

DOI: [10.55643/fcaptop.2.61.2025.4679](https://doi.org/10.55643/fcaptop.2.61.2025.4679)

**Nataliia Struk**

PhD in Economics, Associate Professor  
of the Department of Marketing,  
Stepan Gzhytskyi National University of  
Veterinary Medicine and  
Biotechnologies, Lviv, Ukraine;  
ORCID: [0000-0002-5640-5512](https://orcid.org/0000-0002-5640-5512)

**Olena Karpil**

PhD in Economics, Associate Professor  
of the Department of Marketing and  
Logistics, Lviv Polytechnic National  
University, Lviv, Ukraine;  
ORCID: [0000-0002-4133-1936](https://orcid.org/0000-0002-4133-1936)

**Mariana Dorosh-Kizym**

PhD in Economics, Associate Professor  
of the Department of Marketing,  
Stepan Gzhytskyi National University of  
Veterinary Medicine and  
Biotechnologies, Lviv, Ukraine;  
ORCID: [0000-0001-5680-6669](https://orcid.org/0000-0001-5680-6669)

**Lesia Danchak**

PhD in Economics, Associate Professor  
of the Department of Business  
Economics and Investment, Lviv  
Polytechnic National University, Lviv,  
Ukraine;  
ORCID: [0000-0001-8768-7543](https://orcid.org/0000-0001-8768-7543)

**Viktoriia Homolska**

PhD in Economics, Associate Professor  
of the Department of Management and  
Marketing in Publishing and Printing,  
Lviv Polytechnic National University,  
Lviv, Ukraine;  
e-mail: [viktoriahomolska@gmail.com](mailto:viktoriahomolska@gmail.com)  
ORCID: [0000-0003-4600-4915](https://orcid.org/0000-0003-4600-4915)  
(Corresponding author)

Received: 16/12/2024

Accepted: 15/03/2025

Published: 30/04/2025

© Copyright  
2025 by the author(s)



This is an Open Access article  
distributed under the terms of the  
[Creative Commons CC-BY 4.0](https://creativecommons.org/licenses/by/4.0/)

# ASSESSMENT OF THE IMPACT OF MARKETING 5.0 ON THE FINANCIAL AND ECONOMIC SECURITY OF AGRO-INDUSTRIAL ENTERPRISE

## ABSTRACT

Marketing 5.0 promotes greater transparency and environmental responsibility, which meets the modern requirements of consumers and regulators, ensuring the sustainable development of agro-industrial enterprises. We believe that in today's conditions, this is exactly what modern agribusiness needs. The purpose of the article is to propose an approach to assessing the effectiveness of financial and economic security management of an agro-industrial enterprise, taking into account the transition to marketing 5.0 standards. The object of the study is the financial and economic security management system of an agro-industrial enterprise. Determining the goal and object contributes to the formation of the task of the article, which is to explain in detail the author's approach to assessing the effectiveness of financial and economic security management of an agro-industrial enterprise, taking into account the transition to marketing 5.0 standards. As a result, based on the methodology of integral multi-criteria evaluation, a structural and functional model of analysis of assessments of the level of intensity of implementation of marketing 5.0 according to the dynamics of the market of agricultural products was proposed. An operating enterprise of the agro-industrial sector was selected to assess the level of intensity of implementation of marketing 5.0. A system of conditions for controlling the level of provision of safe marketing development of an enterprise of the agro-industrial sector and a system of conditions for controlling the level of provision of financial and economic security was formed, taking into account the activation of the principles of marketing 5.0. The proposed systems of control conditions are aimed at strengthening the control of the provision of effective strategic management of financial and economic security of an agro-industrial enterprise, taking into account the aspect of the role of marketing 5.0.

**Keywords:** methodological approach, financial and economic security, enterprise activities, security development, management assessment, marketing 5.0

**JEL Classification:** M31, Q14, G32

## INTRODUCTION

In Marketing 3.0, consumers expect to receive not only benefits and emotional satisfaction but also spiritual fulfilment from the chosen brand. Therefore, companies build their positioning in accordance with their values. Their products and activities are aimed not only at making a profit but also at solving the most complex global social and environmental problems, such as ensuring safety and forming a holistic safe environment for functioning. We also believe that marketers are still at the stage of transition and adaptation to the digital world. And the so-called Marketing 4.0 should still remain a priority. However, the COVID-19 pandemic and a full-scale war in the very heart of Europe have really accelerated the digitalization of business. Marketing 5.0 thus includes elements of the human-centric Marketing 3.0 and the technology-enhanced Marketing 4.0. Marketing 5.0 arises in response to three major challenges: the generation gap, the polarization of society by level of affluence, and the digital divide. For the first time in history, five generations with different views, preferences, and behaviours live together on Earth. Marketing 5.0 is the application of technologies that imitate humans to create, communicate, deliver, and enhance value for the consumer throughout the customer

journey. One of the key themes in Marketing 5.0 is what we call "next-generation technologies" for security, which includes a group of technologies that seek to replicate the work of expert marketers. These include artificial intelligence (AI), natural language processing (NLP), sensors, robotics, augmented reality (AR), virtual reality (VR), the "Internet of Things," and blockchain. The combination of these technologies is the driving force behind Marketing 5.0. The Marketing 5.0 paradigm emerged as a response to such major challenges as generational differences, polarization of society due to the gap between rich and poor; different levels of the digital economy. Competition in the modern world forces companies to implement new achievements in the field of digital technologies as quickly as possible. Using digital marketing, the agro-industrial sector can build its own brands and promote its products to a wider target audience. In addition, digitalization significantly accelerates processes such as market research, adaptation to changing consumer needs, and improving the results of interaction between businesses and customers. Conversely, insufficient digitalization negatively affects business, leading to a decrease in sales and profits.

Global economic development trends are interconnected and interdependent. In addition, the rapid development of industries 4.0 and 5.0, together with the progress of digitalization, undoubtedly contribute to the growth of consumption and the improvement of people's quality of life. The digital economy has a significant impact on the financial and economic security of agro-industrial enterprises. Today, consumers not only look for products/services that meet their expectations but also widely share reviews and opinions about products/services/brands on social networking sites and the Internet in general. Digital marketing essentially refers to managing a company's online presence using various technological tools to achieve marketing goals and develop offers that create value for customers, the company and stakeholders. Digital marketing also provides a more effective way to reach a wide audience and expand the customer base by attracting existing and potential customers.

Digitalization has also accelerated the trend towards human-centrism. Generation Y and, to some extent, Generation Z are gravitating towards the digital economy. The rise of mobile, social media, and e-commerce has changed the customer journey. Marketers have adapted to these changes by communicating and delivering products and services omnichannel. They have begun the transition from traditional to digital marketing and implemented Marketing 4.0. But with the rise of Generation Z and Alpha, it is time for the next evolutionary leap. The main interests and concerns of these two youngest generations are aimed at two directions. First, positive change for humanity and improving the quality of life for people. Second, stimulating further technological advancement in all aspects of humanity. To serve Generation Z and Alpha, marketers must continue to apply next-generation technologies to improve people's lives. In other words, Marketing 5.0 will combine Marketing 3.0 (human-centred) and Marketing 4.0 (driven by technology).

In today's conditions, the world can no longer be surprised by the fact that Industry 4.0 has already arrived and is actively developing. The global community is developing so rapidly that talk about the so-called Society 4.0 has been going on for quite a long time. It is logical that other spheres of human activity were also brought under the standards of 4.0, including the emergence of such a concept as Marketing 4.0. It had its own share of scientific and practical activity and its own characteristic features. At the same time, the rapid development of artificial intelligence systems increased attention to the problems of human-machine interaction, human-centricity, intellectualization and intelligent management systems. Ideas and thoughts began to be heard about a smooth transition to Industry 5.0. Of course, a logical step was to discuss Society 5.0 and Marketing 5.0 within Industry 5.0. If with Industry 5.0 and Society 5.0, it is more or less clear that the development of the latter continues the ideas of Industry and Society 4.0, then in the context of Marketing 5.0 there are a number of distinctive principles that should be characterized. First of all, it should be noted that any transformations in the marketing activities of an enterprise in one way or another affect its security potential. At the same time, the basis of the security potential is the level of financial and economic security. It is also necessary to emphasize the fact that marketing depends on the sphere of activity of the enterprise. For enterprises of the agro-industrial sector, the vision of Marketing 5.0 and ensuring financial and economic security differs from enterprises of other sectors.

Agro-industrial enterprises provide 25% of export earnings to the country's budget, are the resource base of many sectors of the national economy, and are the guarantee of the state's food security. Social stability depends on their sustainable development, because the agro-industrial complex, as a complex system, includes more than 100 sectors and subsectors of the national economy, many sectors that are partially or fully related to them. The effectiveness of the activities of enterprises depends primarily on the internal system of goals, the system of organization and management of processes, the production of innovative and competitive products and the introduction of new technologies. Achieving the set goals is due to the need to ensure the effectiveness of the management system of agro-industrial enterprises, which is based on improving the mechanisms for ensuring the financial and economic security of enterprises, among which the leading place belongs to the marketing and management system. The importance and relevance of the tasks facing enterprises necessitate the joint interaction of the management and marketing systems, which allows for the most effective and timely

resolution of problems arising from the influence of external and internal changing environmental factors in the shortest possible time. Especially in wartime conditions.

The transformation of the country's economy has led to the fact that agro-industrial enterprises are forced to look for new approaches, ways, methods and mechanisms for ensuring financial and economic security. Market changes require agro-industrial enterprises to form a development strategy based on innovative management methods. It is advisable to base the formation of security development strategies on the basis of verified data using appropriate management tools. In such conditions, it is advisable to form a security development strategy for an agro-industrial enterprise on the basis of relevant new marketing research.

The old model of the functioning of the domestic energy market negatively affected the activities of enterprises, especially those located in rural areas, due to their lack of opportunities to choose energy supply sources. The new model should already take into account the principles of Society 5.0 and expand such opportunities, however, market regulation of energy supply tariffs does not always have a positive effect on the formation of energy supply costs, which affects the profitability of enterprises. In addition, the reliability of energy supply in rural areas is significantly lower, which negatively affects the financial and economic security of agro-industrial enterprises, causing an increase in the cost of production and a decrease in its competitiveness both in the domestic market and in foreign markets. As a result, the issue of ensuring the marketing component of the financial and economic security of agro-industrial enterprises becomes particularly relevant.

## LITERATURE REVIEW

Let's form Table 1 where synthesizes key insights from the listed references and relates them to the concept of Marketing 5.0 and its impact on the financial and economic security of agro-industrial enterprises.

Reference	Focus/Conceptual Domain	Key Findings	Contribution to Understanding Marketing 5.0 and Financial-Economic Security in Agro-Industrial Enterprises
Martinette & Obenchain-Leeson (2012)	Learning orientation, business performance, competitive advantage in service organizations	Demonstrates that a strong learning orientation enhances business performance and competitive advantage. Increased learning capabilities lead to improved adaptability and responsiveness to market changes.	In an agro-industrial context, embracing ongoing learning aligns with Marketing 5.0's emphasis on adapting to rapidly evolving consumer demands and regulatory changes.
Harjadi et al. (2020)	Market orientation, product innovation	Indicates that market orientation combined with product innovation enhances competitive advantage and positively affects marketing performance. Recognizing consumer needs leads to better product offerings	For agro-industrial enterprises shifting towards Marketing 5.0—where consumer-centricity and sustainability matter—market orientation and continuous innovation secure long-term viability
Gligor et al. (2019) and Arsenijevic & Jovic (2019)	Artificial intelligence marketing, chatbots	AI-driven chatbots enhance customer engagement, streamline communication, and improve the customer experience. This can lead to efficiency gains and competitive differentiation	Integrating AI-driven tools (a core aspect of Marketing 5.0) into agro-industrial marketing enhances transparency and responsiveness. Improved communication with customers about sustainability and product origins bolsters consumer trust, indirectly supporting economic security through increased brand loyalty and stable revenue streams
Thuraisingham (2020)	Artificial intelligence, cybersecurity, social media	AI's role in safeguarding digital marketing channels is pivotal for maintaining brand reputation and consumer trust	Marketing 5.0 involves digital transformation, making agro-industrial firms reliant on secure online platforms
Aljumah et al. (2022) and Shanmugam et al. (2023)	Artificial intelligence in digital marketing, profitability, market potential	AI-driven digital marketing tools improve profitability and expand market potential by personalizing the consumer experience and improving customer insights	As agro-industrial enterprises pivot to Marketing 5.0, the integration of AI-driven solutions enriches marketing strategies. Personalized offerings and targeted campaigns can improve profit margins, ensure resource-efficient production, and build economic resilience
Bondarenko et al. (2020), Karpenko et al. (2021) and Sylkin et al. (2020)	Financial security modelling, assessment methodologies Economic security, investment infrastructure, national growth	Proposes methodology for assessing financial security levels within enterprises. A country's economic security and attractiveness are linked to stable market conditions and effective marketing strategies.	For agro-industrial enterprises, aligning with Marketing 5.0's sustainability and transparency standards enhances their international competitiveness and appeal.
Sirenko et al. (2020)	Socialization of education, development in the agricultural sector	Socialization in education contributes to the professional growth of individuals in the agricultural sector, improving their adaptability to new technologies and marketing trends	By fostering a workforce skilled in new marketing methodologies and digital tools, agro-industrial enterprises can better apply Marketing 5.0 strategies

The scientific and practical literature considers Marketing 5.0 from a high-level strategic perspective. To some extent, we will reveal the know-how of using advanced marketing technologies, but this is not a technical book. Our approach is that technology should follow strategy. Thus, Marketing 5.0 concepts are tool-independent. Scientists and practitioners came to the conclusion that Marketing 5.0 in the process of digital transformation itself will acquire a new quality, more focused on the influence of manufacturers on buyers and thereby reformat the retail, housing, raw material and currency markets, because effective demand will no longer directly take into account the multidirectionality of supply and demand trends, and will also adjust in its more private manifestations when transitioning from buyer strata from market to market (depending on the level of its innovation) and age restrictions, depending on the models of attracting "baby boomers", "x", "y", "z" and "alpha" focus groups of buyers. The reviewed literature underscores that the transition to Marketing 5.0—characterized by advanced technologies, ethical branding, consumer focus, and environmental responsibility—enhances the financial and economic security of agro-industrial enterprises. Integrating learning orientations, market orientations, innovation, AI tools, cybersecurity measures, and strong investment frameworks supports stable and sustainable growth.

## AIMS AND OBJECTIVES

The purpose of the article is to propose an approach to assessing the effectiveness of financial and economic security management of an agro-industrial enterprise, taking into account the transition to marketing 5.0 standards. The object of the study is the financial and economic security management system of an agro-industrial enterprise. For this, the main tasks are:

- incorporate integral multi-criteria evaluation techniques into the assessment framework;
- propose a comprehensive approach for assessing the effectiveness of financial and economic security management in the context of Marketing 5.0.

## METHODS

Within the framework of our study, in order to assess the effectiveness of financial and economic security management of an agro-industrial sector enterprise, taking into account the transition to Marketing 5.0 standards, an integrated multi-criteria approach was applied. Therefore, the basis of the methodology is the synthesis of quantitative and qualitative indicators in order to form a holistic picture of the level of intensity of Marketing 5.0 implementation and its impact on financial and economic security (Table 2).

Table 2. The essence of integrated multi-criteria evaluation.	
Essential Aspect	Characteristics
Definition	An assessment method that allows you to simultaneously take into account several criteria for decision-making or performance assessment, providing a comprehensive analysis of the research object
Basic Principles	Complexity: Taking into account various aspects and criteria. Objectivity: Using clear and measurable indicators. Systematicity: Interrelationship between criteria.
Feature	The key feature of the integrated multi-criteria assessment of the level of effectiveness of financial and economic security management of enterprises in the agro-industrial sector is that it is additionally reinforced by a quantitative assessment of the ability to progressive marketing development
Advantages	Provides a more complete and comprehensive assessment. Allows you to take into account both quantitative and qualitative indicators. Contributes to making informed decisions.

The methodological approach integrates qualitative and quantitative data, applies multi-criteria decision-making tools, and leverages system modelling techniques.

## RESULTS

Taking as a basis the basis of multi-criteria analysis (Dean, 2018), we will present the author's vision of the evaluation model on the topic of our article. Therefore, the integrated multi-criteria assessment of the level of effectiveness of financial

security management of the enterprise, taking into account the activation of the transition to marketing 5.0, will be calculated as follows (1):

$$K_j^{(CDII)} = (1-p_j)1/m [ R_{np}^{(N)} + OA^{(N)} + FB^{(N)} + KO_{oz}^{(N)} + I_{HA}^{(N)} = 1/2(PB_{NTP} + (1-U_{tca}))^{(N)} ] \quad (1)$$

where  $j = 1 \div n$  – represent the years of the retrospective period ( $n = 5$ );  $p_j$  – are weighted point estimates derived from potential theory methods and the principles of maximizing uncertainty functions (these estimates assign a higher priority to retrospective periods that contributed less to the total value of the evaluation functional);  $m$  – number of components of the evaluation functional;  $R_{np}$  – profitability of sales, share of units;  $OA$  – asset turnover, share of units;  $FB$  – financial leverage, share of units;  $KO$  – coefficient of renewal and transformation of activity, share of units;  $I$  – investments in the transition to marketing 5.0., share of units;  $1/2(PB_{NTP} + (1-U_{tca}))^{(N)}$  – the ability to increase financial and economic security taking into account the level of activation of the use of new generation technologies and the intensity of competition, share of units;  $PB$  – assessment of the level of activation (intensification) of the transition to Marketing 5.0 standards;  $U_{tca}$  – assessment of the level of intensity of the transition to Marketing 5.0 depending on the dynamics of the agricultural products market. The index "N" indicates that future computational operations will utilize normalized values of the components used in the evaluation functionality.

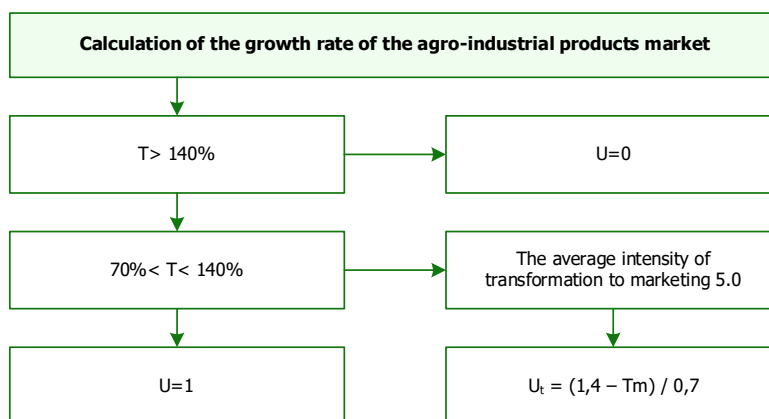
The assessment of the level of intensity of the transition to Marketing 5.0 depending on the market dynamics indicator (U) is calculated based on the growth rates of the agricultural products market (T), which in turn is calculated as (2):

$$T_m = (V_{m1} - V_{m0} / V_{m0}) 12 / t + 1 \quad (2)$$

where  $V_{m1}$ ,  $V_{m0}$  - market volumes at the end of the reporting and base periods (calculations are made on total assets: total liabilities + capital);  $t$  - the term of the analyzed period (number of months).

The indicator  $T_m$  is needed to determine the level of intensity of an enterprise's transition to Marketing 5.0 standards: if the growth rate is high, it indicates a more active implementation of new marketing approaches.

It is reasonable to assume that in the process of analyzing the level of intensity of the transition to marketing standards 5.0 according to the dynamics of the agricultural products market, the values of the minimum and maximum limits of the growth rate of this market can be accepted at the level of 70% - 140% per year. At the same time, in the case when  $T_m$  is less than 1.4 (i.e. 140%), then such intensity is minimal. In the study, these values reflect very weak growth (if less than 70%) or excessively high growth (over 140%). The upper bound of 140% was chosen specifically to include scenarios of very rapid market expansion in the model, which calls for the most active implementation of Marketing 5.0. The structural and functional scheme of assessing and analyzing the level of intensity of the transition to marketing 5.0 according to the dynamics (growth rate) of the agro-industrial products market ( $U_t$ ) is shown in Figure 1.



**Figure 1. The structural and functional scheme of assessing and analyzing the level of intensity of the transition to marketing 5.0 according to the dynamics (growth rate) of the agro-industrial products market.**

For clarity of presentation of the methodological approach to assessment, we will choose an operating agro-industrial enterprise in Ukraine and its performance indicators for the last 5 years (Figure 2).

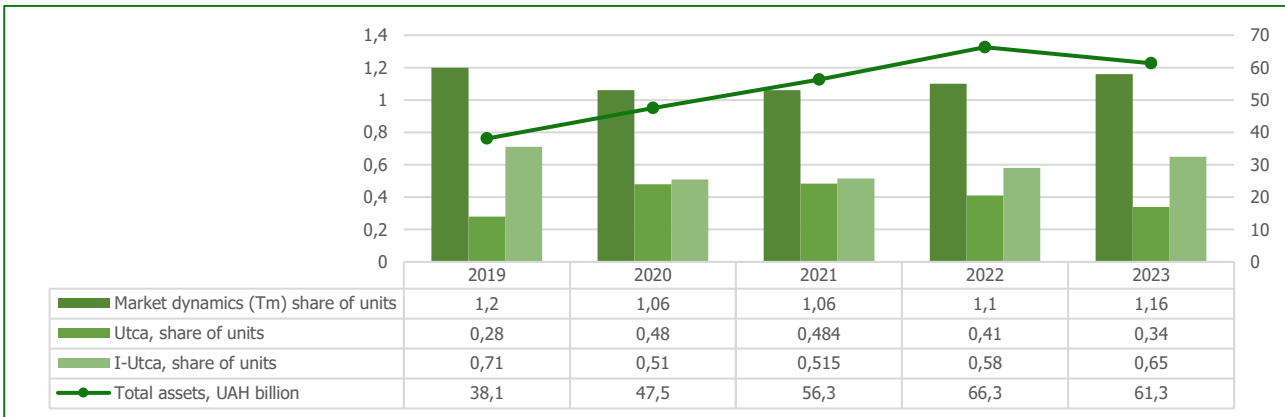


Figure 2. Indicators (estimates) of the level of intensity of transition to marketing standards 5.0 Private joint-stock company «Dzvin».

Now, taking into account equality (1), we will form a system of conditions for controlling the level of financial and economic security of an agro-industrial enterprise, taking into account the transition to marketing standards 5.0, and present this system in the form of the corresponding equalities (3):

$$\begin{cases}
 k_j^{(CDII)} = (1 - p_j)1/m [R_{np}^{(N)} + OA^{(N)} + FB^{(N)} + KO_{oz}^{(N)} + I_{HA}^{(N)} = 1/2(PB_{NTP} + (1 - U_{tca}))^{(N)}] \\
 k_j^{(CDII)} \leq b * k_{rvGR}^{(CDII)}, b = 0.9/0.95 \\
 d(k_j^{(CDII)}, k_{j+1}^{(CDII)}) \\
 I_{j,j+1}^{(CDII)} = k_{j+1}^{(CDII)} / k_j^{(CDII)} \\
 I_{j,j+1}^{(CDII)} \leq 1 - \Delta I(k^{(CDII)})
 \end{cases} \quad (3)$$

where:  $j = 1/n$ ,  $n=5$ ;  $i=1/m$ ;  $b$  – correction coefficient for determining the limit deviations of the indicator ( $k_j^{(CDII)}$ );  $d(k_j^{(CDII)}, k_{j+1}^{(CDII)})$  – euclidean distance;  $d$  – desired limit limits of the indicator ( $k_j^{(CDII)}, k_{j+1}^{(CDII)}$ );  $I_{j,j+1}^{(CDII)}$  – indices of the indicator  $k_j^{(CDII)}$

Let us consider the implementation of the proposed improvement of the methodological approach to increasing the efficiency of the financial and economic security management toolbox, taking into account the activation of the transition to marketing 5.0, using a practical example. Figure 3 shows the key indicators of financial and economic activity for assessing the management of financial and economic security of the Private joint-stock company «Dzvin».

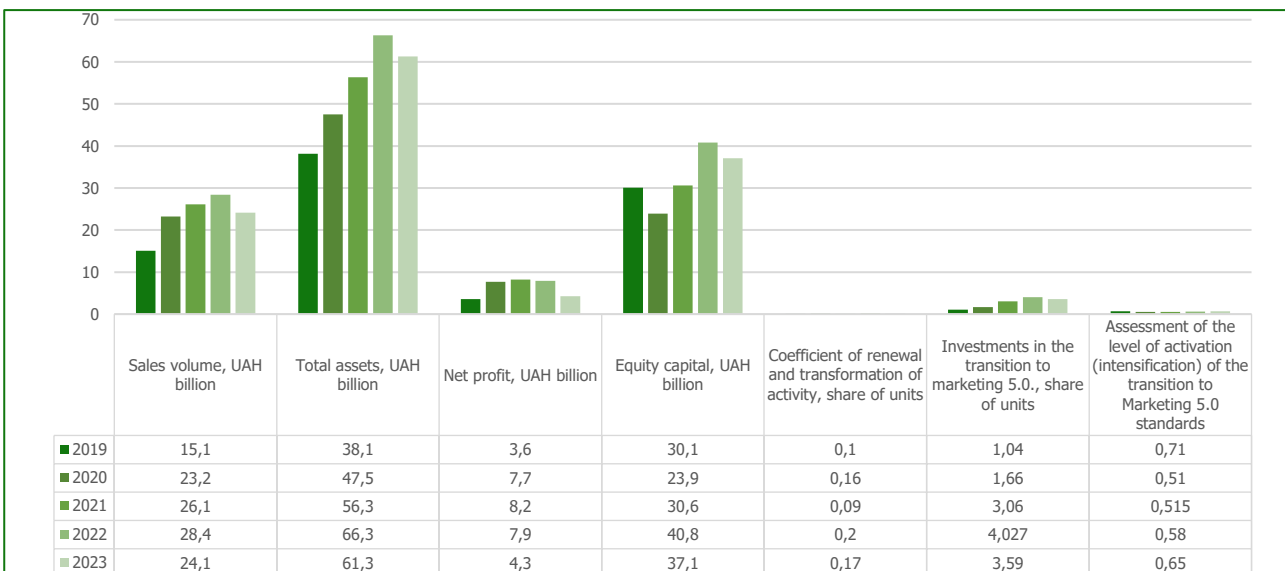


Figure 3. Key indicators of financial and economic activity for assessing the management of financial and economic security of Private joint-stock company «Dzvin».

Next, we need to normalize the key indicators of the parts constituting the functional assessment of the financial and economic security of an agro-industrial enterprise, taking into account its transition to Marketing 5.0 (Table 3).

**Table 3. Normalized values of the indicators of the components of the functional assessment.**

Indicators	2019	2020	2021	2022	2023
Sales profitability (x1)	0.79	1.1	1.03	0.92	0.59
Asset turnover (x2)	0.9	1.12	1.06	0.98	0.89
Financial leverage (x3)	0.76	1.1	1.1	0.97	0.99
Coefficient of renewal and transformation of activity (x4)	0.56	0.84	0.5	1.02	0.92
Capacity to transition to new marketing standards 5.0 (x5)	0.96	0.89	0.81	0.8	0.78
Investments in the transition to marketing 5.0. (x6)	0.26	0.42	0.77	1.01	0.9
Maximum value (xij)	0.96	1.19	1.1	1.02	0.99

In Table 3, the initial data are normalized to a single scale. This is necessary to compare diverse indicators and to include them in a single integral multi-criteria measure (1). Each of these indicators (x1, x2, ..., x6) is a component of the overall assessment of the effectiveness of financial and economic security management, taking into account the transition to Marketing 5.0, reflecting different aspects of the enterprise's activity.

This, in turn, makes it possible to calculate the values of the indicators of the conditions for controlling financial and economic security management, taking into account the intensification of the transition to Marketing 5.0 standards for our selected agro-industrial enterprise (Table 4).

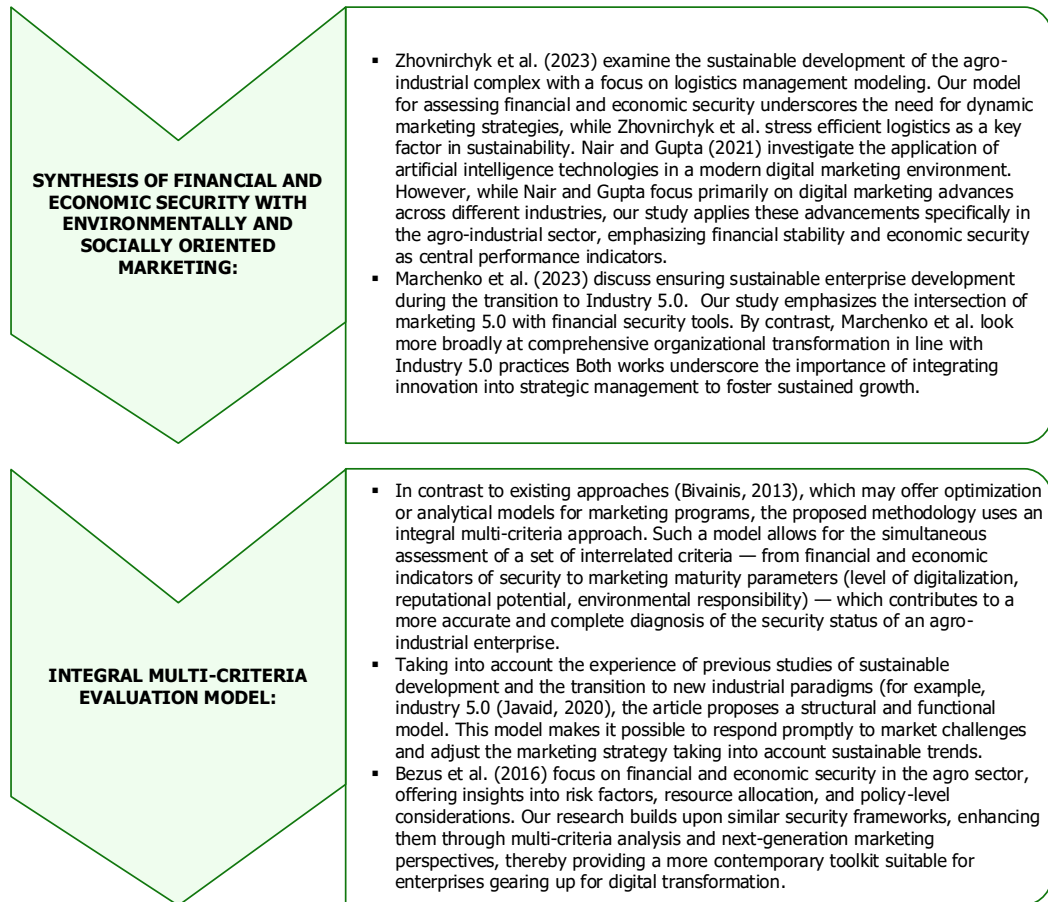
**Table 4. Results of calculating the values of indicators of conditions for controlling financial and economic security management, taking into account the activation of the transition to marketing standards 5.0.**

Indicators	2019	2020	2021	2022	2023
$k_j^{(CDII)}$	0.55	0.73	0.71	0.78	0.68
$d(k_j^{(CDII)}, k_{j+1}^{(CDII)})$	-	0.25	0.11	0.09	0.11
$I_{j,j+1}^{(kCDII)}$	-	0.13	0.95	1.1	0.87
$k_j^{(CDII)} \leq b * k_{VGR}^{(CDII)}$	0.24	0.06	0.09	0.01	0.11

We see that the trends in the dynamics of the values of the indicators of the conditions for controlling financial and economic security management, taking into account the intensification of the transition to Marketing 5.0 standards, allow us to reflect the real processes of the functioning of an agro-industrial enterprise. We believe that the proposed methodological approach is quite effective in improving the toolkit and can be recommended for practical application.

## DISCUSSION

The approach proposed in the article to assessing the effectiveness of managing the financial and economic security of an agro-industrial enterprise, taking into account the impact of the transition to Marketing 5.0, is based on the interpretation of marketing activities not only as a tool for promoting products or brands but also as a systemic driver of sustainable development, a responsible attitude towards the environment and increasing the level of consumer trust (Figure 4).



**Figure 4. Comparison of results with other similar.**

In essence, at the present stage, it is the desire to obtain a high level of financial and economic security, as the main driving force, that forces manufacturers to constantly look for new ways to increase their own competitiveness. From the point of view of determining the economic essence of competitiveness, it is necessary to clearly identify all the main factors that influence the process of its formation. New practices (Inswanto, et al., 2024; Elgarhy, 2023 and Bivainis, 2013) are increasingly using marketing-management approaches in order to strengthen their own level of financial and economic security. At the same time, more and more scientists point out that one of the main challenges facing marketers today is extreme polarization, which permeates all aspects of human life: from work to ideologies, lifestyles, and markets. The middle class begins to disappear, falling down or rising up. The so-called polarization and class divides are important. Polarization limits competitive markets. But more importantly, it limits opportunities, especially in light of a slowing economy. But we believe that it needs a separate assessment in the future.

## CONCLUSIONS

Thus, we will emphasize the key results obtained as a result of the research:

1. A structural-functional model for assessing the intensity of the implementation of Marketing 5.0 has been proposed.
2. A system of conditions for controlling the level of safe marketing development of an agro-industrial enterprise has been formed.
3. A methodological approach to assessing the effectiveness of financial and economic security management has been developed.
4. The proposed tools strengthen strategic management taking into account the requirements of Marketing 5.0 in the form of a new approach to assessment.

As a result, the methodological approach we have developed to assess the level of effectiveness of the level of financial and economic security for enterprises in the agro-industrial sector, taking into account the principles of Marketing 5.0,

becomes a necessary element for the further development of the methodology for assessing all business decisions regarding the safe development of these enterprises in today's conditions of uncertainty. At the same time, it is important to form a mechanism that will make it possible to determine the trajectory of the further development of Marketing 5.0 based on the results of applying our approach to assessment. We believe that it is in this direction that scientists and practitioners need to continue to work.

## ADDITIONAL INFORMATION

### AUTHOR CONTRIBUTIONS

All authors have contributed equally.

### FUNDING

The Authors received no funding for this research.

### CONFLICT OF INTEREST

The Authors declare that there is no conflict of interest.

## REFERENCES

1. Aljumah, A. I., Nuseir, M. T., & El Refae, G. A. (2022). Business analytics and competitive advantage for SMEs in UAE: A mediating role of technology assets. In 2022 International Arab Conference on Information Technology (ACIT) (pp. 1–9). IEEE Xplore. <https://doi.org/10.1109/ACIT57182.2022.9994149>
2. Arsenijevic, U., & Jovic, M. (2019). Artificial intelligence marketing: Chatbots. In 2019 international conference on artificial intelligence: Applications and innovations (IC-AIAI), Belgrade, Serbia, pp. 19-193. <https://doi.org/10.1109/IC-AIAI48757.2019.00010>
3. Bezus, R. M., Dubrova, N. P., & Pashchenko, O. S. (2016). Finansovo-ekonomichna bezpeka ahranoho sektoru. *Efektivna ekonomika*, 12. <http://www.economy.nayka.com.ua/?op=1&z=5412>
4. Bivainis, J., & Daukševičiūtė, I. (2013). An optimisation model for the marketing programmes of companies. *Business: Theory and Practice*, 14(3), 228-239. <https://doi.org/10.3846/btp.2013.24>
5. Bondarenko, A.F., Zakharkina, L.S., Syhyda, L.O., & Saher, L.Y. (2020). The economic and marketing attractiveness of countries: Measurement and positioning in terms of economic security. *International Journal of Sustainable Development and Planning*, 15(4), 439-449. <https://doi.org/10.18280/ijstdp.150404>
6. Dean, M. (2018). Assessing the Applicability of Participatory Multi-Criteria Analysis Methodologies to the Appraisal of Mega Transport Infrastructure. Ph.D. Dissertation. The Bartlett School of Planning, University College London, UK. [https://www.academia.edu/43180035/Assessing\\_the\\_Applicability\\_of\\_Participatory\\_MultiCriteria\\_Analysis\\_Methodologies\\_to\\_the\\_Appraisal\\_of\\_Mega\\_Transport\\_Infrastructure](https://www.academia.edu/43180035/Assessing_the_Applicability_of_Participatory_MultiCriteria_Analysis_Methodologies_to_the_Appraisal_of_Mega_Transport_Infrastructure)
7. Elgarhy, S. D., & Abou-Shouk, M. (2023). Effects of entrepreneurial orientation, marketing, and innovation capabilities, on market performance: The mediating effect of sustainable competitive advantage. *International Journal of Contemporary Hospitality Management*, 35(6), 1986–2004. <https://doi.org/10.1108/IJCHM-04-2022-0508>
8. Gligor, D., Gligor, N., & Maloni, M. (2019). The supplier's market orientation impacts the customer market orientation-performance relationship. *International Journal of Production Economics*, 216, 81–93. <https://doi.org/10.1016/j.ijpe.2019.04.022>
9. Harjadi, D., Fatmasari, D., & Nurhasanah, A. S. (2020). Market orientation and product innovation to increase competitive advantages and its impact on marketing performance. *Al-Amwal: Jurnal Ekonomi Dan Perbankan Syariah*, 12(1), 12–21. <https://doi.org/10.24235/amwal.v1i1.5457>
10. Iswanto, D., Handriana, T., Rony, A.H.N., & Sangadji, S.S. (2024). Influencers in tourism digital marketing: A comprehensive literature review. *International Journal of Sustainable Development and Planning*, 19(2), 739-749. <https://doi.org/10.18280/ijstdp.190231>
11. Javaid, M., & Haleem, A. (2020). Critical components of Industry 5.0 towards a successful adoption in the field of manufacturing. *Journal of Industrial Integration and Management*, 5(3), 327-348. <https://doi.org/10.1142/S24244862220500141>
12. Karpenko, L., Izha, M., Chynytska, I., Maiev, A., & Hunko, K. (2021). The growth of the country's economic security level based on the investment infrastructure development projects. *Entrepreneurship and Sustainability Issues*, 8(4), 713–729. [https://doi.org/10.9770/jesi.2021.8.4\(44\)](https://doi.org/10.9770/jesi.2021.8.4(44))
13. Marchenko, O., Guk, O., Borutska, Y., Pacheva, N., & Zaichenko, V. (2023). Ensuring sustainable development of the enterprise during the transition to industry 5.0. *International Journal of Sustainable Development and Planning*, 18(4), 1149-1154. <https://doi.org/10.18280/ijstdp.180418>

14. Martinette, L. A., & Obenchain-Leeson, A. (2012). The relationship between learning orientation and business performance and the moderating effect of competitive advantage: A service organisation perspective. *Journal of Service Science (JSS)*, 5(1), 43–58. <https://doi.org/10.19030/jss.v5i1.6940>
15. Nair, K., & Gupta, R. (2021). Application of AI technology in modern digital marketing environment. *World Journal of Entrepreneurship, Management and Sustainable Development*, 17(3), 318-328. <https://doi.org/10.1108/WJEMSD-08-2020-0099>
16. Shanmugam, G., Rajendran, D., Thanarajan, T., Murugaraj, S.S., & Rajendran, S. (2023). Artificial intelligence as a catalyst in digital marketing: Enhancing profitability and market potential. *Ingénierie des Systèmes d'Information*, 28(6), 1627-1636. <https://doi.org/10.18280/isi.280620>
17. Sirenko, N., Lunkina, T., Burkovska, A., Mikulyak, K., & Gannichenko, T. (2020). The Socialization of Education as a Means of Developing Entities Within the Agricultural Sector. *Management Theory and Studies for Rural Business and Infrastructure Development*, 42(4), 441–451. <https://doi.org/10.15544/mts.2020.45>
18. Sylkin, O., Kryshchanovych, M., Bekh, Y., & Riabeka, O. (2020). Methodology of forming model for assessing the level financial security. *Management Theory and Studies for Rural Business and Infrastructure Development*, 42(3), 391-398. <https://doi.org/10.15544/mts.2020.39>
19. Thuraisingham, B. (2020). The role of artificial intelligence and cyber security for social media. In 2020 IEEE international parallel and distributed processing symposium workshops (IPDPSW). Orleans, LA, USA, pp. 1-3. <https://doi.org/10.1109/IPDPSW50202.2020.00184>
20. Zhovnirchuk, Y., Bondarchuk, N., Cherkaska, V., Terletska, V., & Gusiev, V. (2023). Sustainable development of the agro-industrial complex through modeling aspects of logistics management. *International Journal of Sustainable Development and Planning*, 18(6), 1911-1917. <https://doi.org/10.18280/ijstdp.180627>

Струк Н., Карпій О., Дорош-Кізім М., Данчак Л., Гомольська В.

## ОЦІНЮВАННЯ ВПЛИВУ МАРКЕТИНГУ 5.0 НА ФІНАНСОВО-ЕКОНОМІЧНУ БЕЗПЕКУ ПІДПРИЄМСТВА АГРОПРОМИСЛОВОГО СЕКТОРА

Маркетинг 5.0 сприяє більшій прозорості та екологічній відповідальності, що відповідає сучасним вимогам споживачів і регуляторів, забезпечуючи сталий розвиток агропромислових підприємств. Уважаємо, що в умовах сьогодення, саме це й потрібно сучасному агробізнесові. Метою дослідження є запропонувати підхід до оцінювання ефективності управління фінансово-економічною безпекою підприємства агропромислового сектора з урахуванням переходу до стандартів маркетингу 5.0. Об'єкт дослідження – система управління фінансово-економічною безпекою підприємства агропромислового сектора. Визначення мети й об'єкта сприяє формуванню завдання роботи: у деталях роз'яснити авторський підхід до оцінювання ефективності управління фінансово-економічною безпекою підприємства агропромислового сектора з урахуванням переходу до стандартів маркетингу 5.0. У результаті на основі методології інтегрального багатокритеріального оцінювання запропоновано структурно-функціональну модель аналізу оцінювань рівня інтенсивності впровадження маркетингу 5.0 за динамікою ринку агропромислової продукції. Обрано діюче підприємство агропромислового сектора для оцінювання рівня інтенсивності впровадження маркетингу 5.0. Сформовано систему умов контролю рівня забезпеченості безпекового маркетингового розвитку підприємства агропромислового сектора та систему умов контролю рівня забезпечення фінансово-економічної безпеки з урахуванням активізації засад маркетингу 5.0. Запропоновані системи умов контролю, спрямовані на посилення контролю забезпечення ефективного стратегічного управління фінансово-економічною безпекою агропромислового підприємства з урахуванням аспекту ролі маркетингу 5.0.

**Ключові слова:** методичний підхід, фінансово-економічна безпека, діяльність підприємств, безпековий розвиток, оцінювання управління, маркетинг 5.0

**JEL Класифікація:** M31, Q14, G32