THE METHODOLOGICAL BASIS FOR BANK LENDING TO INDUSTRIAL ENTERPRISES

Abstract. The research paper is devoted to the development of methodological foundations of bank lending to industrial enterprises in accordance with the formation of new economic relations based on the priority of knowledge, deepening of digitalization and dissemination of ideas of social ecology in its broad sense. In particular, the article is clarified the economic essence of the concept of «bank lending to industrial enterprises» through the prism of a set of scientific approaches. The modern principles of implementation of bank lending to industrial enterprises are also formulated in this article. A comprehensive refinement of the economic content of the concept under study was carried out using the institutional, functional and reproductive approaches of scientific cognition. Each of the scientific approaches has contributed to a comprehensive disclosure of the characteristics of bank lending to industry. As a result of using an institutional scientific approach to disclose the economic essence of bank lending to industrial enterprises, a species structure of its institutional environment was formulated. It was reasoned that the institutional environment of bank lending to industrial enterprises should be structured in terms of the following components: financial institution (in which banks, especially industrial banks, play a special role); production and technology institution (in which innovative industrial enterprises and smart industry enterprises play a special role); legal institution; industrial lending infrastructure institution; sustainable finance institution; institutional arrangements and its social relations. Through the functional approach, a number of functions of the financial and economic nature of bank credit and the activities of industrial enterprises were traced in a cause-and-effect relationship. The reproductive approach of scientific cognition has helped to reveal the economic essence of bank lending to industrial enterprises, emphasizing its role in reproductive processes and its importance for the development of the whole economy. The formulated principles of bank lending to industrial enterprises are in line with current trends in financial and credit relations between banks and industry, and also take into account the basic principles of the transition to a knowledge-based economy.

Keywords: industry, industrial enterprises, lending, bank lending to industrial enterprises, institutional approach, functional approach, reproductive approach, principles of bank lending to industrial enterprises.

JEL Classification G21

Formulas: 0; fig.: 5; tabl.: 1; bibl.: 19.
МЕТОДОЛОГІЧНИЙ БАЗИС БАНКІВСЬКОГО КРЕДИТУВАННЯ ПРОМИСЛОВИХ ПІДПРИЄМСТВ

Анотація. Присвячено розвиткові методологічних засад банківського кредитування промислових підприємств відповідно до умов становлення нових економічних відносин, заснованих на пріоритеті знань, поглибленій цифровізації та поширенні ідей суспільної екологічності в широкому їй розумінні. Зокрема, уточнено економічну сутність поняття «банківське кредитування промислових підприємств» через призму сукупності наукових підходів, а також сформульовано сучасні принципи його реалізації. Комплексне уточнення економічного змісту досліджуваного поняття здійснено за інституційним, функціональним і відтворювальним підходами наукового пізнання. Кожен із наукових підходів сприяє всебічному розкриттю характерних особливостей банківського кредитування промисловості. У результаті використання інституційного наукового пізнання до розкриття економічної сутності банківського кредитування промислових підприємств було сформовано видову структуру його інституційного середовища. Обґрунтовано, що інституційне середовище банківського кредитування промислових підприємств потребує структури з галузевих компонент: фінансовий інститут (у якому особлива роль відводиться банкам, у тому числі й індустріальним, промисловим банкам); виробничо-технологічний інститут (в якому особлива роль відводиться інноваційним промисловим підприємствам, підприємствам смарт-промисловості); правовий інститут; інститут інфраструктури кредитування промисловості; інститут сталого фінансування; інституційне узгодження та суспільні відносини між ними. Завдяки функціональному підходу прослідковано причинно-наслідковий зв'язок низки функцій фінансово-економічного характеру банківського кредиту і діяльності промислових підприємств. Відтворювальний підхід наукового пізнання сприяв розкриттю економічної сутності банківського кредитування промислових підприємств відповідно до економіки знань.

Ключові слова: промисловість, промислові підприємства, кредитування, банківське кредитування промислових підприємств, інституціональний підхід, функціональний підхід, відтворювальний підхід, принципи банківського кредитування промислових підприємств.

Формул: 0; рис.: 5; табл.: 1; бібл.: 19.

Introduction. The socio-economic and political trends suggest that the modern global economy is about to change significantly. It may pose new challenges for an industrial development worldwide. The unresolved problems of a substantial number of industrial enterprises of post-Soviet and developing countries (for example: lack of modernization; lack of energy-saving technologies; lack of innovation; low level of investment; lack of own financial resources for development, etc.) are compounded by the consequences of the pandemic’s dominance in today’s world. The development of bank lending to industrial enterprises is one effective way of solving these problems. Bank lending to industrial enterprises can also provide them with new opportunities in the knowledge economy. S. D. Smolinska, I. O. Samchenkova (2018) rightly note that “a loan is an auxiliary tool which ensures that entities do not withdraw from the market, but rather hold a strong position and maintain opportunities for their development” [1]. At the same time, a study of the scientific literature suggests that there is currently no independent term for «bank lending to industrial enterprises». The concepts of «bank lending to enterprises», «lending to industrial enterprises» and «lending to industry» are mainly used. In the foreign scientific literature the following terms are used: «corporate loans», «business loans», «enterprise finance», «industrial loans». In general, in the foreign scientific literature, when considering the problems of bank lending to industrial enterprises, two notions are operated: «industrial loans» and «commercial loans». There is a fundamental difference between these types of loans in terms of their nature and
the key subjects involved: in particular, the specialization of the bank itself and the objectives of the borrowing company. Thus, commercial banks provide companies with short-term loans to cover operational costs and replenish working capital, while industrial banks supply production companies with long-term «industrial» loans (with terms of 15 to 20 years), which they use to cover capital costs and investments in fixed assets [2].

The specific of the structure of the domestic banking system is different, so in the vast majority of domestic academic sources, a bank is a creditor of any business entity, regardless of its sectoral affiliation. Thus, there is currently no definition of the economic essence of bank lending to industrial enterprises that takes into account modern trends and the multi-aspect nature of the relationship between banks and industry. In order to deepen the understanding of the economic essence of the concept of bank lending to industrial enterprises, a comprehensive approach to its definition should be used.

**Analysis of researches and problem statement.** A great number of foreign and domestic scholars have devoted their scientific researches to the different aspects of the financial-credit relations of banks and industrial enterprises. In the foreign academic literature, in our view, the works of R. Cameron, K. Samuelsson, B. Schull, R. Granstone, J. Kadarova, R. Bajus, R. Rajnoha, G. Dell’Ariccia, D. Kadyrzanova, C. Minoiu, L. Ratnovsk should be highlighted. First of all, it should be noted that foreign scholars took a particular scientific interest in the various aspects of the financial and credit relations between banks and industry after the first wave of industrialization of the economy. Thus K. Samuelson investigated the role of banks in financing industry between 1900 and 1927, focusing on how the relationship between banks and industry developed and changed in relation to the First World War [3]. The R. Cameron’s research focuses on how banking contributes to industrialization and how this is affected by political factors. The scholar concluded that banks, through their intermediary functions and lending activities, facilitated the structural changes in the economy necessary for industrialization, thus ensuring an accelerated pace of development [4, p. 134]. B. Schull has devoted considerable attention in his works to the problem of conflicts of interest arising from the unclear separation of banks and industrial corporations. In particular, the scholar notes: «... the possibility of multiple conflicts of interest where a bank owns the company to which it extends a loan or on whose securities it underwrites raises issues of long history» [5, p. 40]. R. Granstone focuses on the organizational, financial and economic aspects of the establishment of the relationship between banks and industry. In particular, the scholar’s research focuses on three aspects: the extent to which banks can be involved in non-financial activities, the extent to which banks own industrial corporations, and vice versa, the extent to which industrial corporations own banks [3, p. 30]. J. Kadarova, R. Bajus, R. Rajnoha investigated the role and importance of bank lending in the optimal provision of financial resources for industry, using Slovakia as an example [7]. At the present stage of the development of the relationship between banks and industrial enterprises, scholars are particularly interested in bank lending in the context of the «knowledge economy». In particular, G. Dell’Ariccia, D. Kadyrzanova, C. Minoiu, L. Ratnovsk investigated the structure of bank loan portfolios during the transition of the real sector to the knowledge economy [8].

It is also necessary to emphasize the contribution to the study of the problems of financial and credit relations between banks and enterprises, including industrial enterprises, by such national scholars as O. V. Dziubliuk, O. L. Malakhova, N. V. Paranytsia, S. D. Smolinska, I. O. Samchenkova and many others. In particular, O. V. Dzyublyuk and O. L. Malakhova in their works [9; 10] focus on the role and importance of banks in lending to industrial enterprises and, in this context, on its significance for the development of the whole economy. Works of I. A. Samchenkova [1], N. V. Paranitsa [11], S. D. Smolinskaya, and others are devoted to the issues of development opportunities of enterprises, including industrial ones, as a result of bank lending.

The results of the scientists’ work are commendable, but, at the same time, it should be noted that the scientific approaches to defining the economic essence of the financial and credit relations between banks and industrial enterprises need further development. In our opinion, it is
necessary to clarify the economic essence of bank lending to industrial enterprises and to formulate the modern economic development principles of bank lending to industrial enterprises. This is an important step for the further development of its methodology in the framework of the new economic relations based on the priority of knowledge, the deepening of digitalization and the dissemination of ideas of social ecology in its broad sense.

The purpose of the article is to develop a methodological framework for bank lending to industrial enterprises.

Research results. To date, the development of domestic bank lending to industrial enterprises looks rather subdued. Comparing the shares of various industrial branches in the share of loans granted to industrial enterprises by EU and Ukrainian banks, we can conclude that bank lending to industrial enterprises in Ukraine is not well developed (Table).

Table

| The industrial sector | 2019 EU | 2019 Ukraine | 2020 EU | 2020 Ukraine |
|-----------------------|--------|-------------|--------|--------------|
| B Mining and quarrying, % | 5.71 | 1.00 | 5.31 | 1.73 |
| C Manufacturing, % | 53.87 | 23.69 | 53.63 | 23.16 |
| D Electricity; gas; steam and air conditioning supply, % | 17.16 | 7.47 | 17.67 | 9.21 |
| E Water supply; sewerage, waste management and remediation activities, % | 3.38 | 0.17 | 3.47 | 0.05 |
| F Construction, % | 19.89 | 4.33 | 19.92 | 2.74 |

Source: compiled and calculated by the authors on the basis of statistical data [12; 13].

Moreover, the proportions of the shares of the various industrial branches in the gross value added (GVA) of the gross domestic product (GDP) and in the loan portfolios of Ukrainian banks in recent years indicate a low level of investment return on financial resources (exception is construction) (Fig. 1).

Fig. 1. Dynamics of the shares of different industrial branches in the gross value added of the GDP and in the loan portfolio of Ukrainian banks, 2019 — Q3 2021

Source: compiled and calculated by the authors on the basis of statistical data [13; 14].
One of the main reasons for the low efficiency of the bank loan portfolio in the industrial sector is the high level of non-performing loans, especially in foreign currency. In particular, in recent years nearly a third of the share of non-performing bank loans has been non-performing loans to industry. As of 01.12.2021, the share of non-performing loans to industry had fallen to 23.32%, but its share in foreign currency remained high at 52.63% [13].

It should be noted that the share of gross non-performing loans and advances in the gross loans and advances portfolio of EU banks as at 31.12.2020 was 2.81%. Also this indicator has been decreasing steadily since 2014: from 5.42% in 2014 to 2.81% by the end of 2020 [12].

Thus, modern trends in bank lending to industrial enterprises in Ukraine indicate the need to develop effective measures to activate it. In order for such measures to be effective, it is important to clarify the methodological framework of the examined subject, namely: 1) to clarify the economic content of the concept of «bank lending to industrial enterprises» through the prism of a set of scientific approaches; 2) to formulate principles of bank lending to industrial enterprises that are relevant to the modern development of the economy.

A comprehensive disclosure of the economic essence of bank lending to industrial enterprises, in our view, is advisable through the use of institutional, functional and reproductive approaches of scientific cognition (Fig. 2).

Fig. 2. Scientific approaches to defining the economic essence of «bank lending to industrial enterprises»

Source: compiled by the authors under [15; 16].

First of all, it should be noted that the conceptual core of the institutional scientific approach is the concept of «institution». One of the most precise definitions of the essence of the concept of «institution», in our opinion, belongs to Nobel laureate in economics D. C. North (1997): «...institutions are the rules, enforcement mechanisms, and norms of behavior that structure recurring interactions between people». The famous economist also noted that «...institutions influence the economic process by influencing the surpluses of exchange and production» [17].

In turn, A. N. Asaul (2004) distinguish the following features of the use of the institutional scientific approach in economic research: in consideration of the role of institutions while explaining the motives and behavior of economic agents, as well as its influence on decision-making; in consideration of the organization as a system with its own internal structure of interests; in consideration of the economy as a constantly evolving open system [18].

An important step in defining the economic essence of the concept of bank lending to industrial enterprises according to the institutional approach is the construction of its institutional environment. In our opinion, such an institutional environment should include not only the main participants in the loaning process, but also their institutions and connections, which altogether ensures the implementation of the entire process. The species structure of the institutional environment of bank lending to industrial companies is presented at Fig. 3.
In our view, with the emergence of a sustainable economy and the gradual emergence of a sustainable financing institution, it is important that bank lending to industrial enterprises is also based on sustainable development, especially to those sectors of the economy that are socially archival or that have a significant impact on the external environment.

Thus, the institutional environment of bank lending to industrial enterprises should be structured as follows: financial institution (in which banks, especially industrial banks, play a special role); production and technology institution (in which innovative industrial enterprises and smart industry enterprises play a special role); legal institution; industrial lending infrastructure institution; sustainable finance institution; institutional arrangements and its social relations.

As follows, according to the institutional approach of scientific knowledge, bank lending to industrial enterprises can be defined as a specific set of institutions that are involved parties in the process of lending, where the main ones are banks as lenders and industrial enterprises as borrowers, which, guided by legal norms, and respecting the property interests of each party, by mutual agreement, implement public relations concerning the movement of temporarily free own or

---

**Fig. 3. The species structure of the institutional environment of bank lending to industrial companies**

*Source*: by the authors.
loan capitals from banks to industrial enterprises, satisfying their need for financial and credit support.

As for the functional scientific approach, it should be noted that it is based on the criteria’s of effectiveness, as well as on the focusing on achieving a certain goal of the enterprise as a result of the performance of a number of inherent functions [19, p. 861].

Determining the economic essence of bank lending to industrial enterprises in accordance with the functional-scientific approach requires studying the cause-effect relationships between the particular financial and economic functions of bank lending and the activities of the industrial enterprise (Fig. 4).

---

**Fig. 4. Causal links between the financial and economic functions of bank credit and the activities of industrial enterprises**

**Source:** compiled by the authors under [15, p. 170; 16, p. 28].
Guided by the functional approach, in our opinion, bank lending to industrial enterprises can be defined as public relations arising between a bank and an industrial enterprise, other subjects of lending, the economic essence of which consists in the redistribution by the bank of part of its own or loan capital on the terms defined by the loan agreement, in order to provide the industrial enterprise with the necessary financial resources for more effective performance of its functions and achievement of positive results of economic development.

The reproductive scientific approach originates from the reproduction function of the industrial enterprise. Thus, if we focus on the place and role of bank lending to industrial enterprises in the economy, we can conclude that this role lies precisely in the specifics of the production activities of the industrial enterprise. This specificity gives rise to its ability to influence the processes of reproduction in the economy as well as on its sustainable development. Indeed, it is the production of the means of production (means of labor and items of labor) by industrial enterprises that largely determines the development of the productive and non-productive sectors of the economy and socio-economic development as a whole. Accordingly, from the point of view of the reproductive approach, the essence of the concept of bank lending to industrial enterprises, in our opinion, can be disclosed as follows: bank lending to industrial enterprises is a set of public relations for the redistribution of monetary resources released in the process of capital circulation between the banking sector, represented by the bank as lender, and the industrial sector of the economy, represented by an industrial enterprise or their group as borrower, and other participants in lending, which ensures a continuous reproduction process in the economy for its sustainable development.

When examining the issue of bank lending to industrial enterprises, it is important to highlight the principles of its implementation that are relevant for the current development of the economy (Fig. 5).

**Fig. 5. Contemporary principles of bank lending to industrial enterprises**

*Source: by the authors.*

| Principle                           | Description |
|-------------------------------------|-------------|
| The principle of autonomy           | Provides for a certain separation of bank and industry interests in order to avoid the possibility of banks potentially controlling industry or vice versa |
| The principle of equal opportunities| Ensures that banks as lenders create equal conditions for different industrial enterprises as borrowers, provided that their financial condition and business reputation comply with the bank’s internal rules |
| The multi-level scaling principle   | Provides for a level of investment return on the bank’s lending resources that enhances not only the productive capacity of the individual industrial borrower, but also its industry |
| The principle of information and digital competence | Means building financial and credit relations between banks and industry in line with modern innovative information and digital technologies |
| The principle of banking ethics     | Means understanding by the banking industry of the consequences for society that may be encountered in the future if industrial enterprises are financed without a system of corporate social responsibility, a pronounced environmental policy, etc. |
Thus, in our view, the standardized principles of lending to industry (term of lending, loan repayment, collateral, intended use of loan proceeds, etc.) should be supplemented by the principles of autonomy, equal opportunities, multilevel scaling, information and digital competence, banking ethics, in response to current economic trends.

**Conclusions.** To summarize the above, we conclude that the development of the methodological framework for bank lending to industrial enterprises should take into account current trends in the development of financial and credit relations between banks and industry, the basic principles of the transition to a knowledge-based economy, and be based on the concept of sustainable development. Clarifying the economic content of «bank lending to industrial enterprises» in a complex institutional, functional and reproductive scientific approach has several advantages. In particular, each of the constituent approaches of scientific cognition provided a more comprehensive and more thorough disclosure of the essence of the concept under study. Thus, the peculiarities of defining the economic essence of the concept of «bank lending to industrial enterprises» according to the institutional approach are as follows: highlighting the institutional affiliation of the subjects of credit; constructing an institutional environment within the concept under study, reflecting current trends in the development of the knowledge economy, smart industry; understanding the norms and rules of institutions, their motives, qualitative changes in contemporary economic development. The functional scientific approach clarifies the content of the concept under study through the prism of the interrelated functions of the participants in bank lending to industry, without which achieving the purpose of lending is impossible. The reproductive approach clarifies the essence of the concept of bank lending to industrial enterprises through its role and importance in reproductive processes in the economy. The principles of bank lending to industry, formulated in accordance with the current trends in the development of financial and credit relations between banks and industry, as well as the basic principles of the transition to a knowledge-based economy, thoroughly complement the methodological foundations of bank lending to industrial enterprises.

**Література**

1. Смолінська С. Д., Самченкова І. О. Шляхи покращення здійснення кредитних операцій банками у напрямі підвищення ефективності діяльності підприємств. Молодий вчений. 2018. № 10 (62). C. 885—888. URL : https://financial.lnu.edu.ua/wp-content/uploads/2015/10/203.pdf.

2. Glass & Goldberg. The difference between industrial and commercial banks. 2020. URL : https://glassgoldberg.com/2020/02/24/the-difference-between-industrial-and-commercial-banks.

3. Samuelsson K. The banks and the financing of industry in Sweden. Scandinavian Economic History Review. 1958. P. 1900—1927.

4. Cameron R. Banking in the early stages of industrialization: a preliminary survey. Scandinavian Economic History Review. 1963.

5. Shull B. The separation of banking and commerce in the United States: an examination of principal issues. Washington, D.C., U.S.: Office of the Comptroller of the Currency, 1991. URL : http://link.library.in.gov/portal/The-separation-of-banking-and-commerce-in-the-A-T34x0yIKk.

6. Granstone R. Principles of Banking Law. Edition 2. Great Britain, Norfolk : Biddies Ltd, King’s Lynn, 2002. URL : https://www.modares.ac.ir/uploads/En-Law.Book.3.pdf.

7. Kadarova J., Bajus R., Rajnoha R. Optimal Financing of the Industrial Enterprise. Procedia Economics and Finance. 2015. № 23. P. 953—958.

8. Dell’Ariccia G., Kadyrzhanova D., Minoiu C., Ratnovski L. Bank lending in the knowledge economy. ECB Working Paper. 2020. P. 2429. URL : https://www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2429–c7e30ee02.pdf.

9. Дзюблюк О. Інтеграція банківського та промислового капіталів і кредитні відносини. Бюлетень Національного банку України. 2002. № 10. C. 11—17. URL : http://dspace.wumu.edu.ua/handle/316497/17701.

10. Дзюблюк О. В., Махалова О. Л. Банки і підприємства: кредитні аспекти взаємодії в умовах трансформації економіки : монографія. Тернопіль : Вектор, 2008. 324 с.: URL http://dspace.wumu.edu.ua/bitstream/316497/526/1/kreditnyi_aspekty_vzaemodii.pdf.

11. Пізнанець Н. В. Особливості взаємодії банків і промислових підприємств. Науковий вісник Національного університету ДНІЩ України. 2011. № 4 (55). C. 89—95. URL : http://ir.nusta.edu.ua/jspui/bitstream/doc/1542/1/688_IR.pdf.

12. Supervisory and prudential statistics of European Central Bank. URL : https://sdw.ecb.europa.eu/browse.do?node=9691144.

13. Наглядова статистика Національного банку України. URL : https://bank.gov.ua/ua/statistic/supervision-statist.

14. Державна служба статистики України. URL : http://www.ukrstat.gov.ua.

15. Шишкіна О. Класифікація промислових підприємств у контексті управління фінансовими ризиками. Галецький економічний вісник. 2020. № 2 (63). C. 164—175. URL : https://galicianvisnyk.in.tntu.edu.ua/pdf/63/819.pdf.

16. Сидоренко В. Кредит: сутність, функції та форми прояву. Сіміна фінанси. 2009. № 3 (20). C. 24—33. URL : http://dspace.wumu.edu.ua/bitstream/316497/25853/1/%D0%A1%D0%B8%D0%B4%D0%BE%D1%80%D0%B5%D0%BD%D0%BA%D0%BE%20%D0%92.pdf.
Стаття рекомендована до друку 25.01.2022

© Хуторна М. Е., Герасименко А. В.

References

1. Smolinska, S. D., & Samchenkova, I.O. (2018). Shliakty pokrashc hennia zdiisnennia kredytnykh operatsii bankamy u napriami pidvyshchennia efektyvnosti dializalnih pidpryiemstv [Ways to improve the implementation of credit operations by banks in the direction of improving the efficiency of enterprises]. Modolyi vchenyi — A young scientist, 10 (62), 885—888. Retrieved from https://financial.lnu.edu.ua/wp-content/uploads/2015/10/203.pdf [in Ukrainian].

2. Glass & Goldberg. (2020). The difference between industrial and commercial banks. URL: https://glassgoldberg.com/2020/02/24/the-difference-between-industrial-and-commercial-banks.

3. Dziubliuk, O., & Makhalova, O. L. (2008). Integratsiia bankivskoho ta promyslovoho kapitaliv i kredytni vidnosyny [Integration of banking and industrial capital and credit relations]. Retrieved from https://www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2429~c7e30ec0e2.en.pdf.

4. Paranytsia, N. V. (2011). Osobl yvosti vzaiemodii bankiv i promy slovykh pidpryiemstv [Peculiarities of dealings between banks and industrial enterprises]. Naukovyi visnyk Nationalnoho universytetu DPS Ukrainy — Scientific Bulletin of the National University of State Tax Service of Ukraine, 4 (55), 89—95. Retrieved from http://ir.nusta.edu.ua/jspui/bitstream/doc/1542/1/688_IR.pdf [in Ukrainian].

5. North, D. (1990). Institutions, institutional change and economic performance. Cambridge: Cambridge University Press. Retrieved from https://www.cambridge.org/core/books/institutions-institutional-change-and-economic-performance/AAE1E27DF8996E24C5DD07EB79BBA7EE#:~:text=North%20argues%20that%20the%20kinds,path%2Ddependent%20%20of%20development.

6. Asaul, A. N. (2004). Teoriya i metodologiya institucional’nyh vzaimodeystviy sub’ektov investicionno-stroitel’nogo kompleksa [Theory and methodology of institutional interactions of the subjects of the investment and construction complex]. Saint-Petersburg: «Gumanistika». Retrieved from http://lib.i-btu.by/handle/22092014/81 [in Russian].

7. Chernenkova, E. V., & Martynov, A. A. (2018). Perekhod funktsional’noho pidkhodu do upravlinnia dohodami i vytратami pidpryiemstva [Advantages of a functional approach to income and expenditure management]. Hlobalni ta natsionalni problemy ekonomiky — Global and national economic problems, 22, 860—864. Retrieved from http://global-national.in.ua/archive/22/2018-162.pdf [in Ukrainian].

The article is recommended for printing 25.01.2022

© Khutorna M., Herasymenko A.