

PROJECT MANAGEMENT AND FINANCIAL AND ECONOMIC SECURITY IN THE CONDITIONS OF GLOBALIZATION

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DIGITALIZATION OF RISK-ORIENTED MANAGEMENT OF FINANCIAL AND ECONOMIC SECURITY OF THE BANK

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The scientific results of the study are to determine the current trends of digitalization of risk-oriented management of banking activities to justify the directions of increasing the level of financial and economic security of Ukrainian banks in the context of the Russian-Ukrainian war and considering the needs of economic recovery. The expediency of using indicators of financial stability, which are published by the National Bank of Ukraine under martial law, has been proven, namely: the capital of the first level to the assets weighted by risk; the ratio of the capital of the first level to assets; non-performing loans excluding provisions for capital; non-performing loans to aggregate gross loans; rate of return on assets; net open position in foreign currency to capital. It is determined that modern banks introduce innovative digital solutions aimed at risk-oriented management of financial and economic security in a continuous real-time mode. Some procedures are performed automatically, and it is possible to use artificial intelligence programs, but these innovations must be managed carefully because we are talking about the financial security of millions of bank customers and the financial and economic security of banks, as well as the financial stability of the banking system of Ukraine. It has been substantiated that prospects for further research should be developed in the areas of economic recovery in Ukraine, by strengthening the banking system and developing digitalization of risk-based management of financial and economic security of banks using best practices and international experience. For a more objective assessment of the level of financial and economic security of Ukrainian banks, it is advisable to apply economic standards, regarding banking risks, indicators of financial stability, and the financial stress index, which together reflect the bank's propensity for force majeure in the financial system, the ability to resist and adapt to adverse changes, and various economic challenges.

ДІДЖИТАЛІЗАЦІЯ РИЗИК-ОРІЄНТОВАНОГО УПРАВЛІННЯ ФІНАНСОВО-ЕКОНОМІЧНОЮ БЕЗПЕКОЮ БАНКУ

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фінансово-економічна
безпека банку

Науковими результатами дослідження є визначення сучасних тенденцій діджиталізації ризик-орієнтованого управління банківською діяльністю для обґрунтування напрямів підвищення рівня фінансово-економічної безпеки банків України в умовах російсько-української війни та з урахуванням потреб економічного відновлення. Доведена доцільність використання для цього індикаторів фінансової стійкості, що за умов воєнного стану оприлюднюються Національним банком України, а саме: капітал першого рівня до зважених за ризиком активів; співвідношення капіталу першого рівня до активів; непрацюючі кредити без урахування резервів до капіталу; непрацюючі кредити до сукупних валових кредитів; норма прибутку на

активи; чиста відкрита позиція в іноземній валюті до капіталу. Визначено, що сучасні банки запроваджують інноваційні діджитал-рішення, спрямовані на ризик-орієнтоване управління фінансово-економічної безпекою в безперервному режимі реального часу, деякі процедури виконуються автоматично, можливе застосування програм штучного інтелекту, проте з цими новаціями треба поводитися обережно, адже йдеться про фінансове убезпечення мільйонів банківських клієнтів і фінансово-економічну безпеку банків, а також фінансову стабільність банківської системи України. Обґрунтовано, що перспективи подальших досліджень мають розгортатися за напрямками відновлення економіки України, зокрема шляхом зміцнення банківської системи, розвитку діджиталізації ризик-орієнтованого управління фінансово-економічною безпекою банків із використанням передової практики та міжнародного досвіду. Для більш об'єктивного оцінювання рівня фінансово-економічної безпеки банків України доцільно застосовувати економічні нормативи, зокрема щодо банківських ризиків, індикатори фінансової стійкості, а також індекс фінансового стресу, що в сукупності відображають схильність банку до форс-мажорних проявів у фінансовій системі, здатність чинити опір, адаптуватися до несприятливих змін, різноманітних економічних викликів.

Statement of the problem

First, the coronavirus crisis and then a full-scale Russian-Ukrainian war inflicted powerful blows, on the banking system of Ukraine. Each bank passed the strength test much more seriously than any stress test, while some banks failed and were recognized by the regulator as insolvent and subsequently liquidated. However, most Ukrainian banks have demonstrated extraordinary endurance potential, which indicates an elevated level of financial and economic security.

However, this is not a reason to be satisfied with the results achieved; the war continues because of the Russian insidious invasion, and the influence of banking risks on the financial and economic security systems of banks, as well as on the financial stability of the banking system of Ukraine as a whole, is aggravated. The solution to these problems should also take place systematically, based on modern opportunities that are caused by the digitalization of the economy.

Analysis of recent studies and publications

The study of the results of the most interesting scientific research on the digitalization of risk-oriented management of the financial and economic security of the bank makes it possible to substantiate several practical proposals that are aimed at developing this area of banking and ensuring a high level of financial and economic security of Ukrainian banks in the conditions of war, with a focus on post-war economic recovery.

Among the analyzed scientific papers, it is worth highlighting the publication of Guley A. and Guley S. on the digital transformation of the domestic banking environment in the context of the development of the fintech ecosystem [1]. Mirosnik R. and Kukhta I. thoroughly studied the main trends towards digitalization of the banking system of Ukraine in modern conditions [2]. Alternatively, Tishchenko D. has his own position on digital transformation as a driver of the development of Ukraine's economy [3].

A separate important direction, which is developed by the National Bank of Ukraine and improved by individual

banks, is focused on managing banking activities while considering risks. For example, Tomarovich T. describes the features of a risk-oriented approach to the management of financial flows by banks in world practice and from the experience of Ukraine [4].

Researcher Ryazanova N. carefully studied the possibilities of ensuring financial and economic security in the conditions of shadow banking [5], although the efforts of the national regulator almost nullified the scheme of abuse in the banking system of Ukraine. Scientist Shpylovyi B. substantiated the structure and components of the system of financial and economic security of banking institutions [6]. These and other scientific developments became the basis for this study of the digitalization of risk-oriented management of the financial and economic security of Ukrainian banks.

Objectives of the article

The purpose of the scientific research is to determine the current trends of digitalization in risk-oriented banking management to substantiate the directions for increasing the level of financial and economic security of Ukrainian banks in the conditions of the Russian-Ukrainian war and considering the needs of economic recovery.

The main material of the research

Modern digital technologies play a crucial role in the development of the banking system in Ukraine. Through their application, banks can provide customers with new modern banking products and financial services [2].

The digitalization of banks has a significant correlation with existing scientific developments and research in the field of information technology. A significant impact on the development of digitalization in banks is the presence of qualified personnel, banking professionals who have mastered information technology and artificial intelligence programs [1].

Currently, the most actively implemented digitalization in Ukraine are systemically important banks. Prospects for researching the topic of digitalization of banking activities

are to develop theoretical and practical recommendations aimed at using digital technologies to introduce modern approaches to managing banking risks to increase the competitiveness of banks and ensure their financial and economic security even despite the challenges of the Russian-Ukrainian war [3].

The banking system of Ukraine continues to function quite stably, as evidenced, for example, by the profitability of most banks. Consequently, the aggregate financial result of banks is also positive in 2022, even despite the Russian-Ukrainian war. Although profitability is not limited to the financial stability of the banking system or the financial stability of individual banks, it is important to assess their financial and economic security [6]. Justifying the relevance of the problems of analyzing the financial and economic security of the bank, it is necessary to determine its economic essence as well as current trends in the development of the banking system that affect the security of Ukrainian banks.

It is known that the financial condition of the bank characterizes its financial and economic results of work for a certain period, but always on a certain date when the analysis is carried out, and determines the financial potential of the bank for further development, ensuring its competitive advantages in accordance with the strategy, mission, goals, and objectives. Of course, the topic is not new, but today banks must introduce financial innovations, repurpose business processes considering digital transformations of the economy, develop risk-oriented approaches to management, including financial management, and build relationships with customers based on corporate social responsibility in accordance with the requirements of compliance and financial monitoring. This complicates the analytical work on assessing the financial and economic security of banks; however, at the same time, it opens new opportunities for more objective and comprehensive assessments that take into account stress tests and the adaptability of banks in the financial aspect.

Now the analysis of the financial and economic security of the bank must necessarily cover economic standards, regarding banking risks, established by the regulator. They were introduced to ensure the stable activities of banks and timely fulfillment of their obligations to their depositors, as well as to prevent improper allocation of resources and loss of capital due to the risks inherent in banking [5].

It is also important to consider the indicators of the financial stability of banks introduced by the NBU,

considering the international requirements for regulating banking activities. They cover 40 main and recommended indicators, among which 12 are the main ones:

- 1) the ratio of regulatory capital to risk-weighted assets;
- 2) the ratio of regulatory capital level 1 to risk-weighted assets;
- 3) the ratio of non-performing loans, excluding reserves, to capital;
- 4) the ratio of non-performing loans to total gross loans;
- 5) the ratio of loans by sectors of the economy to total gross loans;
- 6) rate of return on assets;
- 7) rate of return on capital;
- 8) the ratio of interest margin to gross income;
- 9) the ratio of non-interest expenses to gross income;
- 10) the ratio of liquid assets to total assets;
- 11) the ratio of liquid assets to short-term liabilities;
- 12) the ratio of the net open position in foreign currency to capital [7].

The dynamics of the main indicators of financial stability, which, considering banking risks, determine the financial and economic security of banks and are published by the National Bank of Ukraine in the conditions of war in the banking system, reflect contradictory trends (table 1).

The capital base is strengthened, the level of capitalization of the banking system increases, which positively affects risk management and financial and economic security, and profitability increases. But the share of non-performing loans is also increasing, which increases credit risks (figure 1).

Also in Ukraine, the national regulator introduced a financial stress index for banks, which allows:

- measure the stress level of the financial system;
- assess the depth and duration of the period of instability in financial markets, as well as compare it with the level of stress in past crises;
- to assess (together with other indicators) the effectiveness of anti-crisis measures;
- to determine the nature of the shocks to the financial system and its individual components, systemic or episodic [8].

A full-scale invasion of Russia in 2022 caused a sharp increase in the value of the index. All its components grew, which indicates the systemic nature of stress for the financial sector. At first, the high values of the financial stress index were determined by the growth of profitability in the securities market, the volatility of the exchange rate in the cash foreign exchange market, the elevated level of foreign

Table 1 – The main indicators, which in the conditions of war are published by the National Bank of Ukraine, characterize the impact of banking risks on the financial and economic security of banks, %

Indicators	2022Q1	2022Q2	2022Q3	2022Q4	2023Q1	2023Q2	2023Q3	Absolute deviation
Tier 1 capital to risk weighted assets	11.65	11.40	12.75	13.12	13.41	14.51	14.76	3.11
Ratio of Tier 1 capital to asset	6.30	5.75	5.58	5.18	5.07	5.13	5.11	-1.19
Non-performing loans excluding provisions for capital	11.78	18.91	24.45	34.42	32.00	27.38	26.25	14.47
Non-performing loans to aggregate gross loans	27.06	29.70	33.63	38.12	37.92	38.94	37.87	10.81
Rate of return on assets	-0.02	-0.40	0.70	1.48	1.32	1.28	1.25	1.27
Net open position in foreign currency to capital	34.21	34.36	43.70	45.60	49.78	49.98	45.10	10.89

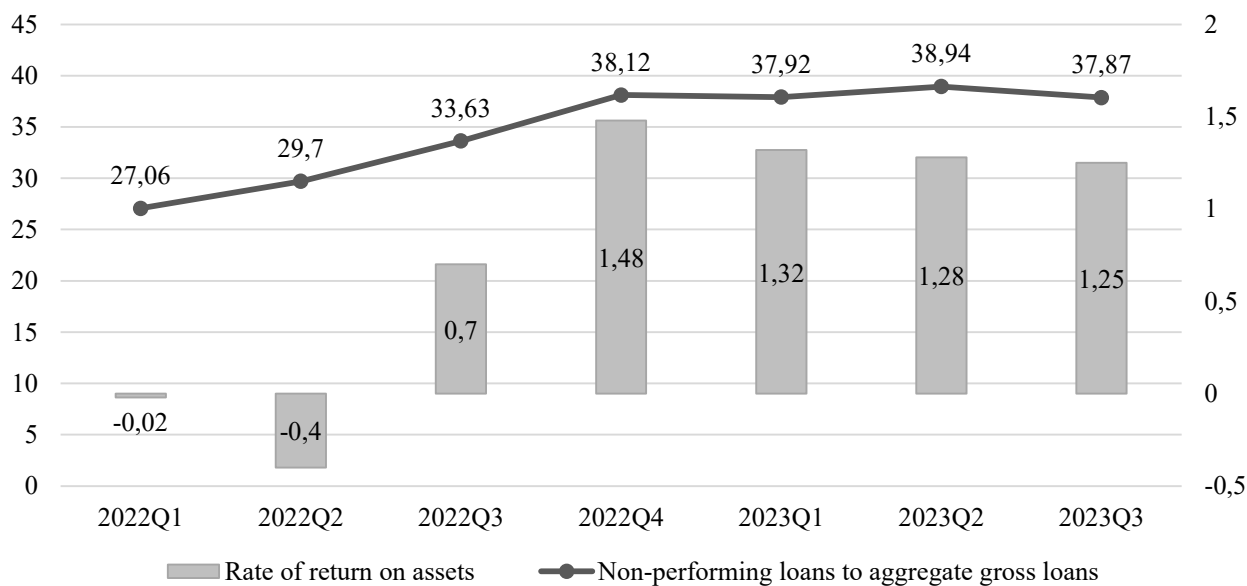


Fig. 1 – Contradictory changes in financial indicators regarding banking risks and the financial and economic security of Ukrainian banks,%

exchange interventions, and the refinancing of banks by the National Bank of Ukraine to maintain their liquidity. These changes are represented by the graph (figure 2).

Of the latest trends that contribute to the risk-oriented management of financial and economic security of banks based on digitalization, it should be noted that from now on, the National Bank of Ukraine acts as a subscriber and provider of services in the BankID NBU System, introducing a new online service that provides information from the Credit Register of the National Bank of Ukraine for individuals. This allows users of the system to receive information in electronic form about their loans at banks in the amount of 100 minimum wages (today it is 617 thousand UAH). To use this service, you must have an account with a bank that is a member of the NBU BankID System and log in on the NBU Credit Register page [9].

The BankID system of the National Bank of Ukraine is a state system of remote identification that provides

the transfer of personal data of users from the bank in which the account is opened to the entities that provide the service to the user. Today, 99.9% of cardholders can access a wide range of remote services using this system. Such an example demonstrates how the introduction of digital solutions contributes to improving the security of banking customers, on the one hand, and, on the other hand, contributes to improving the financial and economic security of Ukrainian banks.

Conclusions

Modern banks introduce innovative digital solutions aimed at risk-oriented management of financial and economic security in a continuous real-time mode. Some procedures are performed automatically, and it is possible to use artificial intelligence programs, but these innovations must be managed carefully because we are talking about the financial security of millions of bank



Fig. 2 – Dynamics of the Financial Stress Index, which determines the level of financial and economic security of Ukrainian banks, taking into account risks

customers and the financial and economic security of banks, as well as the financial stability of the banking system in Ukraine.

For an objective assessment of the level of financial and economic security of Ukrainian banks, it is advisable to apply economic standards, regarding banking risks, indicators of financial stability, and the financial stress index, which together reflect the bank's propensity for

force majeure in the financial system, the ability to resist and adapt to adverse changes, and various economic challenges.

Prospects for further research should be developed in the areas of economic recovery in Ukraine, by strengthening the banking system and developing digitalization of risk-based management of financial and economic security of banks using best practices and international experience.

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