

UDC 657.330.3

**Iershova N.**

*Doctor of Economics, Associate Professor,  
Professor Department of Economic Analysis and Accounting,  
National Technical University «Kharkiv Polytechnic Institute», Ukraine;  
e-mail: iershova.ny@gmail.com; ORCID ID: 0000-0003-3544-3816*

**Kryvytska O.**

*Doctor of Economics, Associate Professor,  
Associate Professor at the Finance, Accounting and Auditing Department,  
The National University of «Ostroh Academy», Ukraine;  
e-mail: olha.kryvytska@oa.edu.ua; ORCID ID: 0000-0002-0844-3362*

**Kharchuk Yu.**

*Ph. D. in Economics, Associate Professor,  
Associate Professor at the Finance, Accounting and Auditing Department,  
The National University of «Ostroh Academy», Ukraine;  
e-mail: julia.kharchuk@oa.edu.ua; ORCID ID: 0000-0003-4874-1652*

### **ACCOUNTING AND ANALYTICAL INFORMATION FORMATION BY BUSINESS ENTITIES UNDER CONDITIONS OF SUSTAINABLE DEVELOPMENT CONCEPT REALIZATION**

**Abstract.** According to the results of studies of scientists researches publications and empirical studies on accounting and analytical information, the relevance of its formation in the conditions of the concept of sustainable development increases. Attention is focused on the importance of factors influencing the generation of relevant accounting and analytical information for decision-making on sustainable development of the enterprise. The factors influencing the generation of up-to-date accounting and analytical information by focus groups are highlighted.

The experience of Ukraine shows that the development of automated information systems in the field of accounting and analysis increases the role of the accountant in the analytical management of the enterprise. The focus is on changing the management style, which affects the formation of relevant accounting and analytical information for decision making. The ability to manage critical situations is a professional competence of the subject of management. This requires in-depth reflection and understanding of each critical situation, the definition of clear positions, the formation of new strategies and management methods.

The information value and usefulness of tools and methods of management accounting (system of balanced indicators, budgeting, management reporting, management analysis) for making management decisions by the management of companies are studied.

The author's model of formation of the accounting and analytical information at the enterprise in the conditions of action of the concept of sustainable development is proposed. Structure of strategic management accounting, which determines the configuration of techniques and methods of forming relevant information is substantiated. The principles of formation of the accounting and analytical information at the enterprise in the conditions of action of the concept of sustainable development are defined.

The grounds have been formed for identifying modules of strategic management accounting as effective technology of formation of the accounting and analytical information for needs of management are formed. The proposals on the content and tasks of accounting, analytical, reporting modules in the system of strategic management accounting are determined.

**Keywords:** accounting and analytical information, strategic management accounting, management, sustainable development, decision making.

**JEL Classification** C81, D83, M41

Formulas: 0; fig.: 3; tabl.: 1; bibl.: 13.

**Єршова Н. Ю.**

доктор економічних наук, доцент,  
професор кафедри економічного аналізу та обліку,  
Національний технічний університет «Харківський політехнічний інститут», Україна;  
e-mail: iershova.ny@gmail.com; ORCID ID: 0000-0003-3544-3816

**Кривицька О. Р.**

доктор економічних наук, доцент,  
доцент кафедри фінансів, бухгалтерського обліку та аудиту,  
Національний університет «Острозька академія», Україна;  
e-mail: olha.kryvytska@oa.edu.ua; ORCID ID: 0000-0002-0844-3362

**Харчук Ю. Ю.**

кандидат економічних наук, доцент,  
доцент кафедри фінансів, бухгалтерського обліку та аудиту,  
Національний університет «Острозька академія», Україна;  
e-mail: julia.kharchuk@oa.edu.ua; ORCID ID: 0000-0003-4874-1652

## ФОРМУВАННЯ ОБЛІКОВО-АНАЛІТИЧНОЇ ІНФОРМАЦІЇ СУБ'ЄКТАМИ ГОСПОДАРЮВАННЯ В УМОВАХ ДІЇ КОНЦЕПЦІЇ СТАЛОГО РОЗВИТКУ

**Анотація.** За результатами досліджень публікацій науковців, а також емпіричних досліджень щодо обліково-аналітичної інформації збільшується актуальність її формування в умовах дії концепції сталого розвитку. Акцентовано увагу на значущості факторів, які впливають на генерування актуальної обліково-аналітичної інформації для ухвалення рішень щодо сталого розвитку підприємства. Виокремлено фактори, що впливають на генерування актуальної обліково-аналітичної інформації за фокус-групами.

На прикладі досвіду України показано, що розвиток автоматизованих інформаційних систем у сфері обліку та аналізу збільшує роль бухгалтера в аналітичному забезпеченні управління діяльністю підприємства. Зосереджено увагу на зміні стилю управління, який впливає на формування актуальної обліково-аналітичної інформації для ухвалення рішень. Уміння управляти критичними ситуаціями є професійною компетентністю суб'єкта управління. Це потребує поглибленої рефлексії і розуміння кожної критичної ситуації, визначення чітких позицій при формуванні нових стратегій і методів управління.

Досліджено інформаційну цінність і корисність інструментів та методів управлінського обліку (система збалансованих показників, бюджетування, управлінська звітність, управлінський аналіз) для ухвалення управлінських рішень менеджментом компаній.

Запропоновано авторську модель формування обліково-аналітичної інформації на підприємстві в умовах дії концепції сталого розвитку. Обґрунтовано структуру стратегічного управлінського обліку, яка визначає конфігурацію прийомів і способів формування актуальної інформації. Визначено принципи формування обліково-аналітичної інформації на підприємстві в умовах дії концепції сталого розвитку.

Сформовано підстави для розвитку модулів стратегічного управлінського обліку як дієвої технології формування обліково-аналітичної інформації для потреб менеджменту. Окреслено пропозиції щодо змісту і завдань облікового, аналітичного, звітного модулів в системі стратегічного управлінського обліку.

**Ключові слова:** обліково-аналітична інформація, стратегічний управлінський облік, управління, сталий розвиток, ухвалення рішень.

Формул: 0; рис.: 3; табл.: 1; бібл.: 13.

**Introduction.** The ideological plot of the sustainable development concept lies in a balanced attention to the financial, environmental and social performance of companies. This objectively increases the requirements for management and highlights the need for accounting and analytical support for managerial decisions. In recent years of accounting theory and practice a new stage of its dialectic was defined, requiring integration and significant modernization of

scientifically sound and effective techniques and methods of collecting and processing accounting and analytical information into domestic practice of Ukraine.

**Problem analysis and problem statement.** Foreign and Ukrainian scientists pay attention to the problem of accounting and analytical information formation for making managerial decisions concerning sustainable development of enterprises. In a number of works, scientists highlighted the theoretical foundations of the sustainable development concept [1], methodological approaches to the formation of accounting and analytical management mechanism [2; 3], concepts that improve accounting and analytical support for management decisions [4; 5]. Over the past few years, the vector of non-financial accounting and reporting system development has been formed in accounting science and practice in order to form accounting and analytical information in the conditions of the sustainable development concept. Within the framework of this issue, foreign scientists study the relations with stakeholder groups for the implementation of sustainable development strategies (R. Freeman, K. Fussler, T. Holmes, D. Eclington), the impact of sustainable development on the operating activities of companies (L. van Wassenhav, P. Kleindorfer, C. Corbett, K. Singal), the system of sustainable development indicators (G. Azzone, L. Braat, R. Welford, R. Hines, A. Warhurst, Shamsi S. Bawaneh etc.). The results confirm the relevance of further research on the formation of accounting and analytical information by business entities in the context of the sustainable development concept realization.

**The purpose of the article** is to consider theoretical aspects and practical recommendations for the formation of accounting and analytical information by business entities in the context of the sustainable development concept realization.

**Research methods.** In the process of organizing and conducting research, general scientific and special research methods are used. Methods such as analysis, synthesis, comparison in the study of theoretical developments of Ukrainian and foreign scientists related to the research topic were effective. Distribution of the significance of factors influencing the generation of relevant accounting and analytical information for decision-making on sustainable development of the enterprise by the method of expert assessments. The model of formation of accounting and analytical information at the enterprise in the conditions of the concept of sustainable development is formed using the method of logical modeling. The structure of strategic management accounting, which determines the configuration of techniques and methods of information formation is determined on the basis of the system method.

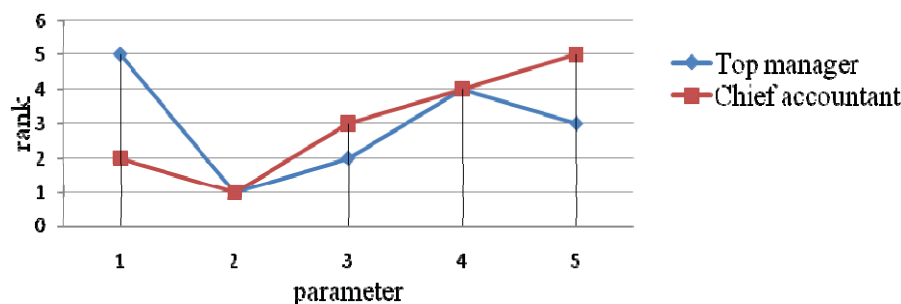
**Results of the research.** The growth of information availability about different areas and activities transforms and develops the subsystem of accounting and analytical support of the enterprise. Investigating the issue of the accounting and analytical information importance in the context of the sustainable development concept realization, an expert survey was conducted in focus groups. To do this, experts were asked to identify factors that contribute to the generation of relevant accounting and analytical information for decision-making on sustainable development. A survey of top managers and chief accountants of 20 mid-level Kharkiv enterprises was conducted using the interview method. The results are given in the *Table, Fig. 1.*

Table

**Distribution of the significance of factors influencing the generation of relevant accounting and analytical information for decision-making on sustainable development of the enterprise (in %), according to respondents**

Parameter	Focus groups	
	Top managers	Chief accountants
1. Competences of a specialist in the field of accounting management	15,4	21,4
2. The application of new technologies, tools and methods of management accounting and analysis	26,8	28,8
3. Creating specialized computer programs	21,4	19,4
4. New accounting software	16,9	17,4
5. New management styles	19,5	13

Source: calculated by the authors.



**Fig. 1. Ranking of the significance distribution of factors that affect the generation of relevant accounting and analytical information by focus groups**

Source: calculated by the authors.

Each estimate given by the experts is expressed by  $R_{ij}$  — the number of a natural series (so that the value of 1 — is given to the maximum estimate and value  $n$  — is given to the minimum). Based on the conducted expert survey, we formulated conclusions. The development of automated information systems in the field of accounting and analysis increases the role of the accountant in the analytical management of the enterprise. In terms of information value and usefulness for management decisions, respondents noted the following technologies, tools and methods of management accounting: a system of balanced scores (14.6 %), budgeting (12.8 %), management reporting (10.2 %), management analysis (6.5 %).

Fragmentary use of management accounting in enterprises does not allow management to fully look at the benefits of information. As a result, it hinders the development of management accounting and distribution.

The new management style influences the generation of relevant accounting and analytical information for decision-making on sustainable development of the enterprise. Taking into account the principles of systematization [6] the concept of sustainable development of the enterprise provides an opportunity to present the object and the subject of management as a whole. The subject of management needs the ability to professionally manage critical situations, requiring in-depth reflection and understanding in each specific situation, defining clear positions in relation to them, forming new relationships, new forms, strategies and management methods. The accounting-analytical and control information formed in the accounting-analytical subsystem of the enterprise are the basis for the reflection mechanism. Due to this, the subject of management has the opportunity to assess the economic situation and the choice of management action from the standpoint of its impact on the future state of the object considering other criteria (including social and environmental) for development assessment.

Undoubtedly, the process of forming such information is complex. This is due to the need to collect and process a significant amount of information about external (general economic, political, market, etc.) and internal (investment, financial, production, etc.) factors in real and retrospective time stances. It should be noted that due to the exchange of economic information, the subject and the object of management are in constant interaction, resulting in the process of ensuring sustainable development. Information is exchanged through direct and feedback channels. The latter is necessary for a timely response to the current situation in the management systems to ensure sustainable development of the enterprise. In this context, the importance of early warning tests for its implementation deserves attention [7].

The model of accounting and analytical information formation at the enterprise in the



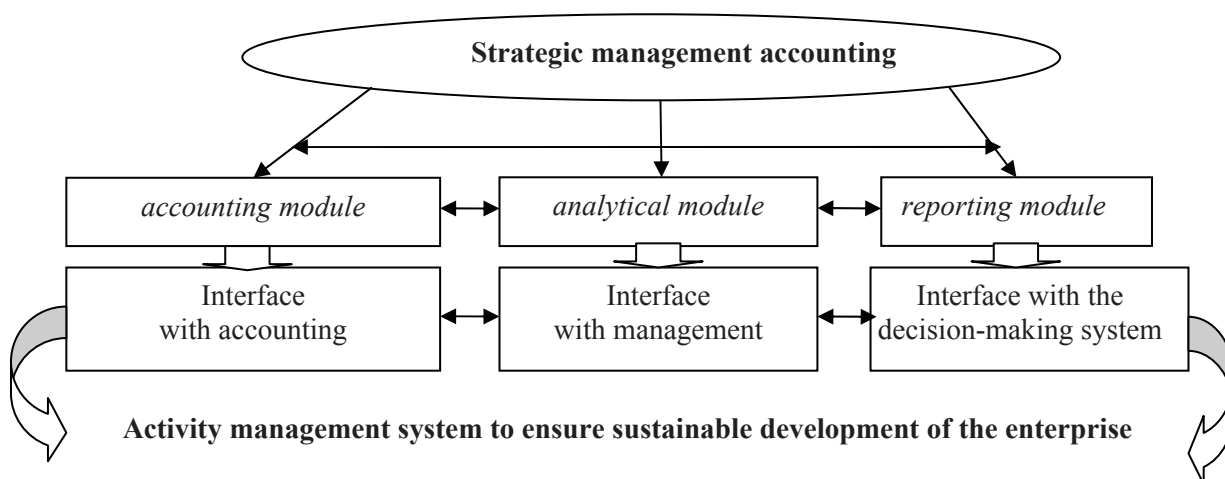


Fig. 3. **The structure of strategic management accounting, which determines the configuration of techniques and methods of information formation**

Source: calculated by the authors.

*Accounting module.* This module includes strategic cost accounting focused on efficient use of resources and achieving competitive advantage. Cost management at the strategic level is an inter-functional process that takes place everywhere in business processes and crosses the boundaries of functional units. The accounting module of strategic management accounting has an interface with accounting in order to generate the necessary information for the management of the enterprise.

*Analytical module.* This module includes a system of analytical indicators, calculation algorithms, analysis horizons and forms of their presentation in reporting. Due to the monitoring, the structure of this module is clarified taking into consideration the changes in the economic environment, strategic development goals. The processes that occur in the formation of information in the analytical module of strategic management accounting are complex and their effective implementation is based on the number of principles:

- consistency of information with the enterprise's hierarchical strategies and stages of their implementation,
- compliance of information to a specific user's information request,
- compliance of information with changes in external and internal environments, which allows rapid adaptation of corresponding indicators for threat assessment and capacity building,
- reliability of information,
- the effectiveness of information for the implementation of management decisions to ensure targeted strategic guidelines, business reputation of the enterprise.

Adherence to the mentioned principles ensures the consideration and use of analytical information for strategic management accounting in the control panel of the enterprise at different levels of its hierarchy.

*Reporting module.* In this block we offer the formation of analytical reports on information requests of different types (specific analytical report, report on a specific indicator). Implementation of document flow schemes and standard information-analytical reports with fixed execution stages, circle of responsible executors, statement of working tasks for executors. Storage, archiving of information on previously performed analytical requests of stakeholder groups. Preparation and execution of analysis results in the form of a strategic report.

Depending on the complexity of analytical problems, we propose to differentiate them into three groups.

I. Standard reports contain simple analytics based on the application of a plan / fact analysis. They have a single methodology of formation, a uniform structure, as easy as possible for strategic analysis and control. Reports are subject to regulation.

II. Special reports include analytics with factor analysis (detection and analysis of relationships between phenomena and processes, identification of the most significant factors, establishing the relations forms and closeness of correlation), analytics with trend analysis (construction and analysis of trends from past to future), analytics with complex synthetic analysis. Special reports are usually irregular, contain information about the most important indicators for the functioning of the enterprise, contain analytics with factor analysis (identification of factors, forms and analysis of the relations), analytics with trend analysis (construction and analysis of trends to predict the future company development), analytics with complex synthetic analysis. Special reports are generated in order to solve a specific management task, have a flexible structure that allows grouping of the information to select the best options for achieving goals and addressing issues that arise in the operational process.

III. Strategic reports — reports with complex analytics (scenario and dynamic modeling, trend analysis). Such reports allow strategic decisions on the basis of defined options for solving the problems, to play different development scenarios in dynamics in real time. They are created on special information requests or for a specific project and contain information that reveals the causes and consequences of the enterprise results, its strategic business units and structural units (functions). These reports are comprehensive documents that provide management with a fairly large amount of information when making strategic decisions and focuses on potential development opportunities and possible threats of future periods [9; 10].

The reporting module of strategic management accounting has an interface with the management decision-making system, which is provided by the basic principles of strategic reporting [11; 12]:

- 1) complexity — the report should form a holistic picture of the enterprise, the interrelations of factors that affect the growth of its value in the future;
- 2) targeting — the inclusion of information that is relevant to a certain range of interested users;
- 3) reliability — the information reflected in the reporting must reflect both positive and negative facts, in a balanced form and without errors;
- 4) essentiality — reports reflect only the information which may significantly affect the activities of the enterprise in the foreseeable future;
- 5) rationality — the included information should be most useful for the user;
- 6) brevity — the report should not be overloaded with a large amount of data, the information should be concise and clear.

When creating an information base for compiling management reports, it is necessary to form a set of accounting, planning, financial and non-financial information about the enterprise's activities. Accounting information should be based on primary facts of economic activity (business transactions) recorded in the primary accounting documents at the stage of primary accounting, indicators of accounting, statistical and operational-technical accounting, obtained in a result of of primary information systematization and generalization in accordance with tasks, requirements and methodology of each accounting type. Cheng W. Y., Su E., Li S. J. are note if necessary, it is expedient to include statistical accounting information useful for substantiation of management decisions in management reporting [13].

Thus, in terms of strategic development concept, strategic management accounting is characterized by the following properties:

- integration (the deeper a certain direction of sustainable development is developed, the more points of contact of strategic management accounting information with information of other subsystems are defined);
- synergy (due to the information of strategic management accounting increases the level of information support of all structural units and functional elements while ensuring sustainable development of the enterprise as a whole);
- innovation (the ability to respond systematically to external changes by forming a certain type of knowledge to forecast the cost, profitability of sales in the long run; development of

strategic plans; assessment of current activities by comparing the relative costs of the company and competitors; choosing alternatives to make strategic decisions in order to fulfil the goals of sustainable development).

**Conclusions.** The article develops theoretical aspects and offers practical recommendations for the formation of accounting and analytical information by business entities in the context of the sustainable development concept realization. The research has a scientific novelty, which is to improve the structure of strategic management accounting, which determines the configuration of techniques and methods of information formation. The modular structure of strategic management accounting was presented, providing an opportunity to provide flexible adjustment of the management system to changes in the external and internal environment of the enterprise on the basis of the necessary information. Data sources for information formation in each module were characterized and the connection with interfaces was substantiated. The practical significance of the study is to increase the effectiveness of accounting information based on the model of the accounting and analytical information formation in the conditions of sustainable development concept realization was proposed. Prospects for further research lie in the development of procedures for the formation, presentation and analysis of information for management decisions at different stages of sustainable development strategy.

#### Література

1. Корнійчук Л. Теоретичні основи реалізації концепції сталого розвитку. *Економіка України*. 2010. № 2. С. 72—83.
2. Голячук Н. В. Обліково-аналітичне забезпечення як важлива складова управління підприємством. *Економічний аналіз*. 2010. Вип. 6. С. 408—410.
3. Гудзинський О. Д., Кірейцев Г. Г., Пахомова Т. М. Теоретичні аспекти формування обліково-аналітичного механізму менеджменту. *Облік і фінанси АПК*. 2008. № 3. С. 89—93.
4. Shamsi S. Bawaneh Using the Balanced Scorecard Perspectives to Measure the Performance of Manufacturing Companies in Jordan. *Academy of Accounting and Financial Studies Journal*. 2019. № 23 (5). P. 1—15.
5. Shah H., Malik A., Malik M. Strategic management accounting — a messiah for management accounting? *Australian Journal of Business and Management Research*. 2010. № 1 (4). P. 1—7.
6. О'Коннор Дж., Макдермотт И. Искусство системного мышления: Необходимые знания о системах и творческом подходе к решению проблем. Москва : Альпина Бизнес Букс, 2006. 211 с.
7. Кривицька О. Р. Система контролю діяльності компаній зі страхування життя як інформаційний ресурс. *Проблеми економіки*. 2019. № 1 (39). С. 191—198.
8. Bondar M., Iershova N., Tkachenko M., Garkusha V., Yavorsky S. Financial decisions taking into account management reporting of enterprise. *Financial and credit activities: problems of theory and practice*. 2020. № 2 (33). С. 84—92. URL : <http://fkd.org.ua/article/view/206532>.
9. Report of the World Commission on Environment and Development: Our Common Future. *UN*. 1987. URL : <https://www.un.org/ru/ga/pdf/brundtland.pdf>.
10. Sustainability Reporting in Emerging Markets: An analysis of the sustainability reporting in selected sectors of seven emerging market countries. SIRAN, KLD, Social Investment Forum, 2018.
11. Azcárate F., Carrasco F., Fernández M. The role of integrated indicators in exhibiting business contribution to sustainable development: a survey of sustainability reporting initiatives. *Spanish Accounting Review*. 2011. № 14 (1). P. 213—240.
12. Zwolak J. The financial security of small- and medium-sized enterprises in Poland. *Ekonomski preglad*, 2017. № 68 (4). P. 399—412.
13. Cheng W. Y., Su E., Li S. J. A Financial Distress Pre-Warning Study by Fuzzy Regression Model of TSE-Listed Companies. *Asian Academy of Management Journal of Accounting and Finance*, 2006. № 2 (2). P. 75—93.

Статтю рекомендовано до друку 11.02.2021

© Єршова Н. Ю., Кривицька О. Р., Харчук Ю. Ю.

#### References

1. Korniiuchuk, L. (2010). Teoretychni osnovy realizatsii kontseptsii staloho rozvytku [Theoretical bases of realization of the concept of sustainable development]. *Ekonomika Ukrainy — Economy of Ukraine*, 2, 72—83 [in Ukrainian].
2. Holiachuk, N. V. (2010). Oblikovo-analitychne zabezpechennia yak vazhlyva skladova upravlinnia pidpriemstvom [Accounting and analytical support as an important component of enterprise management]. *Ekonomichniy analiz — Economic Analysis*, 6, 408—410 [in Ukrainian].
3. Hudzynskiy, O. D., Kireitsev, H. H., & Pakhomova, T. M. (2008). Teoretychni aspekty formuvannya oblikovo-analitychnoho mekhanizmu menedzhmentu [Theoretical aspects of the formation of accounting and analytical mechanism of management]. *Oblik i finansy APK — Accounting and finance of agro-industrial complex*, 3, 89—93 [in Ukrainian].
4. Shamsi, S. B. (2019). Using the Balanced Scorecard Perspectives to Measure the Performance of Manufacturing Companies in Jordan. *Academy of Accounting and Financial Studies Journal*, 23 (5), 1—15.
5. Shah, H., Malik, A., & Malik, M. (2011). Strategic management accounting — a messiah for management accounting? *Australian Journal of Business and Management Research*, 1 (4), 1—7 [in Ukrainian].
6. O'Connor J., McDermott I. (2006). Iskusstvo sistemnogo myshleniya: Neobhodimye znaniya o sistemah i tvorcheskom podhode k resheniyu problem [The art of systems thinking: Necessary knowledge of systems and a creative approach to problem solving]. Moscow: Al'pina Biznes Buks [in Russian].



7. Kryvytska, O. R. (2019). Systema kontroliu diialnosti kompanii zi strakhuvannia zhyttia yak informatsiinyi resurs [The system of control over the activities of life insurance companies as an information resource]. *Problemy ekonomiky — Problems of the Economy*, 1 (39), 191—198 [in Ukrainian].
8. Bondar, M., Iershova, N., Tkachenko, M., Garkusha, V., & Yavorsky, S. (2020). Financial decisions taking into account management reporting of enterprise. *Financial and credit activities: problems of theory and practice*, 2 (33), 84—92. Retrieved from <http://fkd.org.ua/article/view/206532>.
9. Report of the World Commission on Environment and Development: Our Common Future. (1987). *UN*. Retrieved from <https://www.un.org/ru/ga/pdf/brundtland.pdf>.
10. Sustainability Reporting in Emerging Markets: An analysis of the sustainability reporting in selected sectors of seven emerging market countries. (2018). SIRAN, KLD, Social Investment Forum.
11. Azcárate, F., Carrasco, F., & Fernández, M. (2011). The role of integrated indicators in exhibiting business contribution to sustainable development: a survey of sustainability reporting initiatives. *Spanish Accounting Review*, 14 (1), 213—240.
12. Zwolak, J. (2017). The financial security of small- and medium-sized enterprises in Poland. *Ekonomski pregled*, 68 (4), 399—412.
13. Cheng, W. Y., Su, E., & Li, S. J. (2006). A Financial Distress Pre-Warning Study by Fuzzy Regression Model of TSE-Listed Companies. *Asian Academy of Management Journal of Accounting and Finance*, 2 (2), 75—93.

The article is recommended for printing 11.02.2021

© Iershova N., Kryvytska O., Kharchuk Yu.