Business: Theory and Practice
ISSN 1648-0627 / eISSN 1822-4202
2023 Volume 24 Issue 2: 533–543
https://doi.org/10.3846/btp.2023.18951

RISK-ORIENTED STRATEGIC MANAGEMENT ACCOUNTING IN UKRAINE

Olena FOMINA[1], Svitlana SEMENOVA[2*], Olena MOSHKOVSKA[3], Volodymyr YEVDOSHCHAK[4], Yulia MANACHYNSKA[5]

[1, 2, 3]*Department of Accounting and Taxation, State University of Trade and Economics, Kyiv, Ukraine*
[4, 5]*Department of Finance, Accounting and Taxation, Chernivtsi Institute of Trade and Economics of State University of Trade and Economics, Chernivtsi, Ukraine*

Received 11 April 2023; accepted 16 October 2023

Abstract. In order to survive, Ukrainian enterprises in the conditions of war must look for new ways of effective management, a higher degree of integration of risk management and strategic management. Management accounting helps make risk-based decisions to achieve strategic goals. The expert survey method made it possible to identify the most significant risks for enterprises in Ukraine in war conditions: the risk of increased costs, reduced income, the risk of inability to repay obligations, loss of customers, non-payment of receivables, loss of asset value, risk of unprofitability, reduction of business and bankruptcy. The strategic management accounting risk matrix shows the probability and potential impact of each risk on accounting data. A strategic plan and measurement of the effectiveness of risk-oriented strategic management accounting was developed. It shows the relationship of accounting objects, the financial statements of the enterprise, with analytical indicators for assessing the financial condition and the impact of risks under pessimistic, optimistic and optimal scenarios. In practice, it helps to identify risks, determine their impact on enterprise performance indicators, model indicators, assess their compliance with strategic goals, adapt in a timely manner, and make effective management decisions.

Keywords: accounting, management, risk, management accounting, risk-management, strategy, strategic management accounting, risk-oriented strategic management accounting, prognostication.

JEL Classification: D61, D81, M41, M49.

Introduction

Globally, challenges and threats are becoming more tangible than ever before, forcing business entities to constantly assess risks and opportunities for their activities, identify and display them in management accounting to provide information for decision-making. Ukraine found itself in an extremely difficult situation due to the unnecessarily aggressive occupation war of the russian federation. Huge risks of loss of business, loss of assets, personnel, financial and material resources, sales markets, business connections, investment attractiveness, the ability to function normally and develop indicate the need for rapid adaptation of management approaches and the relevance of risk-oriented strategic management accounting.

The Chartered Institute of Management Accountants (CIMA) emphasizes that a successful business requires a combination of advanced methods of management, accounting and finance (CIMA, 2022). Strategic management accounting is future-oriented and uses analysis to develop a business strategy, ensure the growth of the market value of the business, is based on the study of end-to-end business processes to identify and manage risks. However, the methodological tools of management accounting for assessing and displaying risks, especially in the context of the russian occupation war against Ukraine, are practically not developed.

The existing strategic management accounting has a number of problems that limit its practical use in solving strategic tasks of an enterprise in today's changing environment. Strategic management accounting focuses mainly on financial and intangible indicators, without assessing the impact of risks as a key aspect of strategic management. Risk management tools are not sufficiently integrated into the system of internal control, strategic management, accounting and reporting processes. There is insufficient emphasis on going concern, which is the main accounting principle, and on long-term sustainability and

*Corresponding author. E-mail: *s.semenova@knute.edu.ua*

competitiveness, which are important for management. Another problem with strategic management accounting is the insufficient involvement of specialists in the process of identifying, monitoring risks and developing a management strategy, lack of integration with reporting, limited attention to change, lack of flexibility, and ineffective response to crises. These limitations emphasize the need for further development of strategic management accounting, in particular in the direction of a risk-based approach.

Risk is an important object of accounting, control, audit, and management. In general, it is considered as the possibility of occurrence of events and their impact on the achievement of strategy and business goals (COSO ERM, 2018). Risk also means uncertainty regarding the achievement of goals, one of the aspects of which is accounting (ISO Guide 73:2009), however, there are currently no approaches to displaying potential events and their consequences in the system of strategic management accounting, taking into account various scenarios of the development of events. Enterprise risk management should not be seen as a function or a separate department, as is common in practice, but as part of the corporate culture, capabilities and practices that are integrated with strategy and used to create, preserve and realize value (ISO 31000:2018). Corporate culture is an important component of success for any enterprise, as it determines the values, attitudes, beliefs and behavior of employees and management, which in turn influence the creation of a working environment that helps reduce risks. Corporate culture, which is based on high standards of ethics, compliance with legislation, standards, ethics, mutual respect in relations with customers, partners, and employees. A risk-based approach requires awareness and involvement of employees at all levels of the enterprise to reduce, avoid, identify and analyze risks. Therefore, modern accounting professionals must have a good understanding of risk management. From an accounting point of view, risk management is the process of assessing the risks associated with a company's business practices in order to minimize or eliminate them. However, there is a question of identifying the most significant risks for Ukrainian enterprises under martial law, creating an effective risk assessment system as an object of risk-oriented strategic management accounting, in particular, using a risk matrix, taking into account the risk assessments obtained for budgeting under different scenarios and generating internal reporting.

The difficulties faced by the business directly in the conditions of russian's war against Ukraine and around the world require an urgent search for new approaches to the construction of strategic accounting, more effective methods and concepts. The development of risk-oriented strategic management accounting will help to identify and predict potential risks, which will help to make effective decisions, avoid negative consequences and prepare for them in a timely manner. Risk-oriented strategic management accounting will ensure that strategic goals, budgets, and plans are aligned with risk management measures, which will help to increase the sustainability and competitiveness of the enterprise. The ability to assess risks on the scale of cost and probability, to forecast the performance and financial statements of an enterprise under various scenarios when developing a strategy in of the current martial law environment are extremely difficult and urgent tasks. From now on, strategic management accounting must be risk-oriented. This means deepening scientific research developing theoretical and practical aspects of implementing risk-oriented strategic management accounting.

1. Literature review

Management accounting, risk and strategic management are widely studied objects in the scientific literature, which, although closely related, are mostly considered separately. Historically, the impetus for the development of management accounting was the accounting and control of stocks of business entities (Nzuza Wiseman, 2016). The term "management accounting" was used in the meaning of cost accounting, to define processes, cost calculation and financial control. In the future, the meaning of this concept became more and more multifaceted. Management accounting is a system of measuring and collecting financial and operational information for the implementation of motivational behavior, creation or maintenance of cultural values necessary to achieve the strategic goals of the organization (Abbasi & Mohammadi, 2016). But today, strategic management accounting is gaining much more importance than the control of stocks or costs of the enterprise for the long term. In today's changing business conditions, the so-called market turbulence, it is necessary to take into account a significant range of factors and the inherent risks, which is important for strategic management accounting.

Strategic management accounting is mainly associated with improving the process of making strategic management decisions and increasing the company's efficiency. Modern accounting should have a market-oriented approach and a strategic orientation, focus on calculation, planning, monitoring, customer and competitor accounting, and performance measurement (Ojra et al., 2021). However, this is not enough, the competencies of a modern management accounting specialist should be expanded with risk management and internal control skills (Kose & Agdeniz, 2019). Authors Hadid and Al-Sayed developed a strategic management accounting (SMA) research model using three variables: management accounting professionals, quality of information systems, and organizational culture. A close connection was established between the network interaction of management accounting accountants and the implementation of the practice of strategic management accounting. Among these variables, the quality of information systems and an organizational culture focused more on results than on innovation had the greatest influence (Hadid & Al-Sayed, 2021). However, this model does not take into account the risk factor that affects each of these variables.

Accounting is an integral element of the risk management mechanism at any enterprise (Tarashevsky, 2020). The authors agree with the view that risk management in accounting should be regulated by an appropriate policy and occupy a separate section in the general accounting policy at the enterprise level, in particular, regarding issues of identification, assessment and limitations (Vyhivska, 2018). The application of professional judgment in the preparation of financial and integrated reporting and the disclosure of information about the company's risks in it is becoming especially relevant (Fomina et al., 2022), approximation of international and national accounting standards and reporting on this (Kuzub et al., 2022).

The authors are convinced that strategic management accounting methods help to allocate limited resources more efficiently, rationally integrate business processes and exchange information to achieve strategic decisions and objectives. However, strategic management accounting is currently not widespread in the practice of small businesses. And the main problem is not so much the insufficient level of corporate culture development in small businesses for the implementation and use of strategic management accounting (Ma et al., 2022), but rather the limited resources to attract or train employees in the basics of management accounting, understanding of business processes, strategic thinking and analytical methods. Small business in practice is mainly focused on solving current issues and strategic accounting mostly covers cost control and management reporting on them (Kovova & Semenova, 2015). However, risk-oriented strategic management accounting can become an important tool not only for business preservation, but also for achieving long-term success and growth.

The available research results are fragmentary and focus only on some problematic aspects. For example, in enterprise risk management, scientists pay attention to the accounting and control of provisions for future costs and payments (Kurak, 2019), improvement of accounting for sustainable development and evaluation of the effectiveness of the chosen strategy (Kostyuchenko et al., 2021). Risks are identified within project management, risk management and changes in management decision-making processes (Danchenko & Zanora, 2019), during modeling of internal business processes (Rogovyi et al., 2020).

For Ukrainian companies, it is important to take into account the key trends in risk management of leading European companies, which focus on strengthening the role of cyber security and data protection, with significant attention paid to the risks of the financial sphere, human resources and macroeconomic changes (Semenova, 2020a). The problem of ensuring cyber security for the protection of the vital interests of a person, society and the state during the use of cyberspace is especially acute now all over the world (The Verkhovna Rada of Ukraine, 2017). Risk management in conditions of high uncertainty was quite actively considered under the influence of the negative consequences of the covid-19 pandemic, according to which approaches to risk management of the company's continuous activity at the stages of preparation, response and recovery were highlighted (Deloitte & Touche, 2020). In particular, personnel, communication, infrastructure, business continuity and cyber risks were identified. However, in the conditions of the terrorist war started by russia, new threats and risks are being imposed, the list of which can be supplemented and detailed, both inherent in Ukraine and in most countries and regions of the world that have faced the consequences of military aggression, the crisis in the energy and food markets, environmental changes, disruption of logistics, and sanctions restrictions.

When considering risks in strategic management accounting, scientists attach considerable importance to determining or changing the future fair market value of accounting objects, forecasting cash flows and calculating costs (Semenova et al., 2021). The authors believe that effective strategic management must necessarily take into account the risk factor (Karpenko et al., 2018), and elements of anti-crisis management (Hnatenko et al., 2021). Strategic management accounting should also include forecasting tax payments, expected parameters of tax accounting (Kovova et al., 2018), the impact of risks on transfer pricing (Korol et al., 2022), risks by responsibility centers (Drobyazko et al., 2019). The role of strategic management accounting for achieving sustainable development goals at the enterprise level is widely explored (Ambika & Krishnamoorthy, 2019). Rating modeling for developing of development strategies based on management accounting information (Mazaraki et al., 2022) is worthy of attention, models of sustainable development in strategic management (Semenova et al., 2020).The consistency of information for third parties is ensured by accountants and auditors (Preve & Frias, 2013), however, confidential information related to risks can create conditions of asymmetry in meeting the information needs of users, which can be eliminated, in particular, using integrated reporting.

Dimitris N. Chorafas highlights the issues of financial planning of cash flows, financial condition, strategic accounting principles in the context of IFRS, in particular, determination of fair value, application of IAS 39, corresponding US standards, hedging and hedge accounting, a model approach to asset and liabilities management, virtual consolidated financial statements, use of the algorithm for credit equivalence, in part 3 of his book (Chorafas, 2007). However, the author focuses the stady on strategic planning, while strategic management accounting and its peculiarities in the context of risk are covered rather briefly and, in our opinion, require further research.

In the scientific literature, considerable attention is paid to managerial accounting, strategic management and risks, but their combination into one whole has not been studied enough. The rapid dynamics of changes, as shown today, requires the search for new approaches and tools for the implementation of risk-oriented strategic management accounting.

The **objective** of the article is to define the essence and develop methodological tools for risk-oriented strategic management accounting, which takes into account the specifics and is of practical importance for enterprises that are in crisis due to the rf's war of aggression against Ukraine.

2. Research method

To achieve the goal of the research, the following main methodological tools were used: analysis of limitations to identify and understand existing risks, factors influencing business activity, which should be reflected in strategic management accounting; an expert survey of practicing accountants who have experience and perform management accounting functions at large, medium and small business, various sectors of the Ukrainian economy to select and rank the most significant risks and objects of risk-oriented strategic management accounting under martial law; a matrix method of visualization, parameter estimation and risk forecasting using a risk matrix in strategic management accounting, built on the example of practical data on the activities of the enterprise "Boldness"; retrospective and systematic analysis to deepen the categorical and conceptual apparatus and determine the essence of risk-oriented strategic management accounting; a survey for collecting, processing and evaluating information provided by business entities regarding the practice of strategic management accounting and determining requirements for management reporting on risk assessment.

The conducted studies of the developments available in the scientific literature make it possible to distinguish sixteen methods of strategic management accounting, which can be classified according to five directions: 1) strategic costing (five main methods: costing by attributes, target or target, costing of the life cycle, quality and chain added value); 2) strategic planning, control and performance measurement (in particular, using the tools of integrated performance management (Balanced Scorecard) and benchmarking); 3) making strategic decisions (based on strategic costing, strategic pricing and brand evaluation to determine and achieve the company's competitive advantages); 4) accounting of competitors to determine the position on the market (using the assessment of competitors' costs, monitoring the position of competitors and evaluating their effectiveness); 5) customer accounting (estimation of profits, sales volumes and costs related to customers and their groups) (Ojra et al., 2021).

Risk-oriented methods of strategic management accounting can be classified according to the following criteria:

1) by methods of risk identification: scenario analysis (consideration of risk scenarios and their consequences to identify potential threats), involvement of experts to identify risks, classify and assess them;
2) by risk analysis methods: SWOT-analysis (description of strengths and weaknesses of the enterprise, opportunities and threats of the external environment), PESTEL analysis (assessment of the impact of political, economic, socio-cultural, technological, environmental and legal factors on the strategy), risk matrix, portfolio risk analysis (risk assessment of various strategies and selection of the best alternatives);
3) depending on the object: methods focused on business processes (methods that allow analyzing risks in supply chains, customer relations, etc.), information security (methods for identifying cybersecurity, confidentiality, and information storage risks), risks related to financial condition (methods for assessing risks that affect financial statements, financial results, indicators of the financial condition of the enterprise, analysis of financial ratios, cash flows, etc;)
4) by types of reactions to risks: acceptance, avoidance, distribution, reduction;
5) by methods of monitoring and controlling risks: implementation of key risk indicators (metrics for tracking risks and their impact on the strategy), audit (Tarashevsky, 2020).

The latter should be supplemented by internal control and business continuity management methods. This classification helps to determine which specific methods and tools can be used to implement risk-based strategic management accounting, depending on the conditions, needs and specifics of the enterprise.

A more detailed review of the management accounting methodological tools used to assess and display risks allowed us to identify the most effective ones:

– The risk matrix is a graphical tool that visualizes the relationship between the probability of risks and their impact on the business. The matrix consists of two axes: the probability of risk occurrence and its consequences (cost impact). Each risk is assigned a certain level of probability and consequences, which helps to determine its significance for the business and select appropriate response measures.
– Scenario analysis – this method involves consideration of possible options for the development of events under different scenarios and helps to assess what risks may arise in different conditions and how they will affect the company.
– SWOT-analysis is a tool that allows you to identify the company's strengths and weaknesses, as well as opportunities and threats from the external environment. This analysis helps to identify risks and build a strategy to manage them.
– Sensitivity analysis is a tool that allows you to assess the impact of changes in certain factors, parameters (price, demand, costs, etc.) on the risks and financial results of a project or business process.
– Probable consequences analysis is a method that determines the possible consequences for the enterprise for each identified risk and helps to better understand potential losses and benefits.
– Portfolio analysis, which is used to assess risks in the context of the entire portfolio of projects or activities of the enterprise. It helps determine which risks are common to several projects and how best to manage them.

In addition to these methods, it is important to establish a risk monitoring system and regularly report on their changes and impact on the company's operations to ensure effective risk management. The use of information systems and specialized software tools allows you to automate the processes of risk assessment, monitoring and reporting.

The search for universal concepts and systems is a difficult task, since universality implies a somewhat generalized approach, and higher accuracy of estimates and calculations require more individual methods. That is why risk-oriented strategic management accounting should be based on objects that are common and relevant for all companies, as well as on objects that can be detailed and specified in accordance with the specifics of an individual enterprise, taking into account the risks and threats.

The expert survey conducted by the authors of the study allowed to take into account the opinion of practicing accountants who have experience and perform management accounting functions at large, medium and small businesses belonging to different sectors of the economy and located in different regions of Ukraine. As a result, a number of key indicators were identified – the most important objects of risk-based strategic management accounting (Figure 1).

Thus, according to the results of the ranking, it was established that in the first place was recognized the risk of an increase in costs by articles and elements (29% of the specific weight according to the estimates of the interviewed accountants), in the second place – a decrease or lack of income (19%), in the third place – the risk of not being able to repay one's own obligations (13%), followed by the risk of losing customers (9%), non-repayment of receivables (7%), loss of value of assets (7%), unprofitability (5%), reduction of business, sectors, and volumes of activity (3%), risk of bankruptcy (2%). The expert survey questionnaires developed by the authors contained a detailed list of objects, and an open question was added to allow everyone to add their own risks that were not on the proposed list but which, in the expert's opinion, were relevant. Thus, among other objects, the following are recognized as the most common risks: devaluation of financial instruments, loss of suppliers, destruction of supply chains, increase in the operating cycle, increase in the cost or unavailability of credit resources, loss of qualified personnel, changes in tax and regulatory rules. Despite the close correlation of experts' responses, there is a variation in the importance of certain risks in experts' assessments depending on geographic regions, in particular, the loss of asset value directly due to military operations, occupation, and looting. Not all business entities in Ukraine have managed to relocate their business from the occupied territories and the contact line. In addition, acts of war in business, banking and insurance contracts were previously classified as force majeure, which also makes it difficult to expect compensation or indemnification and to continue normal business practices.

Significant risks in the conditions of war, occupation and their complex economic consequences are associated with the destruction of transport infrastructure, higher prices or fuel and lubricants, possible temporary seizure of vehicles for the period of martial law, downtime due to air raids and blackouts, caused by russian shelling and attacks on critical infrastructure, damage from missiles, drones, falling debris, all of which significantly affect the ability to do business, business continuity, time and money spent, reduced profitability, and limited supply and sales opportunities. Also, income estimates should take into account fluctuations in demand during the war and its changes during the reconstruction phase. The detailing of objects of risk-oriented strategic management accounting largely depends on the sector of the economy in which the business operates: transport services (Tarashevsky, 2020), agro-industrial complex (Fomina et al., 2020), construction, manufacturing, retail, tourism, medicine, financial system (Shulha et al., 2022) – each of them has its own characteristics. Therefore, the further description of risks as objects of strategic management accounting for individual sectors of the economy and types of activities can be a direction of prospective research. This will allow not only to more comprehensively assess the current negative consequences of military actions, but also to identify opportunities, threats,

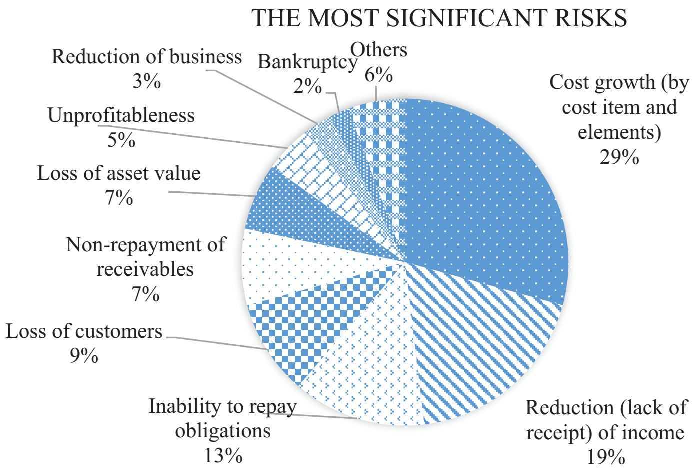


Figure 1. Key objects of risk-oriented strategic management accounting according to the estimates of practicing accountants and specialists in Ukraine in 2022 (source: compiled by the authors based on the results of an expert survey in 2022, Ukraine)

factors influencing future indicators of financial reporting, and the financial condition of enterprises.

3. Results

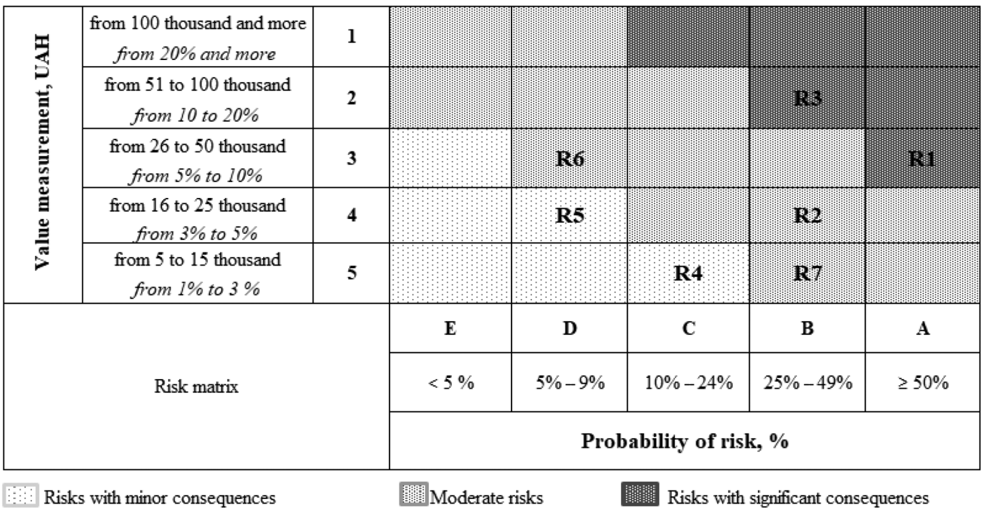
Management accounting is a source of generating, presenting and using financial and non-financial information to support decision-making and counter their effectiveness. If earlier accountants focused mainly on reflecting retrospective events and preparing reports, today accounting specialists are increasingly involved in strategic management, risk management, internal control and auditing (The Institute of Internal Auditors Ukraine, 2017). That is, the focus is complemented by the analysis of the external environment, non-financial information and risk assessment when choosing the best response measures and modeling key indicators.

Risks in the accounting and reporting system are considered from three positions: 1) accounting can be a source of risk formation (for example, due to incorrect judgments and estimates); 2) accounting is one of the functions of risk management (through the creation of reserves and provisions, revaluation, hedging, etc.); 3) accounting provides the necessary information (management reporting for internal users, financial and integrated reporting for external users) (Semenova et al., 2021). Risk-oriented strategic management accounting combines these aspects and allows considering the accounting of objects related to future risks and reporting on them, using not only generally accepted International Financial Reporting Standards and the Conceptual Framework for Financial Reporting, as well as internally developed policies and methods (Ministry of Finance of Ukraine, 2023).

In strategic performance measurement, brand evaluation, the amount of projected profit calculated according to accounting rules is taken into account. At this stage, it is absolutely necessary to highlight the components of profit formation and risks that can change the expected values under different scenarios. It has been proven that the productivity of the company can increase significantly if the strategic management accounting in the enterprise is used along with the quality management system, which are complementary and allow to increase the overall efficiency (Sedevich-Fons, 2018).

Formulation of the objects of risk-oriented strategic management accounting allows to highlight the most significant parameters that have a significant impact on the indicators of assets, equity, liabilities, financial results and cash flows, which are reflected in financial statements using accounting accounts and which are the basis to analyze its financial condition, stability, profitability, business activity for making further decisions. Analysis and assessment of risks, their interrelationship and interdependence, will allow to systematically consider the parameters of the enterprise's functioning in the future, to timely identify risk-creating factors that can affect the enterprise's ability to achieve its strategic goals. Accordingly, a comprehensive risks assessment of the possibility of their impact on the enterprise is realized by combining the risk matrix with the strategy and parameters of the strategic plan of financial performance and measuring the effectiveness of risk-based strategic management accounting. This should help to choose the right and timely effective response measures of prepare for the worst-case scenarios.

Each object of risk-oriented strategic management accounting can be considered as a whole or detailed by elements. For example, it is advisable to analyze the risk of cost growth by components and elements, in particular, what will be the consequences of an increase in the cost of fuel, purchasing raw materials and materials (especially for imports), components, changes in tariffs, etc. The reduction and lack of income also requires a more detailed



Risks of cost growth (by cost item and elements): R1 – cost growth for transportation; **R2 –** increase in the cost of tariffs; **R3** – increase in costs for the purchase of raw materials; **R4** – losses due to simple equipment; **R5** – deterioration of values; **R6** – increase in the cost of rent; **R7** – increase in labor costs.

Figure 2. Risk matrix for objects of risk-oriented strategic management accounting (sources: compiled by the authors based on data from the enterprise "Boldness" and ISO 31000:2018; Tarashevsky, 2020)

consideration of the types of products, goods, works, services, and sales markets. It can be seen that these objects are associated with the risk of losing customers, business reduction, unprofitability, inability to repay obligations, bankruptcy.

For a weighted assessment of the impact of each object, the technique of building a risk matrix is effective, which allows you to visualize the value expression of the risk or the scale of its impact and the probability of occurrence. At the same time, those risks that have potentially high damage and a high probability of their occurrence require the greatest attention (Figure 2). For the scale of the cost measurement of risk in relation to the object of strategic management accounting, it is necessary to take into account the level of materiality. For assets, liabilities, and equity, its recommended limit is up to 3% of the relevant category, for income and expenses – 0.2% of the total amount of income and expenses or 2% of the amount of net profit (loss) (Ministry of Finance of Ukraine, 2003). For basic indicators, it is advisable to use data from the latest reporting. As a rule, the risk matrix is built for assessment for one year (12 months), however, if the planning horizon is 3 or 5 years, the discounting mechanism can be used.

With the help of the risk matrix, each object can be analyzed aggregated, as well as in more detail to the required level of materiality. According to the list of risks defined by the company, a systematized catalog of risks is drawn up, where the risk code, description, indicators, accounting accounts, reporting forms affected by the risk, response measures and responsible persons should be determined.

It is important to build risk matrices for each object of risk-oriented strategic management accounting in relation

Table 1. Strategic plan and performance measurement of risk-oriented strategic management accounting (source: compiled by the authors on the example of the enterprise "Boldness")

No	Indicators	Years					
		2023				2024 optimal	2025 optimal
		scenarios			The potential impact of risks		
		pessimistic	optimal	optimistic			
I	A Statement of Financial position						
1	Assets, including:	3049	3098	3123	254	3120	3148
2	Non-current assets, thousand UAH	2004	2013	2024	94	2026	2044
3	Current assets, UAH thousand, including:	1027	1085	1096	160	1094	1102
4	cash and their equivalents, thousand UAH	49	54	62	6	60	69
5	stocks, thousand UAH	652	674	688	65	691	702
6	accounts receivable, thousand UAH	344	357	349	89	343	333
7	Liabilities, including:	3049	3098	3123	254	3120	3148
8	Equity (share capital), thousand UAH	1644	1678	1732	72	1695	1701
9	Current liabilities, thousand UAH	1405	1420	1391	182	1425	1447
II	A Statement of Profit or Loss						
10	Net income from sales, thousand UAH	612	625	638	215	642	650
11	Cost of sold goods, products, works, services, thousand UAH	422	428	437	134	440	447
12	Gross profit, thousand UAH	190	197	201	81	202	203
13	Other incomes, thousand UAH	28	36	39	10	40	44
14	Other expenses, thousand UAH	49	54	47	16	51	53
15	Financial result before taxation, thousand UAH	169	179	193	75	191	194
16	Net profit (loss), thousand UAH	139	147	158	61	157	159
III	A Statement of Cash Flows						
17	Incoming cash flow, thousand UAH	915	936	1008	225	1010	1018
18	Outgoing cash flow, thousand UAH	904	902	947	198	956	963
19	Net cash flow, thousand UAH	11	34	61	27	54	55
IV	Assessment of financial condition, profitability, business activity						
20	Absolute liquidity ratio	0.03	0.04	0.05	–0.01	0.04	0.05
21	Total liquidity ratio	0.73	0.77	0.80	–0.11	0.77	0.76
22	Coefficient of autonomy	0.54	0.54	0.55	–0.26	0.54	0.54
23	Net profitability, %	22.7	23.5	24.8	–4.9	24.5	24.5
24	Return on assets, %	4.6	4.7	5.1	–0.4	5.0	5.1
25	Business activity (asset turnover ratio)	0.201	0.202	0.204	–0.046	0.206	0.206

to the impact on budgets and plans that are developed in accordance with the chosen strategy and the policy of its achievement. This will form a risk map of the company and determine the choice of further response measures. Risks that are in the red zone should be considered as a priority, especially with regard to their impact on other important indicators of the financial condition and results of the enterprise. In accordance with this, the form of internal management reporting "Strategic plan and performance measurement of risk-oriented strategic management accounting" is proposed, which was developed for the years 2023–2025 on the example of the enterprise "Boldness", presented in Table 1.

The practical testing of the proposed approach was conducted on the basis of data from the enterprise "Boldness", the name of which was changed for reasons of using confidential internal information. This enterprise is located in the city of Kyiv, belongs to the category of medium-sized enterprises, and its main activity is trading. The enterprise "Boldness" is interested in implementing risk-oriented strategic management accounting. The application of the proposed methodology for matrix assessment of key risks of the enterprise "Boldness" allowed to identify and practically demonstrate their impact on the strategic plan and measure the effectiveness of risk-based strategic management accounting. By analogy, the proposed methodology will be of practical importance for other enterprises that also implement risk-based strategic management accounting.

Since risks can move from different zones: from lighter to darker (or presented in color – green, yellow, red), it is advisable to build a budget for three scenarios: optimal, pessimistic and optimistic. The potential impact of risks is separately highlighted on the basis of an additive assessment of their possible impact on accounting objects, reporting items, and indicators of the company's financial condition relative to the expected optimal level. The use of a risk matrix can be a tool for modeling the parameters of a strategic plan or budget for each scenario.

The proposed form of the strategic plan can be supplemented with indicators in accordance with the information needs of users, including approved strategic parameters. However, the main idea of building such a table is to reflect the relationship between accounting objects that are presented in the articles of the company's financial statements, with analytical indicators characterizing the financial condition, and quantitative measurement of the expected impact of risks under pessimistic, optimistic and optimal scenarios. In practice, such a table can be implemented using the Excel office program, which will allow you to immediately observe the change in strategic parameters under the influence of risk factors, model planned parameters, their compliance with strategic tasks, and select the most effective response measures.

For Ukrainian enterprises in wartime, the implementation of risk-oriented strategic management accounting will have a significant practical significance, since now it is important not only to identify risks, but also to be able to determine their impact on the performance of the enterprise, to adapt in a timely manner and to make effective management decisions.

4. Discussion

The study of strategic management accounting as a whole is based on three aspects: 1) methods of strategic management accounting to increase the productivity of the organization; 2) factors for choosing the specified methods and methods of evaluating their effectiveness; 3) the shortcomings of existing research in this area and the possibilities of overcoming them (Ojra et al., 2021). However, the existing list is obviously missing a key component that needs to be singled out from among the others. This is the focus of strategic management accounting on taking into account possible risks and choosing measures to respond to them.

The latest techniques can help change the direction, accelerate or slow down the growth of companies, provided they are ready and able to cope with future threats and the ability to use potential advantages (Abbasi & Mohammadi, 2016). The implementation of more complex management accounting systems allows reducing risks for the enterprise and makes risk management more effective (Afifa & Saleh, 2021).

It is relevant to assess the effectiveness of responsibility centers in the management accounting system (Drobyazko et al., 2019), cyber risks and information technologies (Shulha et al., 2022). Foresight technologies, based on a combination of strategic analysis and forecasting of key indicators, provide a high probability of achieving certain results and contribute to the formation of conditions for this (Fomina et al., 2020).

To systematize and analyze cause-and-effect relationships in the formation of financial security, enterprises use the "bow tie" diagram, with the help of which risk management is aimed at identifying events that affect the formation of the financial state of the enterprise (Fedulova & Piatnytska, 2020).

The assessment of the effectiveness of management accounting, that is, its impact on the company's productivity, is debatable. It is believed that company performance is determined by the fit between structure and environment (Ojra et al., 2021). Therefore, strategic management accounting must take into account the risks of changes in the external (intensity of competition and market turbulence) and internal environment (organizational structure or formalization, decentralization and strategy), in order to be ready, timely and effective in choosing methods of responding to them and understanding the consequences of decisions made, their impact on reporting indicators and the financial position of the enterprise. Approaches to determine the greater effectiveness of formalization or, conversely, decentralization of the company's organizational structure for a better impact on the practice of strategic management accounting remain debatable. However, it has been proven that there is a higher need for the support of strategic management accounting in enterprises that had a decentralized organizational structure, which is explained by a lower level of communication between employees and information exchange (Ojra et al., 2021).

The authors agree with the opinion on the need for interaction between management accounting and risk management (Kose & Agdeniz, 2019), the development of the competencies of a modern accountant (Fomina & Goncharenko, 2015), management accounting tools (Mazaraki & Fomina, 2016) and internal audit (Martinis & Houghton, 2019), expansion of risk classification (American Academy of Actuaries Risk Classification Work Group, 2011), including for the needs of management accounting (Semenova, 2020b) and internal audit (Auditores Internos, 2021).

The existing risk assessment methodology has a number of limitations that may affect its effectiveness. The most important are the following: uncertainty and interconnectedness of risks, their multicollinearity, limited forecasting accuracy, lack of reliable information, limited resources, subjectivity of assessment and human factor in relation to the impact of risks and selection of measures to respond to them, dynamism of the external environment, in particular, rapid changes in technologies, markets, geopolitical, environmental and military factors that generate new risks that are difficult to predict according to preliminary estimates. Therefore, the methodological tools of risk-oriented strategic management accounting should combine the advantages and capabilities of different approaches, use various sources of information, be flexible and adapt to changes in the environment, possible threats and challenges.

Strategic management accounting and risk management are considered through the function of providing information about external risks associated with external factors for the enterprise, such as: competitors, customers and suppliers (Roupska, 2022). However, internal risks affecting the ability to achieve strategic goals are no less important, especially in wartime, so it is necessary to develop a balanced approach. That is why a methodical approach to the selection of the range of risks – objects of risk-oriented strategic management accounting, for which the optimal level of detail is chosen when building a matrix of risks, determining their impact on the formation of key planned indicators, is proposed. Depending on the type of firm's strategy (aggressive or moderate), the set of strategic management accounting tools and their priority may change. Deepening the risk-orientation of strategic management accounting in the context of the type of strategy and style of management, organizational and legal form, size and type of activity of the enterprise, region and territory of placement can act as directions for further research. The limitations of the proposed risk assessment methodology are the need to analyze each object of risk-oriented strategic management accounting separately according to their impact on the financial statements and financial condition of the enterprise, which increases the labor intensity of the process. The risk matrix does not allow immediate assessment of the multicollinear impact of risks and their interaction, but the identified objects, within the limits of materiality and the required detail, can consistently trace the impact of risks on the enterprise's strategy and financial reporting indicators under different scenarios (optimal, optimistic or pessimistic). This distinguishes the proposed methodology from the existing one and helps to assess not only key risks, but also to control their impact on important financial parameters and the continuity of the company's operations, select the most beneficial risk response measures and analyze their effectiveness.

Conclusions

The results of existing studies indicate the relevance of expanding the functions of accounting and implementing the practice of risk-oriented strategic accounting. With a view to deepening the categorical apparatus, the authors formulate own definition of the concept of "risk-oriented strategic management accounting", which means the process of selecting and modeling strategic management decisions, identifying and assessing risks, taking into account their impact on accounting objects, financial reporting indicators, tax accruals, financial condition, liquidity, solvency, profitability, business activity, cash flows of the enterprise, and the ability to achieve strategic goals. To develop of risk-oriented strategic management accounting, its methodological toolkit have been deepened. On the basis of an expert survey, the most important objects of risk-oriented strategic management accounting for enterprises in the conditions of the rf's war against Ukraine were identified – the risk of increased costs (by items and elements), decreased income, the risk of inability to repay obligations, loss of customers, non-payment of receivables, loss of asset value, risk of unprofitability, business decline and bankruptcy. The tools of risk-oriented management accounting are expanded and an integrated approach is proposed that combines an effective methodology for identifying and analyzing risks with an assessment of their impact on key indicators of financial and economic activity of enterprises under various scenarios. It is proposed to evaluate the objects of risk-oriented strategic management accounting using a risk matrix, which reflects the value expression of the risk or the scale of its impact and the probability of occurrence. Each object can be analyzed aggregated or in more detail by elements. With the help of the risk matrix, it is possible to assess the impact of each risk on other indicators of strategic management accounting, in particular, on budgets and plans that are developed according to the chosen strategy. A form of management reporting has been developed in the form of a strategic plan and monitoring of key indicators of the enterprise's activity under the influence of risks under various scenarios and management policies.

The added value of the developed methodological tools of risk-oriented strategic management accounting is the ability to directly measure and evaluate the impact of risks on accounting objects and financial indicators, to integrate strategic management with financial reporting, which will allow developing more sound and balanced strategies. The proposed risk-based approach is more flexible and involves constant monitoring of the external environment and internal processes, which helps to respond quickly to changes, objectively adjust strategic plans and take the necessary measures to maintain business continuity in a timely manner. In general, the development of risk-based strategic management accounting can help organizations become more adaptive, competitive and efficient in the face of uncertainty and change.

For Ukrainian enterprises, the introduction of risk-based strategic management accounting, its integration with risk management, internal control, audit, and business continuity management is of great practical importance to provide the necessary information in the formation of flexible strategies and ensure business efficiency in the face of high risks caused by the war and overcoming its consequences.

Thus, management accounting not only provides information for decision-making at the enterprise, risk-oriented strategic management accounting provides information that reduces uncertainty through the identification and analysis of risks, increases the manageability and predictability of key indicators of the enterprise, which ultimately contributes to the achievement of strategic goals. Directions for further research are to expand the methodology of risk-based strategic management accounting and its integration into the management system based on the use of modern information technologies, in particular, artificial intelligence, data analytics, modeling, which will allow to fully take into account and adapt to the type of strategy and management style, organizational and legal form, size and type of activity of the enterprise, country and region of location.

References

Abbasi, B., & Mohammadi, M. H. K. (2016). Effect of strategic management accounting techniques on market share changes in firms in Tehran Stock Exchange market. *Problems and Perspectives in Management*, *14*(3-si), 325–331. https://doi.org/10.21511/ppm.14(3-si).2016.04

Afifa, M. A., & Saleh, S. (2021). Management accounting systems effectiveness, perceived environmental uncertainty and enterprise risk management: Evidence from Jordan. *Journal of Accounting & Organizational Change, 17*(5), 704–727. https://doi.org/10.1108/JAOC-10-2020-0165

Ambika, R., & Krishnamoorthy, K. (2019). Determinant of socio-economic sustainable development. *Shanlax International Journal of Arts, Science and Humanities, 6*(3), 35–36.

American Academy of Actuaries Risk Classification Work Group. (2011). *On risk classification.* American Academy of actuaries. A public policy monograph. https://www.actuary.org/sites/default/files/files/publications/RCWG_RiskMonograph_Nov2011.pdf

Auditores Internos. (2021). *Risk in Focus 2021: Hot topics for internal auditors.* Institute of Internal Auditors of Spain. https://auditoresinternos.es/uploads/media_items/risk-in-focus-2021-full-report.original.pdf

Chartered Institute of Management Accountants. (2022). *Management accounting in your business*. CIMA. https://www.cimaglobal.com/Employers/CGMA-The-new-global-standard/Management-accounting-in-your-business/

Chorafas, D. N. (2007). *Strategic business planning for accountants: Methods, tools and case studies*. Elsevier.

Conceptual Framework for Financial Reporting. (2019). https://www.mof.gov.ua/storage/files/2019_RB_ConceptualFramework_ukr_AH%20(2).pdf

COSO ERM. (2018). *Enterprise Risk Management. Applying enterprise risk management to environmental, social and governance-related risks*. WBCSD.

Danchenko, O. B., & Zanora, V. O. (2019). *Project management: Risk management and change in management decision-making: A monograph*. Cherkasy.

Deloitte & Touche. (2020). *Risk management in conditions of high uncertainty.* Deloitte & Touche USC LLC. https://www2.deloitte.com/content/dam/Deloitte/ua/Documents/webinar/Webinar_Risk_Management_14.04.2020.pdf

Drobyazko, S., Shapovalova, A., Bielova, O., Nazarenko, O., & Yunatskyi, M. (2019). Evaluation of effectiveness of responsibility centers in the management accounting system. *Academy of Accounting and Financial Studies Journal*, *23*(6), 1–6.

Fedulova, I., & Piatnytska, G. (2020). Signification of risk management, crisis management and compliance in the financial safety management of an enterprise. *Economics and State*, *8*, 26–34. https://doi.org/10.32702/2306-6806.2020.8.26

Fomina, O. V., & Goncharenko, O. M. (2015). Risk assessment of the enterprise in the accounting system. *Economic Journal – XXI*, *3–4*, 67–70.

Fomina, O., Moshkovska, O., Luchyk, S., Manachynska, Y., & Kuzub, M. (2020). Managing the agricultural enterprises' valuation: Actuarial approach. *Problems and Perspectives in Management, 18*(1), 289–301. https://doi.org/10.21511/ppm.18(1).2020.25

Fomina, O., Zadniprovsky, O., Korol, S., & Romashko, O. (2022). Professional judgement in accounting: Contents and conditions of application. *Business: Theory and Practice*, *23*(1), 26–38. https://doi.org/10.3846/btp.2022.13330

Hadid, W., & Al-Sayed, M. (2021). Management accountants and strategic management accounting: The role of organizational culture and information systems. *Management Accounting Research*, *50*, 100725. https://doi.org/10.1016/j.mar.2020.100725

Hnatenko, I., Shtuler, I., Romashko, O., Rubezhanska, V., Bulkot, G., & Bugay, N. (2021). The innovative potential of agro-processing enterprises in the context of resource conservation and crisis management. *Journal of Hygienic Engineering and Design*, *35*, 61–66. https://keypublishing.org/jhed/jhed-volumes/jhed-volume-35-fpp-4-iryna-hnatenko-iryna-shtuler-olha-romashko-viktoriia-rubezhanska-ganna-bulkot-nadia-bugay-2021-the-innovative-potential-of-agro-processing-enterprises-in-the-cont/

International organization for Standardization. (n.d.-a). *ISO 31000:2018 Risk management – guidelines*. https://www.iso.org/ru/standard/65694.html

International organization for Standardization. (n.d.-b). *ISO Guide 73:2009 Risk management – vocabulary*. https://www.iso.org/standard/44651.html

Karpenko, O., Palyvoda, O., & Bondarenko, O. (2018). Simulation modeling of strategic development of transport and logistics clusters in Ukraine. *Baltic Journal of Economic Studies*, *4*(2), 93–99. https://doi.org/10.30525/2256-0742/2018-4-2-93-98

Korol, S. Y., Nykyforuk, O. I., Pelekh, U. V., Barabash, N. S., & Romashko, O. M. (2022). Transfer pricing documentation:

Globalization and regional optimization. *Universal Journal of Accounting and Finance, 10*(1), 219–230. https://doi.org/10.13189/ujaf.2022.100123

Kose, T., & Agdeniz, S. (2019). The role of management accounting in risk management. *Muhasebe ve Finansman Dergisi*, 509–526. https://doi.org/10.25095/mufad.607200

Kostyuchenko, V., Kamil, A., Petrov, P., Kolot, L., & Mykolaichuk, I. (2021). Controlling's accounting support at trading companies in the context of sustainable development. *Academy of Accounting and Financial Studies Journal, 25*(4). https://www.abacademies.org/articles/Controllings-accounting-support-at-trading-companies-in-the-context-of-sustainable-development-1528-2635-25-4-770.pdf

Kovova, I., Malyshkin, O., Vicen, V., Shulyarenko, S., Semenova, S., & Shpyrko, O. (2018). Value added tax: Effectiveness and legal regulation in Ukraine and the European Union. *Economic Annals-XXI, 171*(5–6), 4–14. https://doi.org/10.21003/ea.V171-01

Kovova, I. S., & Semenova, S. M. (2015). Accounting and analytical support for costs control of small businesses under euro integration. *Actual Problems of Economics*, *173*(11), 353–358. https://www.scopus.com/record/display.uri?eid=2-s2.0-84951043211&origin=inward&txGid=2f0c0ee5830d5167134c7958f4707c60

Kuzub, M., Zadniprovskyi, O., Romashko, O., Avhustova, O., & Shushakova, I. (2022). Specifics of the implementation of accounting standards. *Scientific Horizons. Polissia National University, 25*(1), 96–103. https://doi.org/10.48077/scihor.25(1).2022.96-103

Kurak, A. I. (2019). *Accounting and control of future expenses and payments in enterprise risk management* [Abstract of the dissertation of the candidate of economic sciences; Lviv University of Trade and Economics Lviv]. http://www.lute.lviv.ua/fileadmin/www.lac.lviv.ua/data/pidrozdily/Aspirantura/Rady/Spec_vchena_rada/Dysertacii/2019_07/Kurak_Disert_1.pdf

Ma, L., Chen, X., Zhou, J., & Aldieri, L. (2022). Strategic management accounting in small and medium-sized enterprises in emerging countries and markets: A Case study from China. *Economies*, *10*(4), 74. https://doi.org/10.3390/economies10040074

Martinis, M., & Houghton, K. (2019). The business risk audit approach and audit production efficiency. *Abacus (A Journal of Accounting, Finance and Business Studies), 55*(4), 734–782. https://doi.org/10.1111/abac.12178

Mazaraki, A., Boiko, M., Bosovska, M., Okhrimenko, A., & Antoniuk, K. (2022). The rating of Ukraine's regional tourist systems according to their investment potential. *Problems and Perspectives in Management, 20*(3), 43–61. https://doi.org/10.21511/ppm.20(3).2022.04

Mazaraki, A., & Fomina, O. (2016). Tools for management accounting. *Economic Annals-XXI*, *159*(5–6), 48–51. https://doi.org/10.21003/ea.V159-10

Ministry of Finance of Ukraine. (2023). *International Financial Reporting Standards*. https://www.mof.gov.ua/uk/mizhnarodni-standarti-finansovoi-zvitnosti

Ministry of Finance of Ukraine. (2003). *Letter "Regarding materiality in accounting and reporting", dated July 29, 2003 No. 304230-04108*. https://zakon.rada.gov.ua/rada/show/v4108201-03#Text

Nzuza Wiseman, Z. (2016). An application of a Chartered Institute of Management Accounting strategy on stock control: A case of the South African municipality. *Public and Municipal Finance, 5*(2), 30–39. https://doi.org/10.21511/pmf.5(2).2016.03

Ojra, J., Opute, A.P., & Alsolmi, M. M. (2021). Strategic management accounting and performance implications: A literature review and research agenda. *Future Business Journal*, *7*, 64. https://doi.org/10.1186/s43093-021-00109-1

Preve, L., & Frias P. (2013, 3 June). *Accounting at risk. Risk and uncertainty management*. Lorenzo Preve. http://lorenzopreve.com/accounting-at-risk

Rogovyi, A., Serbov, M., Korol, S., Akhundova, A. H. G., & Suzdalieva, O. (2020). Features of business processes model building in the field of international tourism business. *International Journal of Entrepreneurship, 24*(1 Special Issue), 1–7. https://www.abacademies.org/articles/Features-of-Business-Processes-Model-Building-in-the-Field-of-International-Tourism-Business.pdf

Roupska, T. (2022, 18–19 May). The role of strategic management accounting in external strategic risk management. In *25th International Scientific Conference "Solving crisis situations in a specific environment"*. Faculty of Safety Engineering UNIZA, Žilina. Zilina, Slovak Republic. https://www.researchgate.net/publication/361099360

Sedevich-Fons, L. (2018). Linking strategic management accounting and quality management systems. *Business Process Management Journal, 24*(6), 1302–1320. https://doi.org/10.1108/BPMJ-02-2018-0038

Semenova, S. (2020a). Key trends in risk management of leading EU companies according to internal auditors. *Efficient Economy, 9*. https://doi.org/10.32702/2307-2105-2020.9.68

Semenova, S. M. (2020b). Risk classification: A systematic approach to management. *Bulletin of Khmelnytsky National University, 4*(2), 42–51.

Semenova, S., Kovova, I., Shuliarenko, S., Shpyrko, O., & Bukoros, T. (2020). Estimation of transport industry's economic sustainability as an element of strategic management: Case of Poland and Ukraine. *Problems and Perspectives in Management, 18*(2), 501–514. https://doi.org/10.21511/ppm.18(2).2020.41

Semenova, S. M., Shpyrko, O. M., Ziabchenkova, H. V., & Kuzmenko, O. P. (2021). Risks in the system of accounting and financial statements. *Business Inform*, *10*, 290–297. https://doi.org/10.32983/2222-4459-2021-10-290-297

Shulha, O., Yanenkova, I., Kuzub, M., Muda, I., & Nazarenko, V. (2022). Banking information resource cybersecurity system modeling. *Journal of Open Innovation: Technology, Market, and Complexity, 8*(2), 80. https://doi.org/10.3390/joitmc8020080

Tarashevsky, M. M. (2020). Organizational and economic mechanism of risk management of transport enterprises. *Actual Problems of Economics*, *2*(224), 124–140. https://eco-science.net/wp-content/uploads/2020/03/2.20._topic_Tarachevskii-M.M..pdf

The Institute of Internal Auditors Ukraine. (2017). *International Standards for the Professional Practice of Internal Auditing (Standards)*. http://iia-ua.org/wp-content/uploads/2013/08/IPPF-Standards-2017-Ukrainian.pdf

The Verkhovna Rada of Ukraine. (2017). *The Law of Ukraine "On the basic principles of cybersecurity in Ukraine"*. https://zakon.rada.gov.ua/laws/show/2163-19#Text

Vyhivska, I. (2018). Risk management in accounting. *Central Ukrainian Scientific Bulletin. Economic Sciences, 3*. http://dspace.kntu.kr.ua/jspui/bitstream/123456789/3306/3/Vegiv.pdf