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Practical Use of the Assessment Methods of Economic Security of Agricultural Enterprises

Abstract: The article focuses on the essence of economic security of agricultural enterprises, as well as some historical aspects of the emergence of the concept “economic security of enterprise”. The author’s own definition of this concept is formulated on the basis of the previously conducted analysis of the scientific approaches to the concept “economic security of enterprise”. The article provides a list of economic security constituents arranged by the author and the influence of each of them on the overall level of economic security. We have investigated the order of assessment of the economic security level, defined a list of the indicators, by which the level of economic security is evaluated, and their limits. The place and importance of the forecasting of the economic security level are determined. The up-to-date means of forecasting are considered. The practical use of the assessment methods of economic security of agricultural enterprises is proposed. The recommendations for maintaining and improving the level of economic security of agricultural enterprises are given based on the conducted research.

Key words: economic security of agricultural enterprises, financial safety, level of economic security

Statement of the problem. The sustainable agricultural production cannot be secured without the use of advanced technologies, the transition to a new level of intensification and the provision of economic security of enterprise. Economic security of agricultural enterprises is a dynamic attribute, undergoing changes under the influence of factors and threats of the internal and external environment. The formation of a reliable system of economic security of agricultural enterprises and the possibilities of its assessment and analysis ensures its stable functioning

and creates the conditions for the growth of its economic potential.

The objective of this article is to study the peculiarities of the use of the assessment methods of economic security of agricultural enterprises.

Analysis of recent researches and publications. The problem of economic security of entrepreneurship, including at different levels of hierarchy of the economy management, is investigated in the scientific works of such famous Ukrainian scientists as T. H. Vasylytsiv, S. V. Vasylychak, V.I. Voloshyn, O.R. Boikevych A. G., V.V. Karnavchuk, Z.V. Herasymchuk, S. I. Pyrozhkov, V.M. Heiets and others.

Presentation of the basic material. The economy can be considered to be one of the main factors of influence on the Ukrainian agriculture as the agriculture of the countries with the economies which are developing or undergo the process of transformation is at a greater risk. Therefore, during the studies it is important to give consideration to the economic security of agricultural enterprises as an economic category.

There was a growing interest in the issue of economic security immediately after the emergence of money, but unfortunately our ancestors failed to present this term in a structured fashion definitely and truthfully. The concept “economic security” was synonymous with the concept “national security” in ancient treatises.

A new statement regarding the economic security of the country as a whole and each enterprise separately was given by Ronald Harry Coase, who believed that the state should provide the legal leverage that would enable the market to solve any non-standard situations arising in the world under its own power.

In Ukraine, the study of the concept “economic security of enterprise” began only in the 90-ies of the last century. Nowadays, there is no common understanding of the concept “economic security” in the contemporary scientific works. As a general thing, in a majority of the research works the concept “economic security” is regarded as the ability of the economy to ensure its free and independent development, the stability of civil society and its institutions, as well as a sufficient defense potential of the country upon unfavorable conditions and

case scenarios; the capacity of the state to protect national economic interests from any internal and external threats¹.

We believe that economic security of enterprise is a system of core (managing organizational, financial, personnel, technical and technological, legal, informational, environmental, power, market and interface security) and supporting (insurance security) constituents which, through direct, comprehensive and continuous interaction between themselves, provide the conditions under which enterprise effectively uses available own, attracted and borrowed resources, improving the existing economic potential, has significant competitive advantages in existing markets and the possibility of improving its market relations, implements measures to upgrade production status that will protect it from exposure to negative internal and external factors.

When considering economic security as a system, its basic constituents need to be emphasized.

Based on the conducted study, we have systematized the constituents of economic security of agricultural enterprises, which include the following:

1. Managing organizational security is the first factor that affects the level of economic security of agricultural enterprises in perspective, as the organization of establishment of an enterprise precedes all other processes of the formation of the activity that is a form of enterprise management.

2. Financial security of any enterprise determines the financial condition, which is characterized by the following parameters:

- resistance to internal and external threats;
- equilibrium and quality of a set of financial tools, technologies and services used by enterprise;
- capacity of the financial system of enterprise to provide the implementation of its financial interests, mission and tasks with the sufficient volumes of financial resources.

¹ Герасимчук З.В.(2013). *Економічна безпека регіону: діагностика та механізм забезпечення*. Луцьк: Надстир'я, 244.

3. Personnel constituent of economic security of enterprise involves increasing the effectiveness of all staff categories.

4. Technical and technological constituent of enterprise economic security is the component the high-priority task of which is to protect enterprise from the negative factors with the purpose of creation and efficient use of technical facilities and technological processes to ensure a high level of competitiveness.

5. Legal security of enterprise is the protection against the excessive tax burden, unstable legislation, inefficient operation of the legal department of enterprise. The legal constituent involves the extensive legal support of the enterprise activity, compliance with the applicable laws.

6. Information security means the goal-directed activity of enterprise and officials with the use of legally permissible forces and means to achieve security state of the information environment of enterprise that ensures its proper functioning and dynamic development.

7. Security of enterprise in the environmental sphere is the protection from the devastating effects of natural, technological factors and consequences of the economic activities of enterprise. Environmental safety of enterprise means that its functioning does not lead directly or indirectly to deterioration of the natural environment and does not cause direct or indirect losses to the state, consumers, population and personnel.

8. Investment security is aimed at preventing investment risks, i.e. risks of investment losses and loss of revenues. Investment security is the optimization of the forms and scope of investments at the legislative level, profitability balance and riskiness of investment projects.

9. Power security is the protection of individuals from threats to their life, health and material well-being, as well as the protection of enterprise property from criminal encroachments.

10. Market constituent of enterprise economic security is the protection of the chosen inefficient behavior model in the market, errors in product and sales policy, pricing policy, production of uncompetitive products.

11. Interface constituent characterizes the reliability of the interaction with economic contracting parties².

The system of assessment and analysis of economic security of agricultural enterprises includes a set of coherent, interconnected blocks and stages of the activity, the systematized tasks techniques, methods and models which are adjusted (result-oriented) to these tasks and enable to identify, assess and reduce the impact of business risk to an acceptable level under the least wastage of corporate resources.

By assessing the level of economic security of agricultural enterprises it is possible to analyze the efficiency of an enterprise, identify its areas of concern and prevent possible threats to business that may occur as a result of a particular risk.

The process of assessment of economic security level of agricultural enterprises includes the following steps:

- 1) selection of criterion of economic security efficiency, which characterizes the degree of approximation of enterprise to the safe condition;
- 2) formation of a multiplicity of financial security indicators;
- 3) determination of threshold values of indicators;
- 4) monitoring of the selected indicators and comparison of their actual values with the threshold ones;
- 5) determination of integrated level of enterprise financial security by the selected indicators³.

One of the main aspects of assessing the economic security level is the selection of criteria for its calculation. One should understand the criteria of security as the characteristic or a number of characteristics that indicate whether the enterprise is characterized by economic security or not.

Accordingly, these criteria should not only determine which level of security is on the enterprise, but also give us to understand due to what factors this level has

² Геєць В.М. (2009). *Моделювання економічної безпеки: держава, регіон, підприємство*. Харків: ІНЖЕК, 240.

³ Васильців Т. Г. (2012). *Економічна безпека підприємництва України: стратегія та механізми зміцнення*. Львів: Арал, 386.

been reached.

Therefore, it is expedient to make assessment of the economic security level by the indicators used in planning, accounting and analysis of the enterprise activities, which is a prerequisite for the practical use of this assessment.

In the economic literature there is no single approach to the definition of generalizing level of economic security because the constituents that determine it are very diverse, and their significance for each enterprise is different.

As a rule, the assessment of economic security is limited to a detailed analysis of each constituent carried out as the evaluation of the overall economic situation of agricultural enterprises.

The overall assessment is performed by comparing the obtained results with standard values of a particular indicator.

This assessment is carried out using the following indicators:

- 1) liquidity ratios: liquidity ratio (standard value is 0,5–0,7); current liquidity ratio (standard value is not less than 2,0); current net working capital (standard value is greater than 0);
- 2) leverage ratio (share of long-term financial loans in total liabilities);
- 3) efficiency ratio: total capital turnover ratio (standard value is increase); long-term asset turnover ratio (standard value is increase); inventory turnover ratio (standard value is increase);
- 4) profitability ratios: gross profit margin (standard value is increase); net profit margin before taxes (standard value is increase); net profit margin after tax (standard value is increase); return on total capital (standard value is increase); return on equity (standard value is increase)⁴.

Additionally, after the analysis of indicators it is necessary to determine the level of economic security of agricultural enterprises.

The security status can be described as:

⁴ Каркавчук В. В. (2011). *Структурне моделювання рівня фінансової безпеки підприємства*. Севастополь-Донецьк: ДонНУ, РФ НИСИ в г. Донецьке, 806-810.

- 1) normal when the indicators of enterprise economic security are within threshold;
- 2) pre-crisis when threshold value of at least one indicator is exceeded;
- 3) crisis when there is a barrier of the main indexes;
- 4) critical when all barriers (primary and secondary) are violated.

We have applied the presented method of using indicators to assess the level of economic security on the example of Pilot Farm of the Institute of Agriculture of Northern East of NAAS of Ukraine SOE for 2011-2015 and determined its level of economic security (Table 1).

Table 1

Indicators to assess the level of economic security of Pilot Farm of the Institute of Agriculture of Northern East of NAAS of Ukraine SOE for 2011-2015

Indicators	2011	2012	2013	2014	2015
<i>1. Liquidity ratios</i>					
Liquidity ratio	0.80	0.34	0.22	0.40	0.38
Current liquidity ratio	6.86	6.09	4.57	5.40	7.53
Current net working capital	5 206.00	4 700.00	4 681.00	5 485.00	7 947.00
<i>2. Leverage ratio</i>					
	76.9%	76.5%	74.9%	71.3%	67.0%
<i>3. Efficiency ratio</i>					
Total capital turnover ratio	1.2	0.6	0.6	0.7	0.9
Long-term asset turnover ratio	2.1	1.0	0.9	1.1	1.6
Inventory turnover ratio	1.2	1.3	1.2	1.4	1.4
<i>4. Profitability ratios</i>					
Gross profit margin	24.5%	14.2%	15.6%	20.2%	32.4%
Net profit margin before taxes	0.8%	1.6%	2.1%	2.1%	2.7%
Net profit margin after tax	0.8%	1.6%	2.1%	2.1%	2.7%
Return on total capital	0.5%	0.8%	1.1%	1.3%	2.3%
Return on equity	0.6%	1.1%	1.4%	1.7%	3.3%

According to the Table 1, we can conclude that Pilot Farm of the Institute of Agriculture of Northern East of NAAS of Ukraine SOE has the normal status of economic security because all indicators are within normal range, except for the liquidity ratio that indicates a partial failure of the enterprise to pay its obligations as they become due, while, on the other hand, it can use the surplus current assets, if necessary.

The leverage ratio has a quite high value, even though it decreased by almost 10% in the period from 2011 to 2015.

The process of its forecasting is also important in determining the level of economic security of agricultural enterprises. This is because the efficiency of solutions on enterprise management directly depends on the quality of forecasting and analytical studies.

All the research and forecasts are intended to minimize unforeseen and negative consequences of managerial decisions, reduce the uncertainty of their final net effect.

Today there are plenty of methods and software, whereby forecasting is conducted.

The software of Diamond FMS, Dutch company, is an indisputable innovation among such programs. It is the unique software designed especially for effective and comfortable financial management of enterprise or project.

The program includes the unique tools for planning, forecasting, analysis and preparation of financial reports and many other useful features.

We have managed to forecast the key financial performance indicators and determine the level of economic security of Pilot Farm of the Institute of Agriculture of Northern East of NAAS of Ukraine SOE based on the program functions (Table 2).

The data of Table 2 show that the level of economic security of the agricultural enterprise would significantly deteriorate in the long range period.

Table 2

Forecast indicators of Pilot Farm of the Institute of Agriculture of Northern East of NAAS of Ukraine SOE for 2016-2018

Indicators	2016	2017	2018
<i>1. Liquidity ratios</i>			
Liquidity ratio	0.32	0.25	0.18
Current liquidity ratio	7.35	7.28	7.21
Current net working capital	7 859.80	7 772.60	7 685.40
<i>2. Leverage ratio</i>	66.8%	66.6%	66.5%
<i>3. Efficiency ratio</i>			

Total capital turnover ratio	0.8	0.8	0.8
Long-term asset turnover ratio	1.6	1.6	1.6
Inventory turnover ratio	1.2	1.2	1.2
<i>4. Profitability ratios</i>			
Gross profit margin	32.4%	32.4%	32.4%
Net profit margin before taxes	-0.6%	-0.6%	-0.6%
Net profit margin after tax	-0.6%	-0.6%	-0.6%
Return on total capital	-0.6%	-0.6%	-0.6%
Return on equity	-0.5%	-0.5%	-0.5%

This is evidenced, mainly, by the profitability ratios which have the negative values. It being understood that the efficiency ratios in the future period would remain unchanged, which is negative for the enterprise operation and its economic security.

In order to improve the future level of economic security of agricultural enterprises it is necessary to:

- create the conditions of the security provision and preservation of the property of enterprise;
- implement the system of staff training, retraining and rotation;
- reorganize certain operational divisions including security department;
- conduct constant adaptation of enterprise to innovations;
- optimize any direct and indirect costs of the activity;
- economize resources;
- optimize sources of enterprise financing and development;
- generate investments;
- take out insurance as a means of maintaining profits.

Conclusions. The estimated indicators of the level of economic security are considered to be only the first step in identifying the degree of the enterprise economic security. The existing methods still require further understanding of the issues concerning the assessment of hazardous activities of an agricultural enterprise and determining the intensity of impact of one or another factor on the enterprise operation.

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