figure 2. The graph of the dynamics of raw meat and milk production in Ukraine, 2005-2018

The equation of the trend line of milk production has a negative coefficient of argument X (determination coefficient is 0.79), describing a gradual decline in milk production. The resulting trend line shows that milk production in 2020-2021 will decline up to 10 million tons if market conditions will stay the same. Reducing milk production will lead to a new wave of appreciation for dairy products because the demand for such products is consistently high.

The meat production's trend line demonstrates and predicts its gradual increase. In a few subsequent years, meat production can amounted to 25 million tons. Studying the meat production indicator in 1990 (almost 43 million tons), it appears that the projected production level will reach only 58% of it (Prokopenko, 2018).

To study the economic potential 8 agricultural enterprises were selected: 4 agrarian holdings, 2 limited liability companies, and 2 farms.

The assessment of the economic potential of selected agrarian enterprises has been held in accordance with the calculation approach proposed. The coefficient of each component of the economic potential has been determined using a survey of ten experts. The results of survey are in Table 4.

Table 4. The coefficients of basic components of economic potential

The components of the economic potential	Coefficient (*k*)
Technology and production	0.3
Biological and ecological	0.35
Financial and economic	0.15
Personnel and social	0.2

Source: calculated by authors based on experts' survey results

At the end of the calculation process, the following results appeared (tables 5-8). To compare the dynamics of calculation results and financial results of studied agricultural enterprises during 2014-2018, the EBITDA index has been added to the tables.

During the study period, agricultural holding "Avangard" gradually lost the pace of development. Thus, in 2014 the EBIDTA of this holding amounted to 98.2 mln. USD. The next year it decreased by 9 times and in 2018 it had a negative value.

Having considered the index of economic potential, it has been concluded that during the period of EBITDA declined in 2015-2017 the holding has started to use its potential in a not optimal way. This conclusion could be confirmed by the fact that during the period of the greatest decline in EBITDA, the economic potential has also halved and remained at this level until 2018. At the end of the study period, the holding optimized its economic potential to a higher level comparing to its indicator at the beginning of the crisis (Table 5).

Table 5. The economic potential and financial results of the agrarian holdings "Avangard" and "Kernel", 2014-2018

Indicators	Years									
	2014	2015	2016	2017	2018	2014	2015	2016	2017	2018
	Agrarian holding "Avangard"					Agrarian holding "Kernel"				
EBIDTA, mln. USD	98.2	12.6	1.5	11.8	-0.9	223	396.6	346.4	319.2	222.5
Economic potential of agrarian holdings	0.31	0.18	0.19	0.18	0.38	0.48	0.34	0.23	0.35	0.48

Source: calculated by authors using (Avangardco, 2014, 2016, 2018; Kernel Holdings, 2014, 2016, 2018).

During 2014-2018, agrarian holding “Kernel” demonstrated consistently high financial results with a decrease at the beginning and at the end of the study period. The dynamics of the economic potential of this holding show that during the reduction period of EBITDA the management has promptly liquidated negative phenomena hindering further development (Table 6).

Table 6. The economic potential and financial results of the agrarian holding “Astarta” and “MHP”, 2014-2018

Indicators	Years									
	2014	2015	2016	2017	2018	2014	2015	2016	2017	2018
	Agrarian holding "Astarta"					Agrarian holding "MHP"				
EBIDTA, mln. USD	104.3	114.1	132.9	105.0	49.7	555	459	415	367	311
Economic potential of agrarian holdings	0.13	0.19	0.42	0.49	0.42	0.34	0.35	0.43	0.53	0.76

Source: calculated by authors using (Astarta Holding, 2016, 2018; MHP S.A., 2014, 2016, 2018)

During the study period, agricultural holding "Astarta" received a high value of EBITDA in 2016, but it has fallen almost threefold by 2018. Having considered the indicators of economic potential, it can be concluded that the managers have changed the strategy of the holding's development in 2015-2016, as the figures have doubled and remained at that high level until 2018. The sharp decrease of EBITDA is explained by highly competitive market conditions or other complications that have not allowed implementing the potential generated previously (Astarta Holding N.V., 2016, 2018; MHP S.A., 2014, 2016, 2018).

During 2014-2018, the "MHP" holding gradually lost a high level of profitability, at the same time, the company was increasing its economic potential in order to level the situation and regain the high income as in previous periods. During 2016-2018, the "MHP"’s economic potential grew by 46%, but there was no corresponding revenue growth. Such situation is explained in the same way as in the case of "Astarta", the market failed to respond accordingly to the strategic steps of "MHP", and external factors have limited the desired profitability of these agricultural holdings (Astarta Holding N.V., 2016, 2018; MHP S.A., 2014, 2016, 2018).

The agricultural enterprises that are limited liability companies were analyzed according to the same approach (Table 7). Two companies from the Khmelnyts’ky region engaged in crop and animal husbandry were selected for this analysis.

Table 7. The economic potential and financial results of the agrarian enterprises "Podillia+", LLC and "Lotivka Elit", LLC, 2014-2018

Indicators	Years									
	2014	2015	2016	2017	2018	2014	2015	2016	2017	2018
	"Podillia+", LLC					"Lotivka Elit", LLC				
Financial result, thousand USD*	55.70	95.52	142.27	177.24	85.22	1149.83	1698.99	2057.98	6033.19	36.06
Economic potential	0.15	0.21	0.21	0.54	0.41	0.41	0.43	0.45	0.60	0.51

** exch. rate 23.68 UAH per 1 USD as of 01.01.2020*

Source: calculated by authors using financial statements of the farms

The analysis has shown that "Podillia +", LLC at the beginning of the study period, as the previously studied holdings, was able to achieve high revenues, and by its end, the company has been experienced a significant revenue decline. In 2017, the company has increased its economic potential, which has increased financial results respectively. However, in 2018, there has been a decline in it. Given the growing economic potential, it can be assumed that the next two years the enterprise will be able to withstand the challenges and increase the income.

"Lotivka Elit", LLC has demonstrated the similar dynamics of profitability in 2014-2018. In 2018, the financial result of the company has fallen by almost a hundred times over the previous year, which also led to a decline in economic potential. Therefore, the company has had resources to restore the optimal level of profitability in the years that followed.

Next, we have analyzed the indicators of financial results and economic potentials of selected farms according to the same algorithm (Table 8).

Table 8. The economic potential and financial results of the farms "Molochars'ke-M" and "Liubymivs'ke", 2014-2018

Indicators	Years									
	2014	2015	2016	2017	2018	2014	2015	2016	2017	2018
	"Molochars'ke-M" farm					"Liubymivs'ke" farm				
Financial result, thousand USD*	8.36	8.53	4.56	13.51	14.57	4.69	6.50	2.62	5.07	2.41
Economic potential	0.80	0.65	0.63	0.67	0.82	0.49	0.58	0.54	0.76	0.72

**exch. rate 23.68 UAH per 1 USD as of 01.01.2020*

Source: calculated by authors using financial statements of the farms

During the study period, "Molochars'ke-M" farm, just like other studied enterprises, have had fluctuations in the financial result. Nevertheless, unlike the others, at the end of that period, this farm has managed to increase its financial results. It should be noted, that its level of economic potential was larger than 0.5 throughout the study period meaning a high level of farm resources consolidation. In addition, the farm has been able to optimize its market strategy leading to an increase in the net financial results.

Two times the "Liubymivs'ke" farm had been receiving the annual financial result lower than USD 3k during 5 years of the study period, although the level of its economic potential in both cases has exceeded 0.5. Therefore, the farm's poor product quality, improper logistics or marketing strategy could be problematic for its development.

CONCLUSIONS

As a result of the study, the authors proposed the definitions of the economic potential of enterprises and agrarian formations. Thus, the economic potential of enterprise is a complex of resources and capabilities of the enterprise that could be mobilized as needed ensuring the sustainable development of the enterprise through the cooperation of the elements of its potential to provide the market with popular products and services.

The economic potential of an agricultural enterprise is the integration of technology and production, financial and economic, personnel and social, biological and ecological, and unidentified components providing maximum profitability of the enterprise within the concept of sustainable development.

Analysis of the performance of agricultural producers using the proposed calculation methodology of the economic potential helped to assess the condition and dynamics of resource use by the companies, their potential opportunities, and strategies of their implementation. Thus, agricultural holdings have a relatively lower rate of economic potential, than farms, which indicates a higher level of consolidation of farm resources. However, the management of the economic potential of agricultural holdings and limited liability companies was more effective, than the one in farms, as bigger producers effectively restored and consistently kept their profitability after crisis reductions. The general trend of economic potential indicators was its

significant decrease during the 2014-2015 crisis and in 2018.

The received calculations help to assess the tendencies of agricultural production and the economic potential of agricultural enterprises. The achieved results are the basis of forecasting the results of the agricultural enterprises' activities in the coming years.

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