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Methodical Approaches to the Assessment of Financial Risks of the Agricultural Sector

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► **Abstract.** For the purpose of risk management, the specific features of the agricultural complex and the main sources of information used in risk identification are identified. The purpose of the study – substantiate the methodological tools for identifying and assessing financial risks for managing such on the example of the agricultural sector. The monographic method was used to review the scientific publications of researchers and analyse the regulatory framework for identifying and assessing risks, systematic and comparative analyses to form methodological approaches to financial risk assessment, empirical method and synthesis to analyse food security indicators, indicators of state regulation of financial risks in the industry, a graphical method to display the dynamics of individual indicators under study, an abstract-logical method for theoretical generalisations and conclusions. Methodical approaches to financial risk assessment are considered. The components of the methodology of financial risk assessment as a system of principles, approaches and methods of scientific research of identification and measurement of risks, and the theoretical foundations of using these tools in the study of security aspects of the national economy are specified. It is determined that financial risk concerns almost all areas of activity and is a kind of assessment of decision-making under conditions of uncertainty in the field of financing, investment, asset management and resource potential at different levels of management. For the macro-level of financial risk assessment, the dynamics of the food security index as the main criterion for the consequences of the financial security of the industry; the state of the shadow economy as a determining factor of systemic financial risks; the level of budget support as a factor in the efficiency of the state financial policy of the industry and financial risk management were analysed. For the micro level, the classification of methods for assessing financial risks based on the methods of the financial condition of enterprises is clarified, and the relationship between them is argued. Express analysis of financial risks based on financial statements by analytical coefficients on the example of PJSC "Myronivsky Hliboproduct" was performed. The regulatory methods for determining financial risk by the coefficient analysis and cost-benefit analysis and the National Standard of Ukraine are summarised. "Risk management. Methods of general risk assessment" to justify the necessity of developing a unified system of methodological approaches to financial risk assessment. The necessity of forming a unified methodology for assessing the financial risks of the agricultural sector is proved, for which the financial resources of the industry for 2013-2020 are analysed and it is found that their share accounts for 9.4% of the resources of the economy. Methodological approaches to the assessment of financial risks are expanded by involving the macro-level of the agricultural sector in the analysis, as it serves as a guarantor of food security, there is a necessity to constantly monitor the state of financial resources and its regulation through budget support, tax preferences,

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and regulatory measures to maintain the competitiveness of the industry. It is generalised that the content of the assessment of financial risks of agricultural enterprises is determined by the purpose and main tasks, which are graded at the hierarchy levels. The scheme of the methodology for assessing financial risks of the agricultural sector is developed. The methodological support of financial risk assessment processes has been improved, which can serve as the foundation for the development of a unified Methodology for analysing the financial condition and financial risks of agricultural enterprises. The stages of financial risk assessment for the agrarian sector are proposed according to the algorithm: detection – analysis – minimisation, which can be useful for agricultural enterprises in the implementation of a comprehensive financial analysis. Some conclusions of the study can be used in the development of the financial policy of the agricultural sector

► **Keywords:** agricultural enterprises, methodological approaches, assessment, analytical indicators, financial risks, financial condition

► Problem statement

Financial risks are an indispensable attribute of economic activity, and the deepening of the crisis in the economic environment is the reason for their dynamic growth. Therefore, in the current conditions of global and national economic instability, it is advisable to expand knowledge about their nature and methods of managing them.

In the practice of financial risk assessment, the most widespread are methodological approaches based on: analysis of the balance sheet of enterprises (horizontal, vertical, trend analysis, method of financial coefficients); heuristic methods, informal intuitive approaches, generalisation of solutions to similar problems, expert assessments; economic and mathematical methods (Gómez-Limón, & Sanchez-Fernandez, 2010). Since financial risks are inherent in almost every component of economic security, the general state and development of the economy depend on the quality of their scientific generalisation. Efficient risk management involves appropriate methodological aspects of assessment and justification of actions to reduce or avoid adverse effects of risks at all levels of the hierarchy. In this aspect, it is essential to analyse the financial risks of the agricultural sector as one that ensures food security and is characterised by a changing environment and increased risk.

The definition of the essence of financial risks and the main methods of their assessment have been the subject of research by well-known scientists in this field, including: O. Baranovsky; V. Varnaliy; V. Gayets; A. Yermoshenko; S. Maistro; I. Rekunenko; V. Rossokha; O. Radchenko

(Melnychuk, Radchenko, & Leontovych, 2021), P. Sabluk; S. Svirko; Y. Kharazishvili etc. On the theoretical foundations of financial risk management of the enterprise worked N. Kuznetsova, P. Bidiuk (Kuznetsova, & Bidiuk, 2020), O. Shyshkina (Shyshkina, 2019); D. Dermenzhi (Dermenzhi, 2018), Y. Shvets (Shvets, 2018), who provided a definition of the essence of financial risks and the main methods of their assessment in an unstable market economy. A significant part of research is devoted to the economic and mathematical modelling of indicators of the efficiency of the financial risk management system: G. Chaban (Chaban, 2020); S. Tkachenko (Tkachenko, 2017). I. Fedulova, G. Pyatnytska *et al.* (Fedulova, & Piatnytska, 2020), exposed the signalling of risk management, crisis management and compliance in the management of the financial security of the enterprise. Financial policy in the context of shadowing and imbalances was studied by I. Lukyanenko *et al.* (Lukianenko, 2020); national systems of risk and threat assessment – by O. Reznikova *et al.* (Reznikova, Voitovskiy, & Lepikhov, 2020); N. Poida-Nosyk, I. Cherleniak (Poida-Nosyk, & Cherleniak, 2021) – financial security management at macro and micro levels. Regarding agrarian risks, the authors' developments are known: A. Sakun, O. Prystemsky (Sakun, & Prystemsky, 2019), O. Prokopchuk (Prokopchuk, 2019), O. Emelyanov (Yemelianov, 2020), I. Posokhov, Y. Zhadan (Posokhov, & Zhadan, 2019), N. Sirenko, A. Minaeva (Sirenko, & Minaeva, 2015) and others.

Foreign researchers J. Gómez-Limón and G. Sanchez-Fernandez (2010) (Gómez-Limón, &

Sanchez-Fernandez, 2010) noted that risk plays a key role, and its acceptance by farmers contributes to their competitiveness, so reliable assessment methods are required; C. Cafiero, F. Capitanio, A. Cioffi, A. Coppola (2007) (Cafiero, Capitanio, Cioffi, & Coppola, 2007) developed approaches to risk and crisis management in the reformed European agricultural policy; T. Andersen, P. Schreder (2010) were concerned with the practice of strategic risk management (Andersen, & Schreder, 2010); J. Clapp, S. Isakson (2018) (Clapp, & Isakson, 2018) assessed the risk profit and the consequences of financialization in the food system; M. van Asseldonk, M. Jongeneel, R. van Kooten, J. Cordier (2019) (van Asseldonk, Jongeneel, van Kooten, & Cordier, 2019). M. Janowicz-Lomott, K. Łyskawa (2017) (Janowicz-Lomott, & Łyskawa, 2017) considered agricultural risk management in the European Union, etc.

Thus, the researchers classified financial risks; provided substantiation of methodological approaches and practical tools; developed risk management models by stages and components; developed management strategies for the hierarchy based on the results of mathematical modeling; identified areas for improving risk analysis, etc. However, with the deepening of the crisis, it has become relevant to conduct research in the field of systematisation of methodological approaches to financial risk assessment tools to generalise them specifically for the agricultural sector.

The purpose of the study – justify the methodological tools for identifying and assessing financial risks to manage them in the example of the agricultural sector.

► Summary of the main results of the study

Methodological approaches to financial risk assessment include its identification, the actual

assessment process, and the choice of neutralisation methods. According to researchers, in particular S. Tkachenko, “financial risk management is understood as a system of methods and tools used in the identification, analysis of financial risks, assessment of their possible consequences for the enterprise, development and implementation of measures to neutralise them” (Tkachenko, 2017, p. 172). The definition of financial risk is organically inherent in the practice of market management. According to D. Dermenji (Dermenzhi, 2018, p. 72), there are many opinions on the essence of the concept of financial risk in the variation that it is: associated with financial transactions (profit, currency, securities, etc.); covers all types of activities. Therefore, one of the essential stages of financial risk management is its assessment. Thus, I. Lukyanenko et al. established that “the financial system is stable if: it efficiently redistributes resources from savings owners to investors; financial risks are carefully assessed and adequately managed; the financial system can absorb shocks without significant adverse consequences” (Lukyanenko, 2020, p. 28), and “conditionally, the risks of financial systems can be divided into three categories: business risks, financial and operational risks”.

According to the study of N. Kuznetsova, and P. Bidiuk (Kuznetsova, & Bidiuk, 2020), financial risks are the probability of financial consequences in a situation of the uncertainty of the conditions of activity. The consequences of risk implementation can be both losses and gains, they require rather sophisticated tools for their processing. Thus, financial risk relates to many areas, it serves as a kind of assessment of uncertainty in the process of activity, decision-making in the field of financing, investment, asset management, in general, and resource potential, thus, the methods of assessment are rather diverse (Table 1).

Table 1. Methods of financial risk assessment

Assessment method	Essence of the method
Oriental	The degree of risk impact on key performance indicators is assessed
Systematic	It is estimated by the coefficient β (sensitivity coefficient), which determines the level of fluctuations in the performance of the industry relative to the performance of the market or the entire economy
Statistical	Determining the probability of losses based on statistical data of the previous period and establishing the zone, risk coefficient: assessment of the probability of execution, analysis of the probability distribution of the payment flow, decision tree, simulation risk modeling, and technology “Risk Metrics”

Table 1. Continued

Assessment method	Essence of the method
Analytical	They allow determining the probability of losses based on mathematical models and are mainly used to analyse the risk of investment and innovation projects: sensitivity analysis, method of adjusting the discount rate to consider the risk, method of equivalents, method of scenarios
Expert	A set of logical and mathematical-statistical methods and procedures for processing the results of the expert group survey
Financial sustainability assessments	It is designed to assess the financial stability of the enterprise (project) and to identify potential risk areas based on this: fixing the financial condition of the enterprise (financial stability assessment); comparing the financial stability of the enterprise before and after the implementation of the analysed project (cost-effectiveness assessment)
Rating	It consists of the following elements: a system of evaluation coefficients; a scale of values of these coefficients (if necessary); a scale of evaluation of the values of the obtained indicators; formulas for calculating the final rating
Regulatory	Based on using a system of financial ratios: liquidity, debt, autonomy, manoeuvrability, immobilisation, coverage
Fundamental	Financial risk is calculated through fundamental indicators: <i>volatility of asset profitability, the small size of the company (P/BV), unbalanced growth (ROE is higher than the coefficient of balanced growth)</i>
Combined	Various methods are used

Source: (Zorina, 2015, p. 224; Dermenzhi, 2018, p. 73)

According to the above data, it follows that risk assessment methods are divided into qualitative and quantitative, where the first – the determination of the scope of possible risks, and factors affecting them, preliminary assessment of the danger, and the second – providing their specific measurement. The variety of evaluation methods is generated by different objectives. Therefore, the primary task of methodological approaches to

financial risk assessment is to define the purpose and its objectives precisely.

For agricultural enterprises, an express analysis of financial risks is performed based on financial statements in specific areas identical to the analysis of the financial condition. Analytical coefficients and methods of their calculation on the example of PJSC “Myronivsky Hliboproduct” are as follows (Table 2).

Table 2. Analytical ratios of PJSC “Mironivsky Hliboproduct” for 2016-2020

Indicator	2020	2019	2018	2017	2016
Liquidity, %	85.00	62.00	65.11	51.50	80.59
current assets/current liabilities					
Accelerated liquidity, %	82.00	60.00	57.20	48.99	74.44
current assets – inventories/current liabilities					
Monetary liquidity, %	9.00	7.00	4.64	2.77	4.17
cash and its equivalents/current liabilities					
Cycle of accounts receivable repayment, times	4.82	13.41	12.52	4.88	1.95
revenue from sales/accounts receivable					
Inventory renewal cycle, times	55.30	59.76	14.74	20.62	5.04
cost of sales (goods)/inventory					
Share of the involved of equity in assets, %	132.00	127.00	144.15	115.60	102.80
long-term and current liabilities/assets					
Ratio of borrowed and equity capital, %	-415.00	-417.00	-326.48	-741.20	-3673.32
long-term and current liabilities/equity					
Share of fixed assets in assets, %	40.00	35.00	48.46	89.56	65.51
fixed assets/assets					
The level of depreciation of fixed assets, %	20.00	9.00	12.18	22.50	20.60

Table 2. Continued

Indicator	2020	2019	2018	2017	2016
depreciation/original cost of fixed assets					
Profitability, %	-5.00	14.00	11.52	10.10	17.78
net profit/net sales revenue					
Profit on the involved assets, %	-6.00	16.00	13.00	4.46	4.84
(net profit/assets at the beginning of the period)					
Profit on the invested capital, %	18.00	-58.00	-29.44	-28.63	-172.97
(net profit/equity at the beginning of the period)					

Source: Based on (Sirenko, & Minaieva, 2015)

The risks of the analysed enterprise are significantly increasing, as evidenced by a decrease in return on assets, a decline in overall profitability, the duration of the receivables repayment cycle, etc.

In practice, the methodological approach of coefficient analysis and expediency of costs is used, the methodology of which is performed by the national legislation, in particular, the Order of the Ministry of Economy of 19.01.2006 No. 14 "Methodological Recommendations for Detecting Signs of Enterprise Insolvency and Signs of Actions to Conceal Bankruptcy, Fictitious Bankruptcy or Bringing to Bankruptcy" and in the "Regulation on the Procedure for Analyzing the Financial Condition of Enterprises Subject to Privatization" approved by the Order of the Ministry of Finance of 26.01.2001 No. 49/221. Of particular note is the list of methodological approaches provided in the National Standard of Ukraine "Risk Management. Methods of general risk assessment", according to the Order of the Ministry of Economy No. 1469 of

11.12.2013 DSTU IEC/ISO 31010:2013 (IEC/ISO 31010:2009, IDT).

In addition, there is a methodological approach to risk assessment (risk criteria by the degree of risk), provided in the "Procedure for the development of the schedule of a documentary scheduled audits of taxpayers", approved by the Order of the State Tax Service of Ukraine dated 27.06.2012 No. 553.

The methodological approach to the assessment of financial risk by the integral indicator of financial condition is disclosed in the Order of the Ministry of Finance dated 14.07.2016 No. 616 "On Approval of the Procedure for Assessing the Financial Condition of a Potential Beneficiary of an Investment Project", which provides models for calculating the integral indicator of the beneficiary's financial condition, including in the field of agriculture (Table 3) for large and medium-sized enterprises (formula 1) and small enterprises (formula 2):

$$Z = 1,3 \times K_3 + 0,03 \times K_4 + 0,001 \times K_5 + 0,61 \times K_6 + 0,75 \times K_7 + 2,5 \times K_8 + 0,04 \times K_9 - 0,2, \quad (1)$$

$$Z = 0,02 \times MK_1 + 0,02 \times MK_2 + 1,5 \times MK_3 + 0,6 \times MK_7 + 2,6 \times MK_8 + 0,008 \times MK_9 - 1,1; \quad (2)$$

where K_1 – coverage ratio (liquidity of the third degree); K_2 – intermediate coverage ratio; K_3 – financial independence ratio; K_4 – non-current assets to equity ratio; K_5 – return on equity ratio; K_6 – return on sales by financial results from operating ac-

tivities (EBIT); K_7 – return on operating activities by EBITDA; K_8 – return on assets by net profit; K_9 – turnover ratio of current assets; K_{10} – turnover ratio of borrowed capital by financial results before taxation, financial expenses and depreciation (Table. 3).

Table 3. Assessment of the financial condition and determination of the class of potential beneficiaries of the investment project

Type of activity	Classes by the level of financial condition of the borrower				
	1	2	3	4	5
Agriculture, forestry and fisheries: Section A (01-03)	More than + 0.81	From + 0.80 up to + 0.35	From + 0.34 up to - 0.25	From - 0.26 up to + 0.35	Less than - 3.2

Source: (Order of the Ministry..., 2016)

Finances of the agricultural sector are an essential component of the national economy, thus, the risks related to the sector are subject to measurement and regulation. According to the balance sheet of enterprises in 2013-2020 (Table 4), their share accounts for 9.4% of the financial resources of the sectors of the economy on average, with 5.48% in 2013 and 8.96% in 2020, that is, the niche of the agricultural sector's participation in general economic finance is steadily expanding. The highest figure was in 2016, when the share

of the agricultural sector in the balance of enterprises of economic sectors reached 15.39%. Therewith, the agricultural sector plays a significant role in the implementation of the state's financial policy, as it is a budget-forming industry, covers more than a third of exports, demonstrates consistently high profitability indicators over the years and the predominant share of profitable enterprises in financial results (Melnychuk, & Lupenko, Pasichnyk, 2019; Yevtushenko, Tymkiv, & Sheshenia, 2016, p. 39).

Table 4. Financial resources (balance sheet indicators) of agricultural enterprises by size of activity in 2013-2020, UAH million

Year	Total	Great	Medium	Small	Of these, micro-
2013	313096.7	43349.9	168073.3	101673.4	36713.1
2014	390606.9	60067.2	199608.9	130930.7	43371.3
2015	685844.8	126294.2	298600.5	260950.1	96737.6
2016	1537319.0	149731.6	444450.6	943136.7	571754.9
2017	911614.0	151691.4	414798.7	345123.8	118140.6
2018	983593.6	108002.3	468616.0	406975.2	168915.3
2019	1030366.6	164961.5	457819.9	407585.2	168122.0
2020	1130304.8	185032.9	474249.8	471022.0	192436.2

Source: (Official website of the..., n.d.)

The industry is a guarantor of food security, thus, the state constantly monitors the state financial resources of agricultural enterprises and their regulation through budget support, tax preferences, and regulatory measures to maintain the competitiveness of the industry in the economy

and various forms of management in the agricultural sector. It can be assumed that the confident role of agricultural finance in the economic market largely depends on the national policy of protectionism. The state of food security by indicators in 2013-2020 is demonstrated in Table 5.

Indicator	2013	2014	2015	2016	2017	2018	2019	2020
Daily caloric intake food, thousand kcal	2969	2939	2799	2742	2707	2706	2691	2674
The ratio of production and consumption per person, %								
meat and meat products	93.6	101.4	106.5	106.0	105.5	106	111.0	108.5
milk and dairy products	114.3	116.2	118.0	116.1	120.1	120.0	115.0	111.3
eggs	139.5	146.9	139.9	132.5	1337	139.0	140.7	137.3
oil	613.5	874.5	869.3	1083.4	1262.8	1241.0	1367.0	1358.4
sugar	74.8	131.5	95.4	142.2	158.2	139.0	121.7	178.1
potatoes	361.4	390.8	353.7	364.6	364.5	382.0	355.0	386.6
vegetables and melons	143.6	147.1	142.1	143.1	143.3	143.0	148.0	138.5
Production of grain at one person per year, i.e	1.39	1.49	1.40	1.55	1.46	1.66	1.80	1.60
The level of cereal stocks, % before consumption	81.8	92.0	89.2	108.2	118.0	136.2	116.0	105.7
Share of sales of imported food products, %	14.1	14.4	14.8	15.2	17.8	19	20.0	20.6
Food safety	86	94	92	92	91	90	89	85

Source: Formed based on data calculated by the Ministry of Economy of Ukraine (n.d.)

In 2020, the daily caloric content decreased food by 10% compared to 2013, increased consumption eating oil, sugar, and potatoes, with cheaper of the entire price segment. Food level whose security in 2020 is the same as it was in 2013, but lower than in other years analyzed period. That

is, the state of food safety is indirectly evidenced by the increase management of risks in the industry. They have a significant impact on finances risks of the shadow economy. The shadow level economy of Ukraine by economic types activity in the last year is defined as follows (Fig. 1).

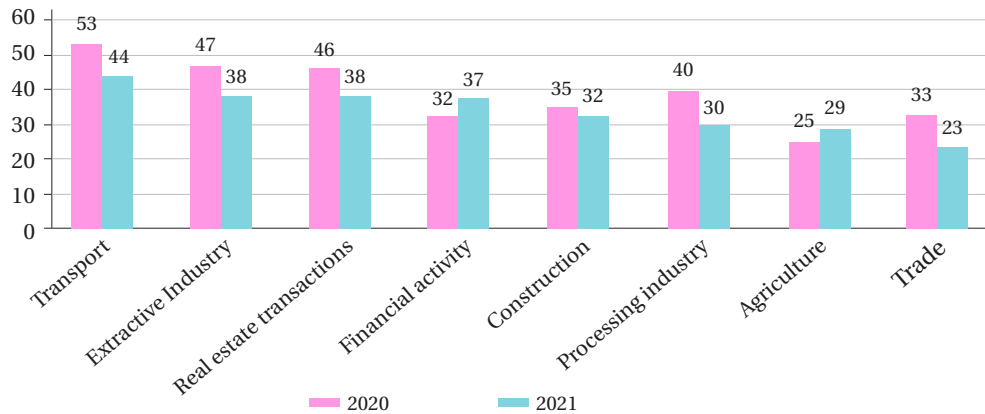


Figure 1. The level of the shadow economy of Ukraine by types of economic activity, % of the volume of official GVA corresponding to foreign trade

Source: Shadow Economy: General Trends. (Department of Strategic... 2021)

According to the Department, the share of the shadow sector in the “Agriculture, Forestry and Fisheries” increased by 3 p.p. to 29% of GVA of the industry. According to the methodological provisions of the calculation, the increase in the shadow economy in the GEA is a reflection of the growth in the number of unprofitable enterprises, the number of which has increased due to several interrelated factors: due to the seasonal nature of production in agriculture, gross output in the in-

dustry from January to May is exclusively developed by the production of livestock products; the harvest lower than last year’s resulted in higher prices for feed in livestock production and, accordingly, increased production costs.

The regulation of financial risks of agricultural enterprises at the macro level is performed by state support measures. The dynamics of functional expenditures of the state budget for the agricultural sector in 2013-2020 were as follows (Table 6).

Table 6. Dynamics of state budget expenditures on the agricultural sector of Ukraine in 2013-2020

Indicator	2013	2014	2015	2016	2017	2018	2019	2020
State budget expenditures on agriculture, million UAH	6915	5135	4143	4075	10532	13054	13020	13496
Share of agriculture in expenditure of the budget, %	1.37	1.19	0.71	0.59	1.25	1.32	1.21	1.04
Share of agriculture in expenditure of on the economy, %	13.62	14.92	11.15	12.97	22.39	20.52	18.00	7.98
Share of expenditures on the agricultural sector in GVA of the industry, %	5.37	3.18	1.73	1.45	3.46	3.61	3.65	3.47

Source: (Official website of the..., n.d.)

According to the data on expenditures on the agricultural sector for the period 2013-2020, the average annual expenditures amounted to UAH 3.3 billion. The structure of the programmes

in terms of funding in the last three years was as follows: financial support for activities by reducing the cost of loans – 25%, support for livestock and agricultural processing – 25, financial support for

agricultural producers – 25, support for horticulture – 10, other programmes – 15%. These areas of support are conditioned upon the assessment of sectors, types of products, and forms of management, considering the risks of income shortfalls and the implementation of food security tasks. Thus, the role of the budget in the development of financial resources of the agricultural sector is rather significant and is designed to strengthen the impact of budgetary levers on the volume and structure of financing and reduce financial risks. The analysis of budget support for the agricultural sector confirms some positive changes in improving the conditions for providing credit support; targeted actions to support small producers, and strengthening logistics through compensation for the cost of machinery and equipment. Thus, in those areas that require state regulation in mar-

ket conditions. However, in general, the system of state support for the financing of the agricultural sector is still in the phase of identifying and systematising the factors of development of enterprises and industries, forms of management and types of products, searching for unused reserves to increase efficiency for various economic forms, in particular for small businesses, as the most vulnerable form of increasing financial resources, especially borrowed ones. These factors determine the necessity to develop a unified approach to the methodology of financial risk assessment of the agricultural sector.

According to the results of the study, it can be concluded that the content of the assessment of financial risks of agricultural enterprises is determined by the purpose and main tasks, which are graded at hierarchical levels (Fig. 2).

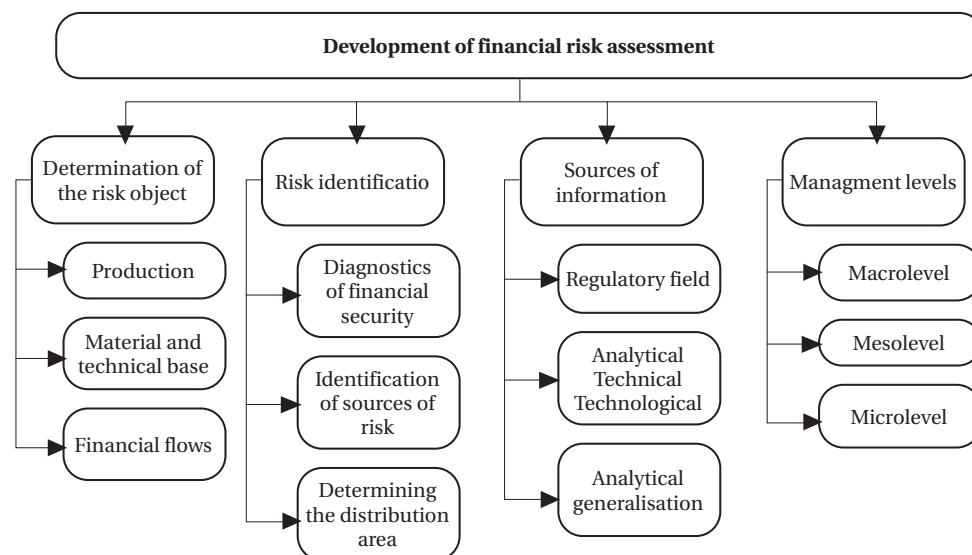


Figure 2. Development of financial risk assessment of agricultural enterprises

Source: Based on (Kuznietsova, & Bidiuk, 2020)

The stages of financial risk assessment for the agricultural sector can be performed according to the algorithm: detection – analysis – minimisation (Kuznietsova, & Bidiuk, 2020; Zorina, 2015, p. 27). At the identification stage, it is a clarification of the risk context, identification and type of the risk source, the scope of the distribution and possible risk situations, and identification of the causes and factors that determined it. Risk analysis involves identification, quantitative assessment of the probability of its occurrence and possible losses,

determination of parameters, and risk monitoring. Risk minimisation measures include planning actions to respond to the manifestations of risk, reducing the level of risk through using specific management methods for each type of risk and controlling efficiency.

► Conclusions

The methodological approaches to the assessment of financial risk are analysed, and it is determined that it applies to almost all areas of activity, is a

kind of assessment of uncertainty in the process of activity, decision-making in the economic sphere of financing, investment, asset management, in general, resource potential and requires a unified approach at the management levels.

To assess the macro-level financial risks, the dynamics of the food security index were analysed, the state of which indicates an increase in risks in the industry; the state of the shadow economy, the share of which for the agricultural sector increased by 3 per cent points over the year – up to 29% of the GVA of the industry; the level of budget support, the dynamics of which for the period 2013-2020 demonstrates average annual expenditures of UAH 3.3 billion, which is insufficient to ensure financial security.

To assess the financial risks of the microlevel, the financial resources of agricultural enterprises for 2013-2020 were analysed, where it was identified that their share accounts for 9.4% of the financial resources of the sectors of the economy on average. In addition, methodological approaches to the assessment of financial risks based on the analysis of the financial condition of enterprises

are systematised; regulatory approaches to the definition and assessment of financial risk according to the coefficient analysis and expediency of costs are generalised. To justify the necessity of developing a unified system of methodological approaches to the assessment of financial risk for the agricultural sector, the stages of the algorithm of detection – analysis – minimisation are proposed as a supplement to the financial analysis of enterprises.

The research will improve approaches to the methodology and tools for assessing financial risks of the agricultural sector and will contribute to the development of an efficient financial policy for reducing risks, restoring economic growth, and increasing the competitiveness and financial stability of agricultural enterprises through balancing fiscal and economic policy instruments, introducing a monitoring and diagnostic system, expanding the boundaries of financial analysis. Prospects for further research recognised the necessity of scientific support for the development of a unified methodology for the identification, assessment and prevention of financial risk in the agricultural sector.

► References

- [1] Gómez-Limón, J.A., & Sanchez-Fernandez, G. (2010). Empirical evaluation of agricultural sustainability using composite indicators. *Ecological Economics*, 69(5), 1062-1075.
- [2] Melnichuk, O., Radchenko, O., & Leontovych, S. (2021). *Analysis of the financial share of the national security of Ukraine. Stages of Formation and Development of the Economy of Independent Ukraine*. Germany: Verlag SWG imex GmbH, Nuremberg.
- [3] Kuznietsova, N.V., & Bidiuk P.I. (2020). *Theory and practice of financial risk analysis: A systems approach*. Kyiv: Institute for Applied System Analysis of the National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”.
- [4] Shyshkina, O. (2019). Terminological problems of understanding the nature of financial risk. *Problems and Prospects of Economics and Management*, 1, 253-264.
- [5] Dermenzhi, D.F. (2018). Determining the essence of financial risks and the main methods of their assessment in an unstable market economy. *Black Sea Economic Studies*, 25, 71-74.
- [6] Shvets, Yu.O. (2018). Risks in the activities of industrial enterprises: Types, assessment methods and measures to overcome the risk. *International Economic Relations and World Economy*, 17(2), 131-135.
- [7] Chaban, H. (2020). Economic and mathematical modeling of indicators of efficiency of the financial risk management system. *Investysii: Praktyka ta Dosvid*, 64-74.
- [8] Tkachenko, S.Ye. (2017). Theoretical principles of financial risk management of the enterprise. *Journal of Kharkiv Peter Vasylenko National Technical University of Agriculture*, 188, 169-177.
- [9] Fedulova, I.V., & Piatnytska, H.T. (2020). Significance of risk management, crisis management and compliance in the management of financial security of the enterprise. *Ekonomika ta Derzhava*, 8, 26-34.
- [10] Lukianenko, I.H. (2020). *Financial policy in terms of shadowing and imbalances in the labor market: methodology and tools*. Kyiv: NaUKMA.

- [11] Reznikova, O.O., Voitovskiy, K.Ye., & Lepikhov, A.V. (2020). *National systems of risk and threat assessment: Best world practices, new opportunities for Ukraine*. Kyiv: NISD.
- [12] Poida-Nosyk, N.N., & Cherleniak, I.I. (2021). Management of financial security at the macro and micro levels: Theoretical and methodological principles. *Scientific Bulletin of Uzhhorod University, Series "Economics"*, 1(57), 59-67. doi: 10.24144/2409-6857.2021.1(57).59-67.
- [13] Sakun, A., & Prystemskiy, O. (2019). Mechanisms for strengthening the financial security of agricultural development. *Economics and Management*, 2, 101-110.
- [14] Prokopchuk, O.T. (2019). The Risk Specific and their Management in Agriculture. *Collected Works of Uman National University of Horticulture, Economic Sciences*, 95(2), 24-41. doi: 10.31395/2415-8240-2019-95-2-24-41.
- [15] Yemeljanov, O.Yu (2020). Diagnosing the level of financial stability of agro-industrial enterprises. *Agrosvit*, 21, 3-9. doi: 10.32702/2306-6792.2020.21.3.
- [16] Posokhov, I.M., & Zhadan, Yu.V. (2019). Application of scientific and methodological frequency approach to a comprehensive quantitative assessment of financial and economic risks of enterprises in the oil and fat industry of Ukraine. *Biznes Inform*, 3, 255-264.
- [17] Sirenko, N.M., & Minaieva, A.S. (2015). Mechanism of financial risk management of agricultural enterprises. *Economic Forum*, 1, 167-171.
- [18] Cafiero, C., Capitanio, F., Cioffi, A., & Coppola, A. (2007). Risk and crisis management in the reformed European agricultural policy. *Canadian Journal of Agricultural Economics. Revue Canadienne D'agroéconomie*, 55(4), 419-441.
- [19] Andersen, T., & Schreder, P. (2010). *Strategic risk management practice; How to deal effectively with major corporate exposures*. Cambridge: Cambridge University Press.
- [20] Clapp, J. & Isakson, S.R. (2018). Risky returns: The implications of financialization in the food system. *Development and Change*, 49(2), 437-460.
- [21] van Asseldonk, M., Jongeneel, R., van Kooten, G.C., & Cordier, J. (2019). Agricultural risk management in the European Union: A proposal to facilitate precautionary savings. *EuroChoices*, 18(2), 40-46.
- [22] Janowicz-Lomott, M., & Łyskawa, K. (2017). The current situation and developments in the different member states on risk management in agriculture. In A. Karasavoglou & P. Pylchridou, (Eds.) *Agricultural sector issues in the European periphery: productivity, export and development challenges* (pp. 1-18). USA: Vernon Press.
- [23] Savchenko, N., & Savchenko, R. (2020). To the issue of accounting convergence and management control. *Scientific Horizons*, 4(89), 27-33. doi: 10.33249/2663-2144-2020-89-4-27-33
- [24] Official website of the Agency for Infrastructure Development of the Stock Market of Ukraine (ARIFRU). (n.d.). Retrieved from <https://smida.gov.ua/>.
- [25] Order of the Ministry of Finance No. 16 "On Approval of The Procedure for Assessing the Financial Condition of a Potential Beneficiary of an Investment Project, The Implementation of Which is Envisaged on the Basis of Financial Self-Sufficiency, as Well as Determining the Type of Collateral for Servicing and Repaying a Loan Provided by International Financial Organizations". (2016, July). Retrieved from <https://zakon.rada.gov.ua/laws/show/z1095-16#Text>.
- [26] Melnychuk, O. (2019). Formation and development of financial security of the agricultural sector of Ukraine. In Yu. Lupenko, Yu. Pasichnyk, (Eds.). *Social Transformations of the National Economy in the Context of European Integration Processes*. Austria: Shioda GmbH, Steyr. 39-47. Retrieved from <https://goo.su/tlG>.
- [27] Yevtushenko, H.V., Tymkiv, N.Ya., & Sheshenia A.A. (2016). Features of risk management in the agricultural sector of the economy. International Humanitarian University Herald. *Economics and Management*. Odesa: International Humanitarian University, 17, 49-52.
- [28] Official website of the State Statistics Service of Ukraine. (n.d.). Retrieved from <http://www.ukrstat.gov.ua/>.
- [29] Official website of the State Treasury of Ukraine. (n.d.). Retrieved from <https://www.treasury.gov.ua/ua>.

Методичні підходи до оцінки фінансових ризиків аграрного сектору

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► **Анотація.** З метою управління ризиками визначено специфічні для аграрного комплексу ризи та основні джерела інформації, що використовується при ідентифікації ризиків. Мета статті – обґрунтувати методичний інструментарій ідентифікації та оцінки фінансових ризиків для управління такими на прикладі аграрного сектору. Використано монографічний метод для огляду наукових публікацій дослідників та аналізу нормативної бази щодо ідентифікації та оцінки ризиків, системний і порівняльний аналізи для формування методичних підходів до оцінки фінансового ризику, емпіричний метод та синтез для аналізу індикаторів продовольчої безпеки, показників державного регулювання фінансових ризиків галузі, графічний метод для відображення динаміки окремих досліджуваних показників, абстрактно-логічний для теоретичних узагальнень та висновків. Проаналізовано методичні підходи до оцінки фінансового ризику. Уточнено складові методики оцінки фінансових ризиків, як системи принципів, підходів і методів наукового дослідження ідентифікації та виміру ризиків, теоретичні засади використання цих інструментів при вивченні аспектів безпеки національної економіки. Визначено, що фінансовий ризик стосується практично усіх сфер діяльності, виступає своєрідною оцінкою прийняття рішення в умовах невизначеності у сфері фінансування, інвестицій, управління активами та ресурсним потенціалом на різних рівнях управління. Для макрорівня оцінки фінансових ризиків проаналізовано динаміку індексу продовольчої безпеки як основного критерію наслідків фінансової безпеки галузі; стан тіньової економіки, як визначальний фактор системних фінансових ризиків; рівень бюджетної підтримки як фактор ефективності державної фінансової політики галузі та управління фінансовими ризиками. Для мікрорівня уточнено класифікацію методів оцінки фінансових ризиків на основі методів фінансового стану підприємств та аргументовано зв'язок між ними. Проведено експрес-аналіз фінансових ризиків на основі даних фінансової звітності за аналітичними коефіцієнтами на прикладі ПАТ «Миронівський хлібопродукт». Узагальнено нормативні методики визначення фінансового ризику відповідно до коефіцієнтного аналізу та аналізу доцільності витрат, а також Національного стандарту України. «Керування ризиком. Методи загального оцінювання ризику» з метою обґрунтування необхідності формування єдиної системи методичних підходів до оцінки фінансового ризику. Доведено необхідність формування єдиної методики оцінки фінансових ризиків агросектору, для чого проаналізовано фінансові ресурси галузі за 2013-2020 рр. та встановлено, що на їхню частку припадає 9,4 % ресурсів галузей економіки. Розширено методичні підходи до оцінки фінансових ризиків шляхом залучення у сферу аналізу макрорівень аграрної галузі, оскільки вона слугує гарантом продовольчої безпеки, наявна потреба постійно здійснювати моніторинг стану фінансових ресурсів та його регулювання шляхом прямої бюджетної підтримки, податкових преференцій, а також регулятивних заходів для підтримання конкурентоспроможності галузі. Узагальнено, що зміст оцінки фінансових ризиків аграрних підприємств визначається відповідно до мети та основних завдань, які мають градацію на рівнях ієрархії. Побудовано схему методики оцінки фінансових ризиків аграрної галузі. Удосконалено методичне забезпечення процесів оцінки фінансових ризиків, що може слугувати основою формування єдиної Методики аналізу фінансового стану та фінансових ризиків аграрних підприємств. Запропоновано етапи проведення оцінки фінансового ризику для аграрної галузі за алгоритмом: виявлення – аналіз – мінімізація, що може бути корисно аграрним підприємствам при здійсненні комплексного фінансового аналізу. Окремі висновки дослідження можуть бути використані при формуванні фінансової політики аграрної галузі

► **Ключові слова:** аграрні підприємства, методичні підходи, оцінка, аналітичні показники, фінансові ризики, фінансовий стан