

Zhykhor O., Reshetnyak O., Zhykhor B., Yurchenko O.

## NEW CHALLENGES IN INFORMATION-ANALYTICAL AND REGULATORY SUPPORT FOR THE FINANCIAL SECURITY OF BANKING INSTITUTIONS

*This article is dedicated to the study of information-analytical support for the financial security of banking institutions. The regulatory framework governing financial security in the banking sector is assessed. Mechanisms for managing financial security in modern economic conditions are analyzed. Regulatory control of financial security in the banking sector is an important element of economic stability. The improvement of the legislative framework in line with international standards will help reduce risks and enhance the resilience of Ukraine's banking system. Practical recommendations are developed to enhance the financial security of banking institutions. Prospects for further research on this topic include studying the best practices of global financial institutions and adapting these practices to the activities of domestic banking institutions.*

**Keywords:** financial security of banking institutions, internal and external threats, sources of information, methods for assessing financial security in banking, information-analytical systems, crisis management, digital technologies, National Bank of Ukraine.

**Problem Statement.** Financial security of banking institutions is a key element of the stability of the national economy and financial system. Ensuring an adequate level of financial security for banking institutions is an urgent necessity in the context of globalization, digitalization of banking services, and the growing financial risks.

In the current environment, the main challenges for banks are economic instability, fluctuations in

Ukraine's gradual post-war economic development.

---

© **Olena Zhykhor**, Doctor of Economic Sciences, Professor, Professor of the Department of Hotel and Restaurant Business and Food Technologies, Educational and Scientific Institute "Institute of International Relations and Tourism Business", Karazin National University, [olena.zhykhor@karazin.ua](mailto:olena.zhykhor@karazin.ua)

**Olena Reshetnyak**, Doctor of Economic Sciences, Associate Professor, Professor of the Department of Hotel and Restaurant Business and Food Technologies, Educational and Scientific Institute "Institute of International Relations and Tourism Business", Karazin National University, [olena.reshetnyak@karazin.ua](mailto:olena.reshetnyak@karazin.ua)

**Bohdan Zhykhor**, Bachelor's student in the specialty "Hotel and Restaurant Business," Educational and Scientific Institute "Institute of International Relations and Tourism Business", Karazin National University, [bohdan.zhykhor@student.karazin.ua](mailto:bohdan.zhykhor@student.karazin.ua)

**Oleksii Yurchenko**, PhD student, Research Center for Industrial Development Problems, National Academy of Sciences of Ukraine, [ahelless162@gmail.com](mailto:ahelless162@gmail.com)

exchange rates, growing inflation risks, and the risk of insolvency of counterparties. The level of financial institutions' security is significantly affected by various cyber threats to banking infrastructure, as well as financial fraud.

Effective information and analytical support plays an important role in ensuring the financial security of banking institutions, including monitoring financial indicators, analyzing market risks, utilizing modern financial technologies, and forecasting threats. The regulatory and legal framework governing the activities of banks in the field of financial security needs improvement to provide a foundation for enhancing it.

Rapid qualitative and quantitative changes in the global economy, particularly the development of financial technologies (FinTech) and the activation of international regulatory standards (such as Basel III, FATF), force domestic banks to adapt their strategies for ensuring financial security to new innovative challenges.

Research into the information-analytical and regulatory support of the financial security of banking institutions is extremely relevant in the current context of the three-year military aggression of Russia against Ukraine, as the level of financial security directly affects the overall stability of Ukraine's financial system, the trust of future investors, and the effectiveness of **Analysis of Recent Research and Publications**. A wide range of issues related to the informational, analytical, and regulatory support of financial security in banking institutions has been explored in the works of both domestic and foreign scholars. Notable domestic researchers who have paid significant attention to these issues include I. Blank, O. Baranovskyi, Z.

Varnaliyi, T. Vasylytsiv, V. Hlushchenko, M. Yermoshchenko, Y. Zhaliilo, O. Korystin, V. Muntyian, P. Orlov, I. Yaremko.

**Objectives of the Article.** The aim of the study is to substantiate the theoretical foundations, methodological approaches, and practical mechanisms for ensuring the financial security of banking institutions, with a focus on informational, analytical, and regulatory support in the context of new innovative challenges of modern realities.

To achieve this goal, the following tasks were addressed: the theoretical foundations of financial security in banking institutions were revealed (defining the essence, main threats, and factors that influence the level of financial security of banks); the informational and analytical support of financial security in banking institutions was examined (identifying sources of information, methods of analysis, and modern technologies that contribute to improving the security level of banking institutions); the regulatory framework in the field of financial security of banks was assessed (analyzing national and international standards that govern the activities of banks in this context); mechanisms for managing financial security in banking institutions were analyzed (evaluating the effectiveness of existing strategies and developing recommendations for their improvement); the role of the state and regulatory bodies in ensuring financial security was defined (investigating control, monitoring, and response measures to financial threats); practical recommendations for improving the financial security level of banking institutions were developed (proposing measures to minimize risks and improve the financial security system).

The achievement of the stated tasks enabled the formation of a comprehensive approach to ensuring the financial security of banks, contributing to the strengthening of the financial stability and stability of the banking system as a whole.

**Description of the Main Material of the Study.** Financial security of a banking institution is the state of protection of its financial resources, capital, assets, and financial flows from external and internal threats, ensuring stability, competitiveness, and the ability to fulfill obligations to clients and partners.

The financial security of a bank is a component of the overall economic security of a country and includes the following main aspects: liquidity – the bank's ability to fulfill its obligations on time; financial stability – ensuring an adequate level of capital and financial reserves; credit risk – assessment and management of the risk of loan defaults; operational risk – preventing losses due to ineffective internal processes; informational security

– protection of financial data and clients' personal information.

The financial security of a bank can be influenced by various threats, which can be divided into internal and external threats. Internal threats include: insufficient capital and liquidity; fraud or abuse by staff; ineffective risk management systems; technical vulnerabilities and information leaks. External threats include: macroeconomic instability (inflation, exchange rate fluctuations, financial crises); changes in legislation and increased regulatory pressure; competitive pressure from other financial institutions and FinTech companies; cyber threats (hacking attacks, phishing attacks, financial fraud); geopolitical risks (sanctions, wars, international financial restrictions).

Key factors affecting the financial security of banking institutions include: financial and economic – capitalization level, asset and liability structure, availability of financial reserves; regulatory – legislative requirements and standards (Basel III, International Financial Reporting Standards, National Bank requirements); technological – the introduction of digital technologies and the level of cybersecurity; social and personnel – professional level of staff, corporate culture, business ethics; political and geopolitical – the influence of international relations, economic sanctions, state policy toward the banking sector.

The financial security of a bank is a multi-component system that depends on effective risk management, compliance with regulatory requirements, and the use of modern technologies for analytics and threat forecasting. Considering both internal and external influencing factors allows banking institutions to maintain financial stability and competitiveness in a dynamic economic environment.

Informational-analytical and regulatory support of financial security in banks is an important tool for identifying, assessing, and managing risks. It includes the collection, analysis, processing, and use of financial, economic, legal, and market information to make effective decisions.

The main sources of information used to ensure the financial security of banking institutions include [9]:

1. Financial statements and analytical indicators: balance sheet, income statement, cash flow statement; key financial indicators: liquidity ratio, solvency, level of non-performing loans (NPL).

In 2023, the European Central Bank (ECB) introduced stricter requirements for stress testing banks, which helped identify liquidity weaknesses in some major European financial institutions.

2. Data from central banks and regulators: National Bank of Ukraine (NBU) capital adequacy (N2), liquidity (LCR) regulations, etc.; information on financial risks in the economy (inflation, currency fluctuations).

In 2022, the NBU introduced temporary currency restrictions to stabilize the financial system during martial law.

3. Rating agencies and financial analysts: creditworthiness assessments of banks and their clients by international agencies (Moody's, Standard & Poor's, Fitch); analytical forecasts of the stability of the banking sector.

In 2023, Moody's downgraded the rating of several American banks due to liquidity shortages and asset value declines following the bankruptcy of Silicon Valley Bank (SVB).

4. Information systems and Big Data: the use of artificial intelligence to predict banking risks; real-time transaction analysis to detect fraudulent schemes.

J.P. Morgan uses machine learning algorithms to analyze millions of transactions for suspicious activity.

Methods of financial security analysis for banks include:

1. Financial modeling and stress testing: assessing the impact of negative scenarios (economic crises, asset value declines, deposit withdrawals). The Federal Reserve System (FED) regularly conducts stress tests on the largest banks in the country to check their resilience in the event of financial shocks.

2. Early Warning System (EWS): automated algorithms to detect risks of bank insolvency or insolvency of its clients.

The European Single Supervisory Mechanism (SSM) uses EWS to monitor troubled financial institutions.

3. Monitoring suspicious transactions (AML systems): detecting transactions related to money laundering and terrorism financing.

In 2020, Deutsche Bank was fined millions due to inadequate monitoring of transactions that could have been linked to illegal financial flows.

The use of information and analytical systems in ensuring financial security is based on the following components [15]:

1. Automated analytical platforms: the use of software for risk analysis, such as SAS, SAP, IBM Watson. HSBC uses analytical systems to assess credit risks and detect financial fraud.

2. Blockchain and cryptography: the use of distributed ledgers to increase the transparency of financial transactions. Santander Bank uses

blockchain in international payments to reduce fraud risks.

3. Artificial intelligence and machine learning: analyzing large volumes of financial data to detect risks in real-time.

Citibank uses artificial intelligence to analyze customer behavior and detect anomalies in banking operations.

In Ukraine, the financial security of banks is regulated by the following key legislative acts:

1. The Law of Ukraine "On Banks and Banking" [2] (2000, as amended) – defines the legal foundations of banking activity, regulates issues of capitalization, liquidity, and risk management.

2. The Law of Ukraine "On the National Bank of Ukraine" – establishes the functions of the NBU regarding the regulation of the banking sector and defines its powers in ensuring financial stability.

3. The NBU Resolution "On the Approval of the Regulation on the Procedure for Regulating Banking Activities in Ukraine" – establishes economic standards governing liquidity, capital adequacy, and credit risk.

4. The Law of Ukraine "On Prevention and Counteraction to the Legalization (Laundering) of Criminally Obtained Income" – obliges banks to implement financial monitoring systems.

5. The Tax Code of Ukraine – regulates the taxation of banking operations and tax obligations of banking institutions.

International practice of ensuring financial security of banking institutions is based on the following key standards: Basel Accords (Basel I, II, III) – establish requirements for bank capital, risk management, and liquidity. Basel I (1988) defined minimum capital requirements for banks. Basel II (2004) introduced the assessment of operational risks and market discipline. Basel III (2010) strengthened liquidity and capitalization requirements for banks following the 2008 financial crisis.

In the European Union, the provisions of Basel III [6] are implemented through the CRD IV Directive:

1. FATF (Financial Action Task Force) Recommendations [16]: These regulate measures for combating money laundering and terrorist financing. In 2020, FATF added Ukraine to the list of countries requiring enhanced monitoring, which stimulated legislative changes.

2. International Financial Reporting Standards (IFRS): Establish unified approaches to accounting for banking operations, contributing to the transparency of banking institutions.

3. European Banking Directive (CRD IV, CRR): Regulates capital adequacy, liquidity, and corporate governance in the EU banking sector.

Despite the presence of an appropriate regulatory framework, Ukraine faces several challenges in ensuring financial security in the banking sector:

1. Insufficient implementation of international standards: For example, Basel III provisions [6] are being gradually implemented in Ukraine, limiting the competitiveness of banks.

2. High level of non-performing loans (NPLs): According to the National Bank of Ukraine (NBU) [12], as of 2021, the NPL ratio in Ukraine exceeded 30%, one of the highest levels in Europe.

3. Cyber risk threats: In 2022, cyberattacks on banking institutions increased significantly, necessitating stronger regulatory measures in information security.

4. Challenges in financial monitoring enforcement: Banks often struggle with implementing FATF requirements [16] due to the complexity of procedures and the lack of effective transaction monitoring mechanisms.

Prospects for Improving Legislative Regulation

1. Strengthening Ukraine's integration into the European banking system, particularly through the implementation of CRD IV standards.

2. Developing a national financial security assessment system for banks, incorporating modern IT solutions (artificial intelligence, Big Data).

3. Enhancing bank risk insurance mechanisms and increasing capitalization requirements for financial institutions.

Key Areas for Ensuring Financial Security in Banking

1. Crisis Management and Financial Monitoring in the Banking Sector: This area focuses on the timely identification of potential crises through systematic analysis of financial indicators, market conditions, and internal risks. Crisis management includes the development and implementation of crisis response scenarios, stress testing, liquidity control, and real-time financial performance monitoring [10].

Examples and Mechanisms [5]:

Stress Testing: Modeling scenarios of adverse impacts on a bank's assets and liabilities.

Early Warning Systems: Implementing signaling systems to promptly respond to market changes.

Real-time Financial Monitoring: Utilizing modern information technologies to analyze and control liquidity, loan portfolio activity, and market risks.

2. Implementation of Digital Technologies in Banking Financial Security

The digitalization of banking operations creates new opportunities for enhancing security levels. The use of advanced IT solutions enables automation of monitoring processes, ensures cyber resilience, and introduces innovative systems for detecting fraudulent transactions and analyzing risks in real-time [11].

Examples and Mechanisms [8]:

Biometric Identification and Multi-factor Authentication: Enhancing security for access to banking systems.

Blockchain Technology: Ensuring transparency and immutability of transaction data.

Intelligent Data Analysis (Big Data, AI): Leveraging machine learning algorithms to detect anomalies and predict risks.

Cybersecurity: Developing and implementing defense systems against cyber threats, network traffic monitoring, and vulnerability analysis.

3. The Role of the State and the National Bank in Ensuring Financial Security

State regulation and the activities of the National Bank [13] are key factors in maintaining the stability of the banking sector. These institutions are responsible for setting regulatory requirements, supervising banks, and developing policies and measures to prevent financial crises.

Examples and Mechanisms [7]:

Licensing and Supervision: Establishing requirements for obtaining banking licenses and ensuring regular compliance monitoring.

Reserve Requirements: Setting mandatory reserve norms to maintain liquidity.

Macroprudential Regulation: Developing measures to mitigate systemic risks, such as implementing additional capital requirements.

Regulatory Framework: Drafting legislative initiatives aimed at improving financial stability and transparency in banking operations.

The main directions for ensuring financial security in banking are presented in Table 1

**Conclusions and Prospects for Further Research.** Informational-analytical support of financial security in banking institutions is a key factor in effective risk management. The use of modern technologies (Big Data, AI, blockchain), stress testing, and analytical systems allows banks to respond to threats in a timely manner and strengthen financial stability. Real-world examples from global financial institutions.

demonstrate the effectiveness of such approaches and the necessity of their active implementation in contemporary banks.

The financial security of the banking sector is a key element of economic stability, regulated by both

Table 1.

## Key Directions for Ensuring the Financial Security of Banks

Direction	Description	Examples / Mechanisms	Literature Sources
Anti-crisis Management and Financial Monitoring	Timely detection and management of crisis phenomena in the bank through the analysis of financial indicators and market conditions.	- Stress Testing - Early Warning Systems - Operational Monitoring of Liquidity and Risks	- Іваненко В. (2017). Фінансовий моніторинг банків. - Базарний О. (2019). Антикризове управління в банківській сфері.
Implementation of Digital Technologies	Utilization of modern IT solutions for automating control, risk analysis, and ensuring cybersecurity in the banking system.	- Biometric and Multi-Factor Authentication - Blockchain Technologies - Utilization of AI and Big Data for Analysis - Cybersecurity Systems	- Коваленко О. (2020). Цифрові технології у фінансовій безпеці банків. - Доклад НБУ. (2021). Digitalization in Banking Sector.
The Role of the State and the National Bank	Ensuring the stability of the banking sector through regulatory oversight, supervision, and the development of policies to prevent crisis phenomena.	- Licensing and Control of Banking Activities - Reserve Requirements - Macprudential Regulation - Legislative Initiatives for Financial Stability	- НБУ. (2021). Регуляторні вимоги до банків. - Бондар С. (2018). Роль держави в забезпеченні фінансової безпеки банків.

Source: Created by the authors based on sources [5, 7, 8, 10, 11, 13].

national and international legal frameworks. Compliance with relevant standards and regulations ensures the resilience of banking institutions and prevents financial crises.

Regulatory control of financial security in the banking sector is an important element of economic stability. The improvement of the legislative framework in line with international standards will help reduce risks and enhance the resilience of Ukraine's banking system.

The main directions for ensuring the financial security of banks include: crisis management, which forms the basis for a prompt response to market instability and risk reduction, allowing banks to adjust their strategies in a timely manner; digital technologies that improve the efficiency of control, speed of data analysis, and reduce the human factor, positively influencing the overall level of security of banking institutions; state regulation and the active involvement of the National Bank of Ukraine, which will ensure the creation of a stable environment for the functioning of the banking sector through constant control and adaptation of the regulatory framework to the contemporary challenges of the changing economic situation.

Prospects for further research on this topic include studying the best practices of global financial institutions and adapting these practices to the activities of domestic banking institutions.

#### LIST OF SOURCES USED

1. Закон України від 6 грудня 2019 року № 361-IX „Про запобігання та протидію легалізації (відмиванню) доходів, одержаних злочинним шляхом, фінансуванню тероризму та фінансуванню розповсюдження зброї масового знищення“ <https://zakon.rada.gov.ua/laws/show/361-20#Text>

2. Закон України „Про банки і банківську діяльність“ (Відомості Верховної Ради України, 2000 р.).

3. Постанова Кабінету Міністрів України від 4 березня 2023 р. № 220 «Державна антикорупційна програма на 2023-2025 роки» <https://zakon.rada.gov.ua/laws/show/220-2023-%D0%BF#Text>

4. Державна служба фінансового моніторингу України. Офіційний сайт. <https://fiu.gov.ua/>

5. Базарний О. (2019). Антикризове управління в банківській сфері. Київ: Центр економічних досліджень.

6. Базельський комітет з банківського нагляду. Базель III: міжнародна регуляторна структура для зміцнення стійкості банків та банківських систем. Базель, 2010.

7. Бондар С. (2018). Роль держави в забезпеченні фінансової безпеки банків. Донецьк: Економічна думка.

8. Доклад Національного банку України. (2021). Digitalization in Banking Sector.

9. Економічна безпека: підручник з грифом МОНУ / авт. кол. ; за ред. д-ра екон. наук, проф. О. Б. Жихор, д-ра екон. наук, проф. О. І. Барановського. К. : УБС НБУ, 2015. 467 с.
10. Іваненко В. (2017). Фінансовий моніторинг банків. Львів: Львівський національний університет імені Івана Франка.
11. Коваленко О. (2020). Цифрові технології у фінансовій безпеці банків. Київ: Економіка і безпека.
12. Національний банк України. Звіт про фінансову стабільність. Київ, 2023.
13. Національний банк України (НБУ). (2021). Регуляторні вимоги до банків. Київ: НБУ.
14. Національна комісія з цінних паперів та фондового ринку. Офіційний сайт. <https://www.nssmc.gov.ua/activity/nahliad-za-rynkom/finansovyi-monitoring/>
15. Фінансова безпека суб'єктів господарювання: підручник з грифом МОНУ / авт. кол.; за ред. д-ра екон. наук, проф. О.Б. Жихор. К: УБС НБУ, 2014. 605 с.
16. FATF. International Standards on Combating Money Laundering and the Financing of Terrorism. Paris, 2020.

## REFERENCES

1. Zakon Ukrainy vid 6 grudnia 2019 roku № 361-IX «Pro zanobigannia ta protydiu lehalizatsii (vidmybanniu) dokhodiv, oderzhannykh zlotsynnym shliakhom, finansyvanniu teroryzmu ta finansyvanniu rozpovsiudzhennia zbroiy masovogo znyshchennia» [Law of Ukraine No. 361-IX of December 6, 2019 «On Prevention and Counteraction to the Legalization (Laundering) of Proceeds from Crime, Financing of Terrorism and Financing of the Proliferation of Weapons of Mass Destruction»]. (2019). Retrieved from: <https://zakon.rada.gov.ua/laws/show/361-20#Text> [in Ukrainian].
2. Zakon Ukrainy «Pro banky i bankivsku diialnist» (Vidomosti Verkhovnoi Rady Ukrainy, 2000 rik) [Law of Ukraine «On Banks and Banking Activities» (Vidomosti Verkhovnoi Rada of Ukraine, 2000)]. (2000). [in Ukrainian].
3. Postanova Kabinetu Ministriv Ukrainy vid 4 bereznia 2023 roku № 220 «Derzhavna antykoruptsiina programa na 2023-2025 roky» [Resolution of the Cabinet of Ministers of Ukraine of March 4, 2023 No. 220 «State Anti-Corruption Program for 2023-2025»]. (2023). Retrieved from: <https://zakon.rada.gov.ua/laws/show/220-2023-%D0%BF#Text> [in Ukrainian].
4. Derzhavna sluzhba financovogo monitoringu. Ofitsiyni sait. [State Financial Monitoring Service of Ukraine. Official website]. (n.d.0. Retrieved from: <https://fiu.gov.ua/> [in Ukrainian].
5. Bazarnyi, O. (2019). Antykryzovye unravlinnia v bankivski sferi [Anti-crisis management in the banking sector]. Kyiv: Tsentr ekonomichnykh doslidzhen [in Ukrainian].
6. Bazelskyi komitet z bankivskoho nahliadu. Bazel III: mizhnarodna rehuliatorna struktura dlia zmitsnennia stiiikosti bankiv ta bankivskykh system [Basel Committee on Banking Supervision. Basel III: an international regulatory framework for strengthening the resilience of banks and banking systems]. (2010). [in Ukrainian].
7. Bondar, S. (2018). Rol derzhavy v zabezpechenni finansovoi bezpeky bankiv [The role of the state in ensuring the financial security of banks]. Donetsk: Ekonomichna dumka [in Ukrainian].
8. Doklad Natsionalnoho banku Ukrainy [Report of the National Bank of Ukraine]. (2021). Digitalization in Banking Sector [in Ukrainian].
9. Zhykhor, O. & Baranovsky, O. (Eds.). (2015). Ekonomichna bezpeka: pidruchnyk z hryfom MONU [Economic security: a textbook with the seal of the Ministry of Education and Science]. K. : UBS NBU [in Ukrainian].
10. Ivanenko, V. (2017). Finansovyi monitorinh bankiv [Financial monitoring of banks]. Lviv: Lvivskiyi natsionalnyi universitet imeni Ivana Franka. [in Ukrainian].
11. Kovalenko, O. (2020). Tsyfrovii tekhnolohii u finansovii bezpetsi bankiv [Digital technologies in the financial security of banks]. Kyiv: Ekonomika i bezpeka. [in Ukrainian].
12. Natsionalnyi bank Ukrainy. Zvit pro finansovu stabilnist [National Bank of Ukraine. Financial Stability Repor]. (2023). Kyiv. [in Ukrainian].

13. Natsionalnyi bank Ukrainy (NBU). Rehuliatyvni bumohy do bankiv [National Bank of Ukraine (NBU). Regulatory requirements for banks]. (2021). Kyiv: NBU. [in Ukrainian].

14. Natsionalna komisiia z tsinnykh paperiv ta fondovoho rynku. Ofitsiinyi sait [National Securities and Stock Market Commission. Official website]. (n.d.). <https://www.nssmc.gov.ua/activity/nahliad-za-rynkom/finansovyi-monitorynh/> [in Ukrainian].

15. Zhykhor, O. (Eds.). (2014). Finansova bezpeka subektiv hospodariuvannia: pidruchnyk z hryfom MONU [Financial security of economic entities: a textbook with the seal of the Ministry of Education and Science]. K.: UBS NBU [in Ukrainian].

16. FATF. International Standards on Combating Money Laundering and the Financing of Terrorism (2020). Paris. [in English].

*Отримано 18.02.2025*