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EFFECTIVENESS OF THE REGULATORY ENFORCEMENT FOR AML IN UKRAINE: IS IT ALL QUIET ON THE FINANCIAL FRONT?

ABSTRACT

The relevance of studying the effectiveness of the existing financial monitoring system, particularly the adequacy of its regulatory framework, is driven by the intensification of processes related to the legalization of criminal proceeds involving financial institutions. This includes the entrenchment of shadow schemes in payment transactions, expansion of money laundering channels, and terrorism financing. Regulatory gaps have also emerged in overseeing the cryptocurrency market and digital financial services. This study aims to systematize the legal and regulatory framework and evaluate the effectiveness of the financial monitoring system, outlining prospects for further research. The research methodology involves balanced summarization, specification, systematization, generalization, and statistical analysis. Macroeconomic prerequisites for enhancing financial monitoring include socio-economic, political, and moral-ethical factors. The study notes that the effectiveness of anti-money laundering and counter-terrorist financing efforts is not always clear-cut, such as the unclear relationship between the intensity of measures and their effectiveness in preventing regulatory violations and the lack of accurate information about potential offences before disclosure. An objective understanding of financial monitoring effectiveness can be achieved through integral assessments. A methodology for calculating an integral indicator of effectiveness is proposed, which identifies weaknesses in the existing system. The need for new measures to strengthen the coordination of the financial monitoring system, especially under martial law, is emphasized. Based on the research results, recommendations for improving the effectiveness of the financial monitoring mechanism are formulated, including the introduction of artificial intelligence technologies for identifying financial transactions; the use of machine learning technologies; enhancement of monitoring in the cryptocurrency market; strengthening the oversight of transactions related to international terrorism; and developing an effective mechanism to combat financial crimes. These proposals may be useful for financial monitoring and economic security agencies in Ukraine.

Keywords: financial monitoring, AML/CFT, regulatory enforcement, financial security, financial system, risk, financial transactions

JEL Classification: G28, E42, E51

INTRODUCTION

The financial monitoring system is under close scrutiny by both international and national regulators. This is particularly evident in recent years due to the surge of escalating geopolitical shocks around the world. Therefore, the issue of establishing the level of effectiveness of the financial monitoring system is becoming more pressing, especially in the financial services market, which is most vulnerable to the risk connected with anti-money laundering, financing of terrorism, and the proliferation of weapons of mass destruction (AML/CFT). According to the "Ranking Money Laundering and Terrorist Financing Risks Around the World", in 2023, Haiti had the highest AML risk with a score of 8.25, while Iceland had the lowest with a score of 2.87. Ukraine ranks 78th out of 152 countries studied, with a score of 5.08 (Basel Institute on Governance, 2023).

Throughout 2023, the State Financial Monitoring Service of Ukraine (SFMSU) sent 1,122 materials to law enforcement agencies (including 608 generalized materials and 514

additional generalized materials). These materials reported financial transactions potentially linked to money laundering and criminal offences totalling UAH 102.1 billion, including UAH 89 billion related to money laundering, UAH 12.4 billion associated with criminal offences, and UAH 0.7 billion related to terrorism financing (State Financial Monitoring Service of Ukraine, 2024). Among the participants in the financial services market, banks were the most active in submitting information on suspicious financial transactions to the financial monitoring service. In 2023, they submitted 1,423,311 reports, accounting for 99.6% of the total reports provided by financial services market participants. This is primarily because banks have been under the close supervision of the National Bank of Ukraine since the implementation of the financial monitoring system in Ukraine. In just the first half of 2024, the National Bank of Ukraine imposed sanctions for financial monitoring violations on more than a dozen banks, including state-owned (National Bank of Ukraine, 2024). Non-bank financial institutions are no exception, as they are also currently under the supervision of the National Bank of Ukraine and have faced three times more sanctions than banks during the same period. However, the issue of assessing the effectiveness of the current financial monitoring system remains on the agenda.

LITERATURE REVIEW

In considering the aforementioned issue, it is important to note that the scientific community is actively studying approaches to the assessment and effectiveness of the financial monitoring system, particularly the legitimacy of financial intelligence units in establishing strict standards for determining which financial transactions should be monitored.

In the study by M. Brewczyńska (2021), the pivotal role of financial intelligence units in the AML/CFT processes is emphasized. However, despite their long-standing presence in this field, neither their nature nor their position within the legal systems of Europe have been harmonized across the European Union. This leads not only to a number of practical difficulties, especially in the realm of international cooperation but also to disputes in the application of the data protection legal framework. Therefore, it is deemed appropriate to conduct an empirical study that would allow the identification of key positions for harmonizing the functioning of financial intelligence units within national legal systems. A similar view is held by K. McNaughton (2023), who conducted an analysis of national models of financial intelligence units in ten selected Western (Canada, Denmark, the Netherlands, Luxembourg, USA) and Eastern (post-Soviet) European countries (Estonia, Latvia, Lithuania, Poland, Ukraine). The author concluded that despite several decades of legislative efforts towards harmonizing financial intelligence units worldwide, they are not uniform.

Ogbeide et al. (2023) highlighted expert judgments regarding AML risk assessment are not always reliable. Therefore, factors affecting the quality of risk assessment, such as excessive confidence in the expert, should be considered in risk assessment methodologies to address their actual presence. T. Daugaard et al. (2024) demonstrated in their research that banks could reduce the resources required for anti-money laundering compliance by utilizing blockchain-based transaction infrastructure. Digital storage of information, verified through identifiers using blockchain, enables task automation and reduces excessive verification during customer onboarding in the "know your customer" (KYC) process. The transparency of blockchain also enhances counterparty identification, the determination of the source of funds, and the creation of alerts during transaction monitoring. This reduces the time and labour costs associated with compliance in the field of anti-money laundering and counter-terrorism financing. Ainul Huda Jamil et al. (2022) conducted an empirical analysis of the impact of regulatory requirements and factors determining customer risk on expert decisions regarding the categorization of financial transactions in relation to money laundering risk. The study confirmed a significant impact of customer risk factors and regulatory requirements on AML risk assessment. Competence of specialists was taken into account as a measure of control for the reliability of the assessments. Subsequent testing by the researchers showed that the interaction and impact of both factors contribute to the reliability of AML risk assessment. Additionally, empirical data indicated that adherence to regulatory requirements influenced the judgments of employees regarding AML risk assessment and the reporting of suspicious transactions.

The scientific community also addresses the issue of training specialists in the field of financial monitoring. In the study by A.I. Canhoto (2021), it is emphasized that governments worldwide rely on the effectiveness of financial intelligence units in detecting and anticipating money laundering-related situations. Monitoring financial transactions associated with money laundering helps reduce crime rates and ensures sustainable economic development, aligning with Goal 16 of the U.N. Sustainable Development Goals. The author argues that the lack of high-quality large training algorithms for money laundering methods results in limited capabilities for utilizing supervisory machine learning. Conversely, reinforced machine learning, such as "unsupervised learning", may be employed in modelling unusual financial behaviour rather than in cases of actual money laundering.

Regarding the methodological foundation for assessing the effectiveness of financial monitoring, the study by A. Bukhtiarova et al. (2020) is noteworthy: the authors proposed a methodology for evaluating the effectiveness of financial monitoring systems in any country, which serves as a basis for enhancing anti-money laundering systems within the banking sector.

The critical analysis of scientific perspectives on the raised issues leads to the conclusion that the financial monitoring system, both at the international and national levels, remains a top priority. This is due to the fact that geopolitical imbalances, military events, unresolved issues related to corruption, poverty levels, taxation problems, and the tightening of regulatory requirements for identifying suspicious financial transactions, among others, contribute to the emergence of new schemes related to money laundering and terrorism financing.

AIMS AND OBJECTIVES

The aim of the study is to systematize the legal and regulatory framework and evaluate the effectiveness of the financial monitoring system in the financial services market, with a subsequent outline of prospects for its development. Thus, the research objectives consist of an investigation of the regulatory framework for financial monitoring in Ukraine, studying the existing financial monitoring system, macroeconomic analysis and effectiveness estimation of AML/CFT in Ukraine, and development of policy and research recommendations.

METHODS

The research employed various methodological approaches and tools to study the potential for ensuring the efficiency of the financial monitoring system in Ukraine, particularly in the financial services market. This included reviewing current AML/CFT data and assessing the regulatory environment. Additionally, economic-mathematical modelling tools, statistical analysis methods, and expert opinions were utilized. This comprehensive approach was used to closely examine the macroeconomic conditions underpinning the AML/CFT phenomenon and to identify possible ways to enhance the efficiency of the financial monitoring system. The paper also employs a systematic approach and a descriptive analysis method to establish controversial positions regarding the further transformation of the financial monitoring system in Ukraine. The study utilized methods of specification, systematization, and generalization to identify the main regulations governing the financial monitoring system in the financial market.

Any activity aimed at countering criminal acts, including those in the financial sector, is difficult to quantify in terms of its effectiveness. This difficulty arises from, firstly, the non-obvious relationships between the intensity of crime prevention measures and the effectiveness of curbing violations of established laws, and secondly, the lack of reliably accurate information about the level of potential and committed crimes until they are revealed. The AML/CFT is no exception to these patterns. Therefore, the most objective representation of the level of effectiveness of financial monitoring in a country can be achieved by using integral assessments, that is, by ranking and comparing quantitative data that characterize various aspects of the effectiveness of the measures (Figure 1).

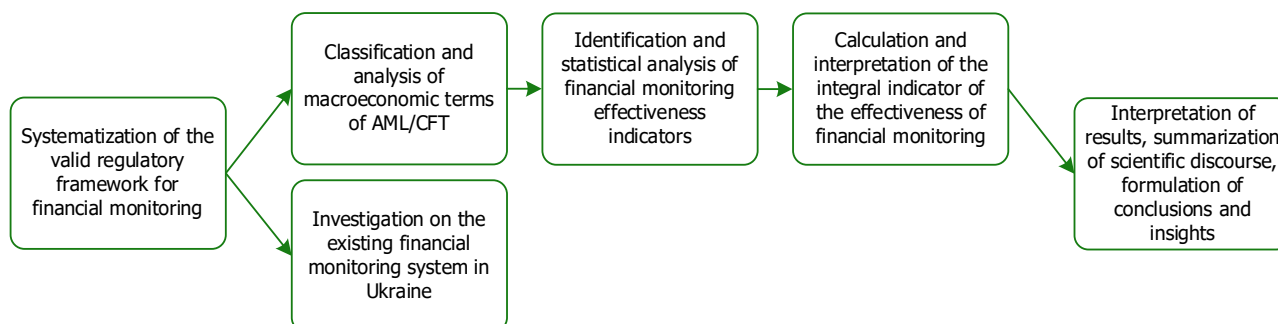


Figure 1. Design of the study on the effectiveness of the regulatory enforcement for AML/CFT.

The algorithm for constructing an integral indicator of the effectiveness of financial monitoring in the financial services market is presented in Figure 2.

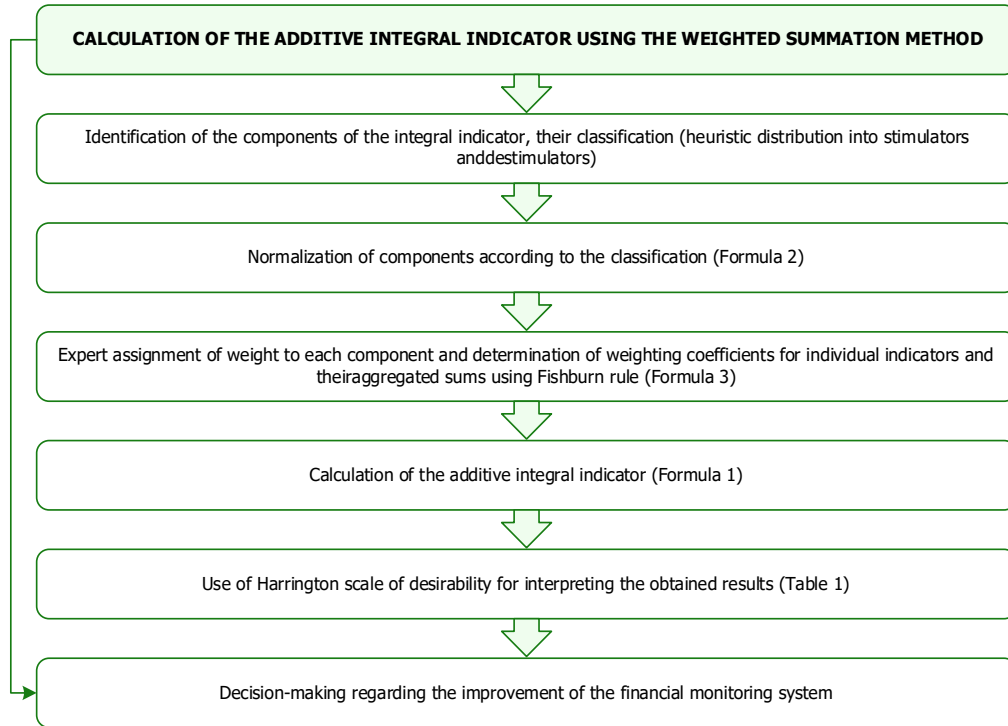


Figure 2. Step-by-step sequence of calculating the additive integral indicator of the effectiveness of financial monitoring by the method of weighted summation.

The construction of an integral indicator is essentially a case of linear modelling, where the components of the evaluated variable are represented by statistical observations, and the weights are determined by expert judgment. In general terms, the calculation of the additive integral indicator using the weighted summation method can be presented as follows:

$$I = \sum_{i=1}^n a_i w_i, \sum a_i = 1, 0 \leq a_i, w_i \leq 1, \quad (1)$$

where: a_i – normalized i -th indicator of financial monitoring effectiveness; w_i – weight coefficient determining the contribution level of the i -th indicator; n – total number of indicators.

A necessary condition for the adequacy of the integral indicator assessment is the selection of unidirectional components and the consideration of this directionality during normalization. Thus, all components (factors) based on their influence vector on the resulting index are divided into stimulators (indicating a positive dynamic of the integral indicator) and de-stimulators (causing negative changes in the index size). Considering the specific impact directions of each factor, the next step is the normalization of the initial data, where stimulators are normalized by their maximum values and de-stimulators by their minimum values:

$$a_i = \begin{cases} x_i / x_{max} \\ x_{min} / x_i \end{cases}, \quad (2)$$

where: x_i – the actual value of the i -th financial monitoring effectiveness indicator; x_{max} , x_{min} – maximum and minimum values of the i -th indicator within the analyzed range.

The next stage in constructing the integral indicator involves the expert assignment of weights to each factor and the determination of weight coefficients for individual indicators and their aggregated sums based on the application of the Fishburn rule, which stipulates that a series of factors ordered by decreasing significance have individual weight coefficients calculated as follows:

$$r_i = \frac{2 \times (N - i + 1)}{(N + 1) \times N}, \quad (3)$$

where: r_i – weight coefficient of the i -th indicator in the set; i – rank (order) of the indicator; N – total number of indicators in the set.

E. Harrington's desirability scale will be used to interpret the results (Table 1).

Table 1. Harrington desirability scale. (Source: Bukhtiarova A. et al., 2020)

Desirability	Values
Very good	1.00–0.80
Good	0.80–0.63
Satisfactory	0.63–0.37
Bad	0.37–0.20
Very bad	0.20–0.00

The research analyzed various legal sources that enabled the establishment of a methodological foundation for evaluating the effectiveness of financial monitoring. These sources were systematized into two aspects: international and national levels, with the main ones presented in Table 2.

Table 2. Legal framework of financial monitoring on the financial market in Ukraine.

No.	Regulatory acts
International level	
1.	FATF Recommendations. International Standards on Combating Money Laundering and the Financing of Terrorism & Proliferation (2012, February).
2.	FATF Methodology. "FATF Methodology for assessing compliance with the FATF Recommendations and the effectiveness of AML/CFT systems" (2013, February).
3.	FATF Guidance. FATF Guidance on Counter Proliferation Financing – The Implementation of Financial Provisions of United Nations Security Council Resolutions to Counter the Proliferation of Weapons of Mass Destruction (2018).
4.	FATF Guidance. "On Risk-Based Supervision" (2021, March).
5.	FATF Guidance. "Updated Guidance for a Risk-Based Approach to Virtual Assets and Virtual Asset Service Providers" (2021, October)
6.	Basel Committee on Banking Supervision Guidance. "Sound management of risks related to money laundering and financing of terrorism" (2017, June)
7.	Directive (EU) of the European Parliament and of the Council. No. 2015/849. "On the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, amending Regulation (EU) No 648/2012 of the European Parliament and of the Council, and repealing Directive 2005/60/EC of the European Parliament and of the Council and Commission Directive 2006/70/EC" (2015, May)
8.	Directive (EU) of the European Parliament and of the Council. No. 2018/843. "Amending Directive (EU) 2015/849 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, and amending Directives 2009/138/EC and 2013/36/EU" (2018, May).
National level	
1.	Code of Ukraine on Administrative Offenses. No. 8073-X (1984, December).
2.	Criminal Code of Ukraine. No. 2341-III (2001, April).
3.	Law of Ukraine No. 2121-III. "On banks and banking activity" (2000, December).
4.	Law of Ukraine No. 679-XIV. "On the National Bank of Ukraine" (1999, May)
4.	Law of Ukraine No. 361-IX. "On Prevention and Counteraction to Legalization (Laundering) of Criminal Proceeds, Terrorist Financing and Financing of Proliferation of Weapons of Mass Destruction" (2019, December).
5.	Law of Ukraine No. 1591-IX. "On payment services" (2020, July).
6.	Regulation of the National Bank of Ukraine. No. 106. "On the application of measures of influence by the National Bank of Ukraine to institutions for violating the legislation on financial monitoring" (2020, July)
7.	Regulation of the National Bank of Ukraine. No. 65. "On implementation of financial monitoring by banks". (2020, May).
8.	Regulation of the National Bank of Ukraine. No.107. "On implementation of financial monitoring by institutions". (2020, June).

The study also employs a variety of sources, including scientific papers, books, reports, and other publications related to the issue, informational portals of the State Statistics Service of Ukraine, the National Bank of Ukraine, the State Financial Monitoring Service of Ukraine, Transparency International, Trading Economics, FATF, Financial Abuse Prevention.

RESULTS

The financial monitoring system is an integral component of ensuring national economic security. According to the Law of Ukraine No. 361-IX "On Prevention and Counteraction to Legalization (Laundering) of Criminal Proceeds, Terrorist Financing and Financing of Proliferation of Weapons of Mass Destruction" (December 2019), financial monitoring is defined as a set of measures undertaken by financial monitoring entities in the field of prevention and counteraction, including state financial monitoring and primary financial monitoring. The system of authorized bodies and organizations in the field of financial monitoring in Ukraine consists of three levels of authorities that interact continuously. The first level is the State Financial Monitoring Service, which acts as the authorized body in this field; the second level comprises supervisory authorities responsible for oversight functions related to financial monitoring agents; the third level includes financial monitoring agents – organizations that conduct transactions involving money or other assets, as well as private entrepreneurs. All three levels of the financial monitoring system interact with law enforcement agencies, organizations that provide information, and financial intelligence entities (Sereda E. et al., 2024).

The financial monitoring system for the financial services market also includes three levels of interaction between state and financial monitoring entities (Figure 3).

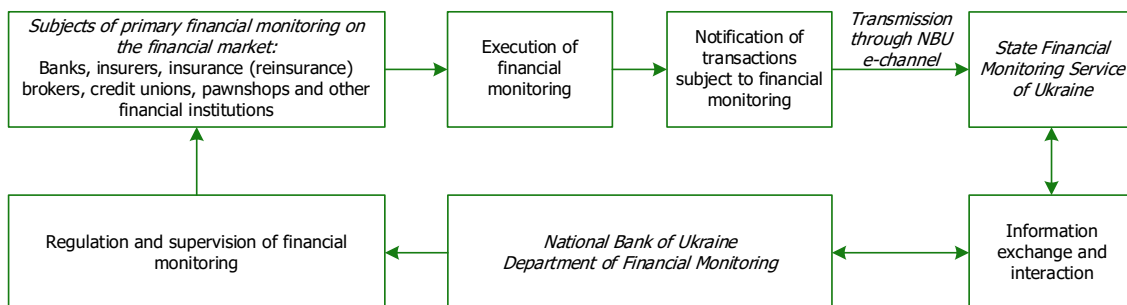


Figure 3. System of financial monitoring in the financial services market of Ukraine. (Source: Kovalenko et al., 2023).

The effectiveness of financial monitoring depends not only on the established legal framework and the strengthening of regulatory requirements for tracking financial transactions related to money laundering but also on the macroeconomic and political conditions of the country's development. Since the full-scale invasion of Russia into Ukraine, amendments have been made to certain strategic documents with the aim of enhancing national security, specifically focusing on improving the effectiveness of financial monitoring, including:

1. Decree of the President of Ukraine No. 347 "Strategy of economic security of Ukraine for the period until 2025" (2021, August) – ensuring the national financial system's protection against the legalization (laundering) of criminally obtained proceeds, terrorism financing, and the financing of weapons of mass destruction proliferation.
2. Decree of the President of Ukraine No. 56 "Strategy for ensuring state security" (2022, February) – developing international cooperation in the security sphere, primarily regarding counter-terrorism, its financing, cybercrime, non-proliferation of weapons of mass destruction and their delivery systems, combating the legalization (laundering) of criminal proceeds, and transnational organized crime.
3. Order of Cabinet of Ministers of Ukraine No. 1207-r "Action Plan Aimed at Preventing and/or Mitigating the Negative Consequences of Risks Identified by the Third National Risk Assessment in the Sphere of Preventing and Counteracting the Legalization (Laundering) of Criminal Proceeds, Terrorism Financing, and Financing of Weapons of Mass Destruction Proliferation, for the Period up to 2026" (December 2023) – this order allows for the assessment of the effectiveness and efficacy of the measures proposed for improving the financial monitoring system, particularly in terms of enhancing legislation in the fields of preventing and counteracting the legalization (laundering) of criminal proceeds, terrorism financing, and the proliferation of weapons of mass destruction, and its adaptation to international standards.

4. Strategy of National Bank of Ukraine “Financial Fortress of Ukraine” (May 2023) – Development and implementation of a comprehensive approach to analyzing inter-sectoral connections and risks within the financial sector as a whole; updating approaches to regulating the activities of banks and non-bank institutions in implementing sanctions; development of supervisory tools for risk analysis and assessment; creation of an integrated supervisory platform; implementation of proactive and risk-oriented supervision in the payment market; enhancement of AML supervision based on a risk-oriented approach (including for payment service providers); introduction of requirements for digitalization (non-cash transactions, process automation, including in the areas of AML and sanctions legislation, reporting, electronic document management); development of new reporting standards for non-bank financial service market participants for supervisory purposes; implementation of a mechanism for banks to disclose information about clients’ connections with countries conducting armed aggression against Ukraine, for further analysis and possible response; expansion of mechanisms for monitoring the level of financial literacy among the population; enhancement and development of remote identification for financial services to strengthen the security of remote identification and verification models.

In the previous study (Kovalenko V., Sheludko S., 2022) the authors investigated the phenomenon of the shadow economy and the macroeconomic conditions leading to its emergence. Noting the nature of these conditions, it is posited that they are precursors to measures aimed at enhancing the effectiveness of financial monitoring in the financial sector. These conditions include socio-economic, political, and moral-ethical factors. The authors concluded that combating the shadow economy is unattainable until systemic factors impeding the processes of de-shadowing in Ukraine are overcome, specifically: inadequate protection of property rights; deficiencies in the executive system of the state, leading to societal and investor distrust; exceptionally high levels of corruption within the country; and the existence of territories beyond government control due to hybrid aggression and Russia’s full-scale invasion, which results in the emergence of new money laundering schemes and smuggling activities (Kovalenko V., Sheludko S., 2022).

It should be noted that following the introduction of martial law, official data on the shadow economy index in Ukraine is unavailable, and therefore, this indicator was not emphasized in our analysis.

Socio-economic preconditions are that the transition of the population to the shadow economy is driven by low-income levels and social injustice, which leads individuals to seek illegal sources of income (Figures 4-5).

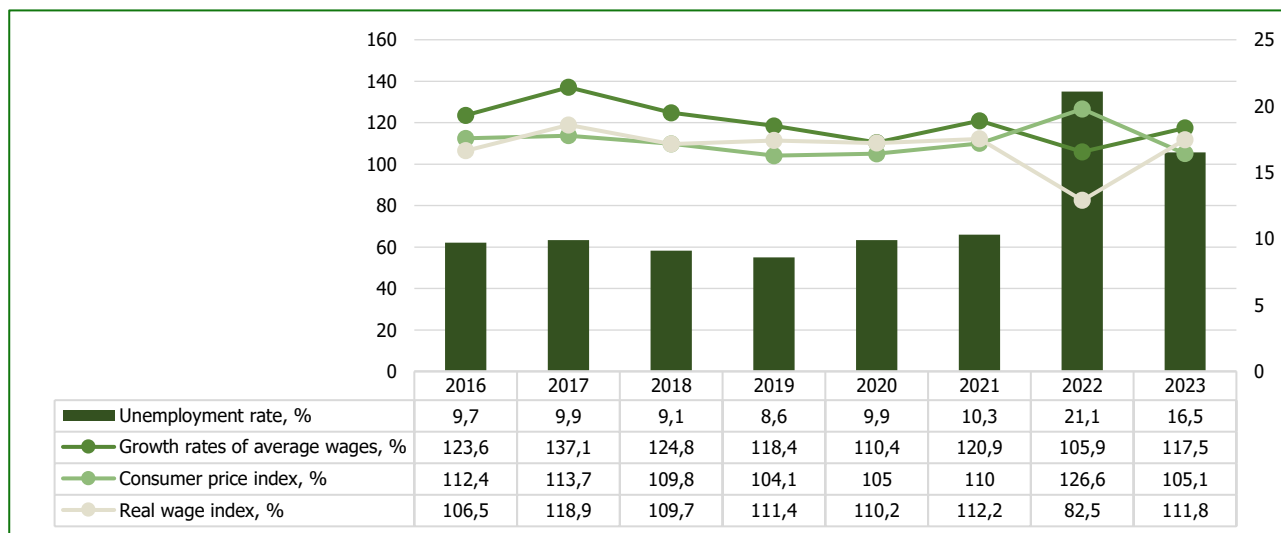


Figure 4. Rates of change in wages and the inflation index in Ukraine in 2016-2023, %. (Source: calculated by the authors based on (State Statistics Service of Ukraine, 2024))

As indicated by Figures 4-5, the peak period for wages, the consumer price index, and the unemployment rate in Ukraine was the year 2022, which is associated with a full-scale military invasion.

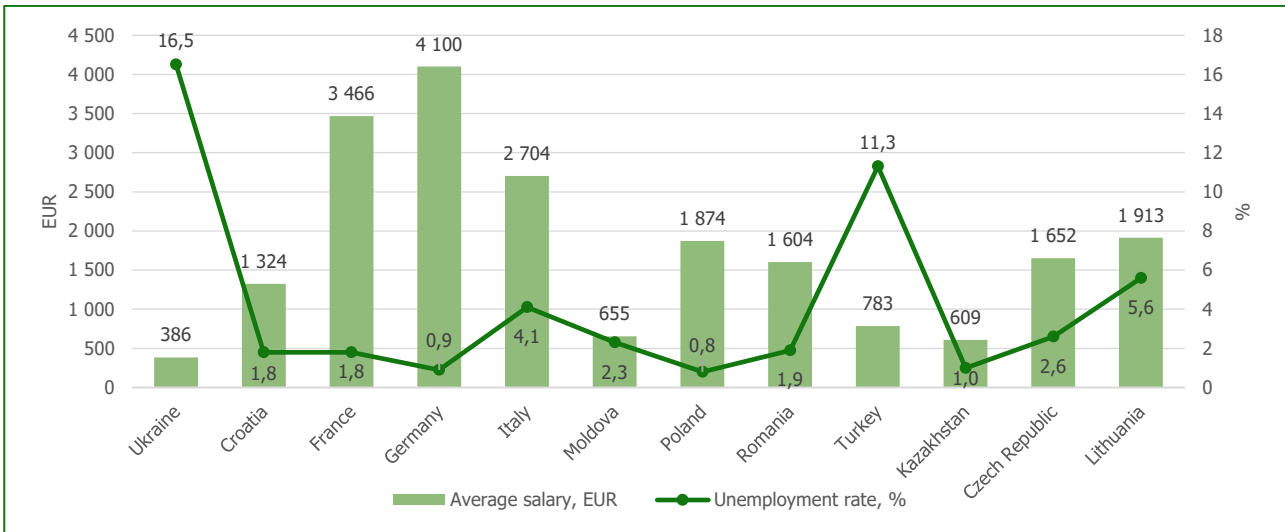


Figure 5. Wages and unemployment rate in certain countries of the world in 2023. (Source: calculated by the authors based on Trading Economics, 2024)

This invasion led to a series of macroeconomic, political, and financial-economic shocks in the country. Consequently, the analyzed indicators for 2022 are the highest. When comparing the levels of wages and unemployment in Ukraine with those of other countries, it is evident that these indicators differ significantly, with Ukraine experiencing the lowest wages and the highest unemployment rate.

Political preconditions. The instability prompts income concealment. Corruption has become a driving force behind the shadow economy and the emergence of new money laundering schemes. Figure 6 presents Ukraine's position along with some neighbouring countries in the Corruption Perceptions Index for 2019-2023, published annually by Transparency International.

According to this index, Ukraine gradually improved its corruption perception ranking between 2019 and 2023, despite the ongoing military conflict. In 2023, Ukraine was ranked 104th out of 180 countries, with a score of 36 out of 100. The index indicates that Ukraine's corruption perception is relatively high compared to Eastern European countries and is roughly on par with Moldova. However, Moldova has significantly improved its position over the past two years. This suggests that the level of government measures to combat corruption remains insufficient and reflects a pessimistic public sentiment regarding the prospects for overcoming corruption.

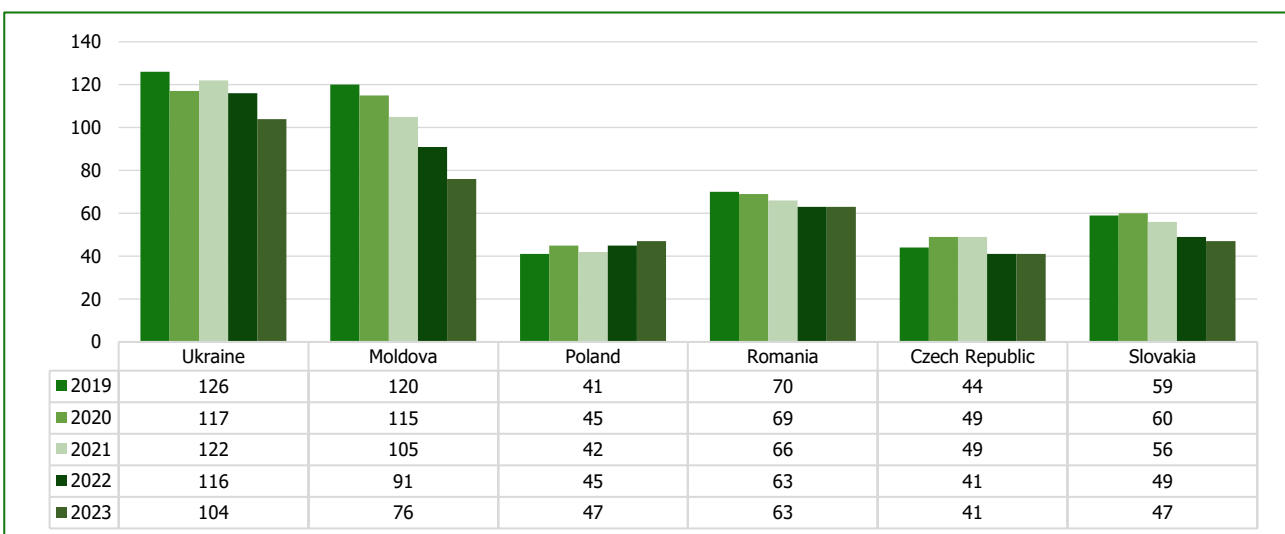


Figure 6. Ranks of Ukraine and neighbouring countries in the Corruption Perception Index in 2019-2023. (Source: compiled by the authors based on Transparency International, 2024)

Moral and ethical preconditions. In countries with developed democratic systems, society condemns illegal activities. To enhance the effectiveness of law enforcement efforts against corruption, Ukraine officially published the Register of

Corrupt Officials in 2019. This register accumulates information about individuals involved in or connected with corrupt schemes. In 2023, the register included 3,070 individuals: 1,928 for criminal offences, 861 for administrative offences, 281 for disciplinary offences, and 1 without a specified category. For the first half of 2024, 1,118 individuals were added to the register: 573 for criminal offences, 293 for administrative offences, 318 for disciplinary offences, and 9 without a specified category (National Agency for the Prevention of Corruption, 2024).

It can be concluded that the examined preconditions for the shadow economy proportionally influence the emergence of new money laundering and terrorism financing schemes.

The effectiveness of the current financial monitoring system can be assessed based on the number of reports submitted by primary financial monitoring entities regarding financial transactions identified as suspicious or subject to mandatory financial monitoring. Since the implementation of the Unified Information System for Preventing and Combating the Legalization (Laundering) of Criminal Proceeds, Terrorism Financing, and the Proliferation of Weapons of Mass Destruction (SFMSU), 57,852,061 financial transaction reports have been processed, with 1,432,684 reports in 2023 alone. Of these, 1,429,594 reports were registered (Figure 7).

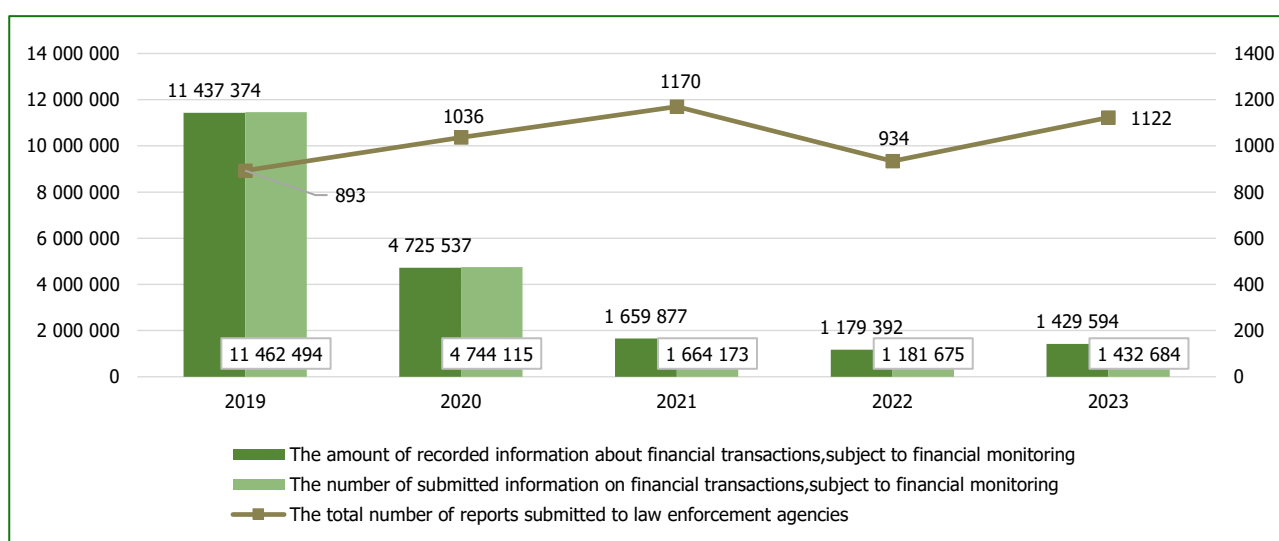


Figure 7. Dynamics of informing about financial transactions in 2019-2023. (Source: compiled by the authors based on State Financial Monitoring Service of Ukraine, 2024)

As evidenced by the data in Figure 7, the volume of reports received from primary financial monitoring entities has gradually decreased. This trend is related to changes in the approach to detecting financial transactions indicative of financial monitoring, as outlined in the updated Law of Ukraine No. 361-IX "On Prevention and Counteraction to Legalization (Laundering) of Criminal Proceeds, Terrorist Financing, and Financing of Proliferation of Weapons of Mass Destruction" (2019, December).

In the first quarter of 2024, the State Financial Monitoring Service of Ukraine registered 377,503 reports of financial transactions subject to financial monitoring, including 61,263 reports of suspicious financial transactions (activities); 315,751 reports of threshold transactions; 105 reports of both threshold and suspicious transactions (activities); and 384 reports in response to requests for tracking financial transactions (Debit-Credit, 2024). Currently, the primary focus of SFMSU activities is to detect financial transactions and individuals associated with terrorism/separatism financing, military aggression by the Russian Federation against Ukraine, violent changes or overthrow of the constitutional order or seizure of state power, and changes to territorial boundaries or state borders (Debit-Credit, 2024).

Over the years of its operation, the financial monitoring system in Ukraine has identified the banking system as the principal state intermediary in anti-money laundering efforts. Banks account for the largest share of reports on financial transactions subject to monitoring (Figure 8).

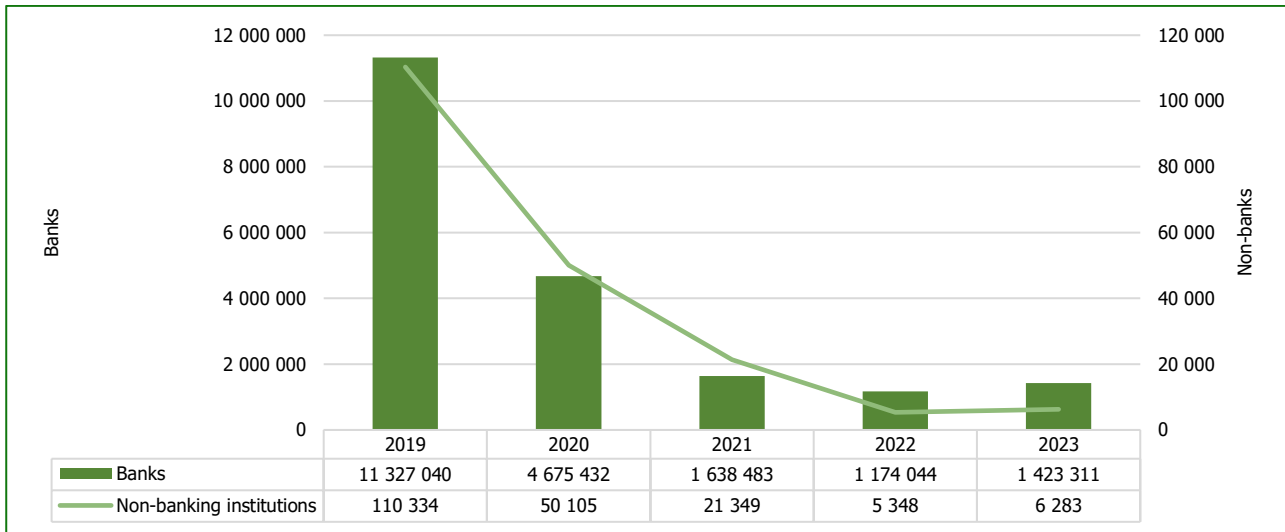


Figure 8. Information on financial transactions by banks and non-banking institutions in 2019–2023. (Source: compiled by the authors based on (State Financial Monitoring Service of Ukraine, 2024; Shyriaieva L., Zahoruiko A., 2023))

Among non-banking institutions, the most active in submitting reports are participants in the capital markets and organized commodity markets. The share of such reports in the total volume of recorded financial transaction reports received from the non-banking sector during 2023 was 44.62 % (Table 3).

Table 3. The structure of notifications about financial transactions received from the non-banking sector in 2021-2023. (Source: compiled by the authors based on State Financial Monitoring Service of Ukraine, 2024; Shyriaieva L., Zahoruiko A., 2023)

Type of institution	2021		2022		2023	
	Number of messages	Share, %	Number of messages	Share, %	Number of messages	Share, %
Participants of the capital and organized markets commodity markets	18 202	85.08	2 874	53.74	2 788	44.62
Financial companies	843	3.94	1 492	27.90	1 535	14.56
Business entities that conduct gambling, including casinos, electronic (virtual) casino	–	–	–	–	1075	17.20
Insurance institutions	1 385	6.47	339	6.34	388	6.21
Business entities that conduct lotteries	612	2.86	266	4.97	338	5.41
Notaries	6	0.03	–	–	–	–
Other subjects	346	1.62	377	7.05	125	2.00

To determine a generalized indicator of financial monitoring efficiency, an algorithm for calculating the additive integral indicator of financial monitoring efficiency using the weighted summation method was employed, as presented in Figure 1. The components selected for constructing the integral indicator, their impact on the efficiency of financial monitoring, and descriptive statistics are provided in Table 4.

Table 4. Performance indicators of financial monitoring in Ukraine in 2014-2023. (Source: calculated by the authors based on National Bank of Ukraine, 2024; State Financial Monitoring Service of Ukraine, 2024)

Indicators	Aggregate Feasibility Indicator		Aggregate Effectiveness Indicator				Aggregate Cost-Efficiency Indicator	
	Share of probable legalization (% of nominal GDP)	Share of reports on suspicious, and threshold and suspicious transactions (% of the total number of reports)	Dynamics of bank workload (number of reports per bank, y-o-y)	Share of reports accepted for active work by the SFMSU (% of the total number of reports)	Share of initiated criminal proceedings (% of prepared analytical materials)	Share of criminal cases resulting in a court verdict (% of criminal proceedings)	Share of allocations for the maintenance of the SFMSU (% of the state budget expenditure)	Gap between the average monthly expenses on the SFMSU personnel and the average salary? (times)
2014	16.9	38.8	172.7	15.5	38.6	52.2	0.006	2.3
2015	3.4	10.8	481.9	6.4	18.4	55.6	0.005	2.2
2016	2.3	6.1	154.1	4.5	12.9	61.8	0.004	1.9
2017	2.4	4.6	142.4	5.0	9.3	57.6	0.017	3.0
2018	11.3	3.1	131.4	5.3	12.9	17.5	0.007	2.7
2019	2.5	3.0	114.2	4.6	12.0	72.9	0.008	2.9
2020	2.0	3.4	12.8	25.9	7.6	35.4	0.009	3.6
2021	1.9	4.6	121.6	29.3	12.6	21.8	0.010	3.0
2022	1.4	4.4	74.0	3.2	7.2	13.4	0.005	3.8
2023	1.6	10.9	131.9	6.9	12.3	25.4	0.004	2.7
Min	1.4	3.0	12.8	3.2	7.2	13.4	0.004	1.9
Max	16.9	38.8	481.9	29.3	38.6	72.9	0.017	3.8
Stimulator (S) / De-stimulator (D)	D	D	S	S	S	S	D	D

From the data in Table 4, it follows that the feasibility indicators (the share of probable legalization and the share of reports on suspicious, and threshold and suspicious transactions) and the cost-efficiency indicators (the share of allocations for the maintenance of the SFMSU and the gap between the average monthly expenses on SFMSU personnel and the average salary) are de-stimulators, indicating an overall decrease in the effectiveness of financial monitoring. At the same time, the effectiveness indicators (the dynamics of bank workload, the share of reports accepted for active work by the SFMSU, the share of initiated criminal proceedings, and the share of criminal cases resulting in a court verdict) are stimulators, and their growth generally indicates a positive trend in the effectiveness of financial monitoring.

Subsequently, it is necessary to normalize the obtained data using Formula 2. The results of the normalization are presented in Table 5.

Table 5. Normalized indicators of the effectiveness of financial monitoring in Ukraine in 2014-2023. (Source: calculated by the authors based on National Bank of Ukraine, 2024; State Financial Monitoring Service of Ukraine, 2024)

Indicators	Aggregate Feasibility Indicator		Aggregate Effectiveness Indicator				Aggregate Cost-Efficiency Indicator	
	Share of probable legalization (% of nominal GDP)	Share of reports on suspicious threshold and suspicious transactions (% of the total number of reports)	Dynamics of bank workload (number of reports per bank, y-o-y)	Share of reports accepted for active work by the SFMSU (% of the total number of reports)	Share of initiated criminal proceedings (% of prepared analytical materials)	Share of criminal cases resulting in a court verdict (% of criminal proceedings)	Share of allocations for the maintenance of the SFMSU (% of the state budget expenditure)	Gap between the average monthly expenses on the SFMSU personnel and the average salary (times)
2014	0.09	0.08	0.36	0.53	1.00	0.72	0.60	0.84
2015	0.43	0.28	1.00	0.22	0.48	0.76	0.74	0.87
2016	0.64	0.49	0.32	0.15	0.33	0.85	0.90	1.00
2017	0.59	0.65	0.30	0.17	0.24	0.79	0.21	0.63
2018	0.13	0.98	0.27	0.18	0.33	0.24	0.52	0.71
2019	0.58	1.00	0.24	0.16	0.31	1.00	0.44	0.66
2020	0.73	0.87	0.03	0.88	0.20	0.49	0.40	0.53
2021	0.76	0.65	0.25	1.00	0.33	0.30	0.36	0.63
2022	1.00	0.68	0.15	0.11	0.19	0.18	0.65	0.50
2023	0.93	0.28	0.27	0.23	0.32	0.35	1.00	0.70

Analyzing the results of the normalization presented in Table 5, it can be concluded that in 2017, 2018, and 2020, none of the indicators equalled one, which preliminarily indicates the lowest level of financial monitoring effectiveness during these periods.

The next step is the expert assignment of weights to each factor and the determination of weight coefficients for individual indicators and their aggregate sums using Formula 3 (Table 6).

Table 6. Weighting coefficients for indicators of the effectiveness of financial monitoring in Ukraine.

7	Rank	Weight coefficients	Aggregate Indicators	Rank	Weight coefficients
Share of probable legalization	1	0.67	Aggregate Feasibility Indicator	1	0.50
Share of reports on suspicious, and threshold and suspicious transactions	2	0.33			
Dynamics of bank workload	2	0.30	Aggregate Effectiveness Indicator	2	0.33
Share of reports accepted for active work by the SFMSU	1	0.40			
Share of initiated criminal proceedings	3	0.20			
Share of criminal cases resulting in a court verdict	4	0.10			
Share of allocations for the maintenance of the SFMSU	1	0.67	Aggregate Cost-Efficiency Indicator	3	0.17
Gap between the average monthly expenses on the SFMSU personnel and the average salary	2	0.33			

Using the weight coefficients provided in Table 6, the integral indicator of financial monitoring effectiveness in Ukraine can be calculated (Figure 9).

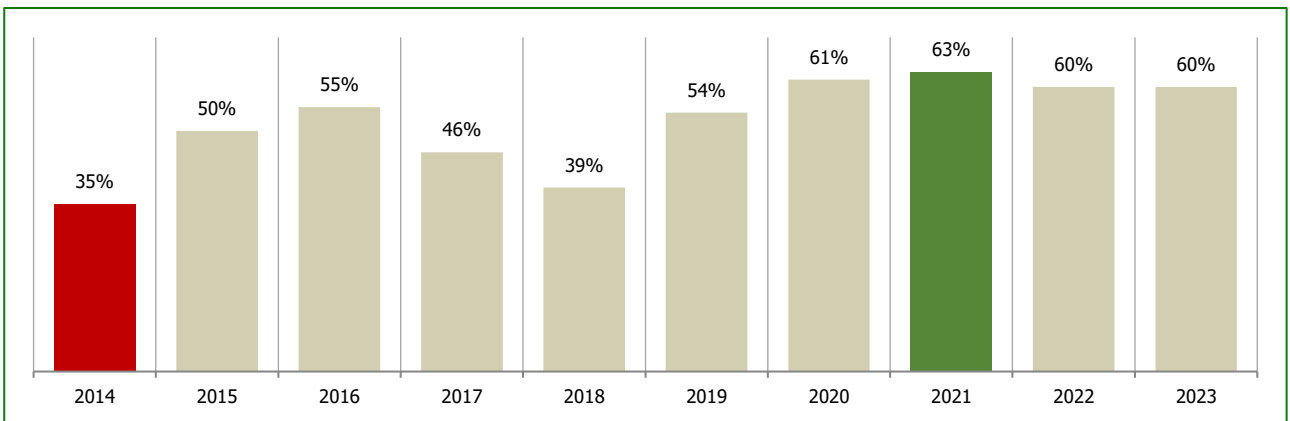


Figure 9. Integral indicator of the effectiveness of financial monitoring in Ukraine in 2014-2023.

For interpreting the results presented in Figure 9, the Harrington desirability scale was used (Table 1), according to which bad effectiveness is marked in red, satisfactory in orange, and good in green.

Thus, it should be noted that the financial monitoring system in Ukraine demonstrated its lowest effectiveness in 2014 and 2018. The unsatisfactory results of the first period are reasonably explained by the complex socio-political conditions that the Ukrainian economy faced amid Russia's hybrid aggression. The main quantitative role in the value of the integral indicator was played by feasibility factors (historically high levels of the share of potential legalization and the proportion of reports on suspicious transactions). At the same time, the conditions of 2018 are difficult to compare with the previous ones, and the effectiveness of financial monitoring was affected not only by significant amounts of potential legalization but also by the low efficiency of the judicial system.

As a consequence of this degradation, a number of improvements were adopted in the relevant legislation in 2019-2020, which allowed not only for a significant increase in the system's effectiveness in a short period of time (from 2018 to 2021,

almost double, reaching the best result of 63%) but also for maintaining a fairly high level of effectiveness in combating money laundering and terrorism financing under the challenging conditions of the full-scale invasion (in 2022 and 2023, effectiveness decreased by only 3% compared to the pre-war period).

DISCUSSION

The assessment of the financial monitoring system in Ukraine indicates a gradual increase in its effectiveness, which does not diminish during the state of war. However, there are currently contentious issues regarding the determination of approaches that influence the strengthening of this system. Our proposed methodological approach to evaluating the effectiveness of financial monitoring is mainly based on quantitative indicators concerning reports on financial transactions subject to financial monitoring and the referral of initiated cases regarding crime detection to law enforcement agencies. For instance, T. Daugaard et al. (2024) have shown that to minimize biased expert judgments regarding AML risk assessment, the storage of digital messages of verified identifiers via blockchain can automate tasks and reduce excessive scrutiny during KYC registration. The ongoing wave of innovation is capable of transforming the financial sector, which will have profound implications for AML, KYC, and the associated regulatory framework. Quantum computing, with its revolutionary ability to process large data sets at unprecedented speeds, ushers in a new era of hyper-personalization in banking services, which is expected to arrive by 2030. This revolutionary and transformative technology necessitates a reevaluation of AML and KYC protocols, as the advent of a hyper-personalized banking experience requires a flexible response from regulatory bodies to effectively address emerging risks (Daugaard T. et al., 2024).

Artificial intelligence systems play a crucial role in enhancing the efficiency of fraud detection, risk management, and compliance with AML and KYC regulations. Regulatory bodies must evolve to effectively adapt to these technological advancements. The growth of decentralized finance (DeFi) and cryptocurrencies complicates the regulatory environment, challenging traditional notions of money movement. The impact on existing anti-money laundering mechanisms based on blockchain becomes evident as such technology becomes an integral part of ensuring financial transparency and security. The immutable nature of blockchain records offers potential advantages in combating money laundering, providing a secure and transparent ledger for tracking financial transactions. However, the changing landscape requires continuous improvement of blockchain-based AML approaches to address challenges and ensure their effectiveness in modern banking (Malhotra D. et al., 2022).

In order to utilize artificial intelligence systems in the financial monitoring system, the issue of training specialists in this field becomes equally important. However, certain limitations that financial intelligence units may face should be considered. For instance, the cost of artificial intelligence and machine learning technologies should not be underestimated. Small intermediaries may lack sufficient budget for anti-money laundering efforts to acquire sophisticated AI solutions, while large organizations operating in multiple jurisdictions require standardized solutions that few providers of these technologies can offer (Grint R. et al., 2017). The introduction of new AI technology may also require additional investments such as upgrading outdated database systems to make them compatible with the new solution. Furthermore, there are indirect costs to consider, such as hiring personnel with the necessary competencies or training those (Merendino A. et al., 2018). The authors of this study support the view of A. Fernandez (2019) that the ability of machine learning to detect patterns in data, process various types of data, and operate autonomously enables financial intermediaries to identify money laundering schemes and serves as a cost-effective approach. Therefore, in calculating the cost of AI solutions, and hence the economic efficiency of this technology, numerous trade-offs, as well as direct and indirect costs, should be taken into account.

A problematic issue today remains the monitoring of the cryptocurrency market. Chainalysis, a leading company in blockchain analytics, published a report on money laundering in cryptocurrency for the first half of 2024. According to the report, since the beginning of 2024, about USD 7 billion of illegal funds have flowed through cryptocurrencies. Overall, the volume of such funds has reached nearly USD 100 billion throughout the observation period. The year 2022 saw the highest volume of illegal transactions, with a turnover reaching USD 30 billion. In 2023, due to the increased activity of regulators and law enforcement agencies, this figure decreased to USD 22 billion. Chainalysis highlights several key methods used by criminals for money laundering through cryptocurrencies: "Centralized Platforms" – using centralized exchanges for converting and moving funds; "Mixers" – services that help conceal the source of funds by mixing them with other users' funds; "Blockchain Bridges" – moving funds between different blockchains, making them harder to trace; "Online Casinos" (Financial Abuse Prevention, 2024). FATF published the report "Targeted Update on Implementation of the FATF Standards on Virtual Assets/VASPs, FATF" (June 2024) on jurisdictions' compliance with FATF Recommendation 15 and the application of AML/CFT measures to virtual assets (VA) and virtual asset service providers (VASP). FATF urged all jurisdictions to quickly implement FATF standards regarding this Recommendation. According to the conclusions made

in the report, FATF will continue to facilitate coverage and provide assistance to jurisdictions with less capacity, including materially significant VASP activities; promote the exchange of best practices, findings, and challenges, particularly regarding DeFi, stablecoins, unhosted wallets, and P2P; as well as monitor market trends in this area for significant events that may require further FATF work; engage with FATF member countries, the global network, technical assistance providers, and the private sector regarding progress and challenges.

In the context of Ukraine and the implementation of AML/CFT measures for virtual assets (VA) and virtual asset service providers (VASP), the proposals made by M. Utkina et al. (2023) are pertinent. These proposals identify mandatory user identification, the application of anti-money laundering legislative acts, and the regulation of issues related to the operation and functioning of exchange platforms at the legislative level as the most promising and effective aspects of virtual asset regulation. By anti-money laundering legislative acts, the authors refer to laws that are fully implemented into domestic legislation for AML/CFT purposes. These laws may include requirements for financial institutions and companies to collect and maintain information about customers and their transactions (Utkina, M. et al., 2023).

In the context of the military aggression by Russia, the issue of monitoring financial operations associated with international terrorism, particularly financial ones, becomes more relevant. According to a study conducted by the Institute for Economics & Peace in 2023, Burkina Faso (score 8.571) and Israel (score 8.143) were among the countries with a very high level of global terrorism index. Ukraine was assessed as a country with a low level of the global terrorism index, scoring 1.686 (Institute for Economics & Peace, 2024). Today, there are challenges arising from the ever-changing nature of financial terrorism and technological progress occurring in all spheres of society and the financial sector in particular. These challenges include the rapid development of technologies that enable criminals to encrypt and conceal their financial operations, the use of cryptocurrencies and online platforms for collecting and transferring funds, and the changing strategies of terrorist groups. By their nature, terrorist financing schemes have a distinct essence, maintaining their form and properties that do not differ from other financial operations. Therefore, existing countermeasures may become ineffective.

In this context, the perspective of M. Utkina (2023) merits attention. Utkina identified specific characteristics of financial transactions that can primarily serve to identify and counteract the financing of terrorism, including the use of illicit (illegal) funding sources, the collection and accumulation of financial resources, the use of financial channels for fund transfers, the legalization and concealment of the origin of funds, and the use of charitable organizations and non-governmental funds. The author emphasizes that the main objective of financial monitoring in countering the financing of terrorism is to ensure the resilience and stability of the financial system, which to a certain extent contributes to national security and international cooperation in the fight against and prevention of terrorism and separatism (Utkina M., 2023).

A contentious issue is the formulation of an effective mechanism to combat financial crimes, which is also influenced by the general crime and safety indices of the country. In the first half of 2024, Venezuela ranked first with the highest Crime Index of 80.9% and the lowest Safety Index of 19.1%. Andorra ranked last at 146th place with the lowest Crime Index of 14.1% and the highest Safety Index of 85.9%. Ukraine ranks 69th in this ranking with index values of 46.8% and 53.2%, respectively (NUMBEO, 2024). Considering the situation regarding the increase in financial crime in Ukraine, it is necessary to systematize the main elements of the mechanism to combat financial crimes and integrate them into the financial intelligence unit's model. According to M. Blikhar et al. (2022), the elements of the mechanism for combating financial crimes include institutional, legal, economic, financial, organizational, and informational elements. The economic element of the mechanism encompasses the improvement of the tax system, the creation of business-friendly conditions, and the establishment of motivational working conditions; the legal element involves strengthening property liability in the event of a violation, prohibiting the holding of administrative positions in case of violations; the administrative element includes monitoring shadow schemes, and a rational and continuous process of training employees of regulatory bodies (Blikhar M. et al., 2022).

Thus, despite the fact that the domestic financial monitoring system, as assessed by our calculated integral indicator, is deemed to be at a sufficient level of effectiveness, it faces various challenges that also present new opportunities for development. Outstanding issues include the establishment of procedures for monitoring cryptocurrency transactions. Cryptocurrencies possess unique characteristics, many of which are highly positive, such as the potential to enhance financial inclusion. However, their boundless nature and existence outside the formal financial system also make them an attractive option for criminals to conceal corrupt income and other crimes, evade taxes, or finance terrorism. Furthermore, future research should focus on the establishment and regulation of effective AML/CFT systems. There is a need to enhance the preventive measures related to AML/CFT for non-financial entities—known as designated non-financial businesses and professions. These entities are significant players in the financial market and are prone to AML/CFT risks arising from tax evasion, corruption, bribery, fraud schemes, insider trading, and other crimes.

CONCLUSIONS

The current realities prompt an increasingly in-depth exploration of the issues surrounding the prevention of money laundering, terrorism financing, and the financing of weapons of mass destruction. While this issue is inherently global, it also reflects specific contexts for each country. Given the reasons for implementing financial monitoring in wartime conditions, it is important to note that it is an integral component in ensuring the necessary level of national and financial security not only for the state but also for each individual citizen. Furthermore, financial monitoring helps to mitigate the impact of fraudulent schemes on the national economy, reduces the level of economic shadowing, and protects citizens' rights during their professional activities.

Financial monitoring should be viewed as a system of measures prescribed by legislation and executed by authorized entities, aimed at ensuring compliance with legal requirements for combating and preventing the laundering of criminal proceeds. Financial monitoring in the realm of AML/CFT has become a key element in the contemporary fight against financial crime. Modern challenges, driven by the rapid development of digital technologies and the globalization of financial markets, underscore the need for continual refinement of financial monitoring mechanisms and the strengthening of international cooperation in this area. Overall, the current state of financial monitoring demands not only the enhancement of national systems for combating money laundering but also deepened collaboration between countries and international organizations. Effective counteraction to financial crime and the security of the global financial environment can only be achieved through interaction and the consolidation of efforts.

A key task in this area is to assess the effectiveness of the current financial monitoring system, based on which further measures for its improvement can be developed. For future research on this topic, it is necessary to identify the fundamental directions for enhancing the effectiveness and efficiency of the financial monitoring system. These include the refinement of legislation concerning the prevention and combating of money laundering, terrorism financing, and the proliferation of weapons of mass destruction, and its alignment with international standards; coordination and harmonization of the AML/CFT prevention and combating system; strengthening cooperation with primary financial monitoring entities, non-profit organizations, and the public; and international collaboration.

Promising directions for further research to enhance the effectiveness of financial monitoring in the banking sector include: ensuring effective communication and coordination among cybersecurity entities; coordinating government primary financial monitoring entities, particularly in the non-bank sector; exploring methods and financial schemes related to AML/CFT; strengthening requirements for mandatory external and internal audits; improving IT systems; promoting the professional qualifications of staff and providing opportunities for experience exchange in the AML/CFT field.

The national risk assessment system for money laundering should be based on a unified approach that includes client identification by financial institutions, information processing by regulatory and supervisory authorities, oversight by regulatory agencies and financial intelligence units, risk assessment of money laundering and terrorism financing, and comparing financial institution data with law enforcement data to identify vulnerabilities in the AML/CFT system.

ADDITIONAL INFORMATION

AUTHOR CONTRIBUTIONS

All authors have contributed equally.

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CONFLICT OF INTEREST

The Authors declare that there is no conflict of interest.

REFERENCES

1. Ainul Huda Jamil, Zuraidah Mohd-Sanusi, Yusarina, Mat-Isa, & Najihah Marha Yaacob (2022). Money laundering risk judgement by compliance officers at financial institutions in Malaysia: the effects of customer risk determinants and regulatory enforcement. *Journal of Money Laundering Control, Emerald Group Publishing Limited, 26*(3), 535-552. <https://ideas.repec.org/a/eme/jmlcpp/jmlc-01-2022-0004.html>
2. Basel Committee on Banking Supervision Guidance. (2017, June). Sound management of risks related to money laundering and financing of terrorism. <https://www.bis.org/bcbss/publ/d405.pdf>
3. Basel Institute on Governance (2023). Basel AML Index 2023: 12th Public Edition Ranking money laundering and terrorist financing risks around the world. <https://index.baselgovernance.org/api/assets/8ebec704-b518-42ca-8de5-67dbc71a18a>
4. Blikhar, M., Vinichuk, M., Komarnytska, I., Zaiats, O., & Kashchuk, M. (2022). Counteraction to financial crimes in the system of fight against legalization (laundering) of criminally obtained funds. *Financial and credit activity: problems of theory and practice, 1*(42), 73-83. <https://doi.org/10.55643/fccept.1.42.2022.3704>
5. Brewczyńska, M. (2021). Financial Intelligence Units: Reflections on the applicable data protection legal framework. *Computer Law & Security Review, 43*, 105612. <https://doi.org/10.1016/j.clsr.2021.105612>
6. Bukhtiarova, Alina, Semenog, Andrii, Razinkova, Mila, Nebaba, Nataliia, & Haber, Józef Antoni (2020). Assessment of financial monitoring efficiency in the banking system of Ukraine. *Banks and Bank Systems, 15*(1), 98-106. [https://doi.org/10.21511/bbs.15\(1\).2020.10](https://doi.org/10.21511/bbs.15(1).2020.10)
7. Canhoto, A.I. (2021). Leveraging machine learning in the global fight against money laundering and terrorism financing: An affordances perspective. *Journal of Business Research, 131*, 441-452. <https://doi.org/10.1016/j.jbusres.2020.10.012>
8. Code of Ukraine on Administrative Offenses. No. 8073-X. (1984, December). http://zakon5.rada.gov.ua/laws/show/80731-10_14
9. Criminal Code of Ukraine. No. 2341-III. (2001, April). <https://zakon.rada.gov.ua/laws/show/2341-14>
10. Daugaard, T. V., Jensen, J. B., Kauffman, R. J., & Kwansoo, K. (2024). Blockchain Solutions with Consensus Algorithms and Immediate Finality: Toward Panopticon-style Monitoring to Enhance Anti-money Laundering. *Electronic Commerce Research and Applications, 65*, Article 101386. <https://doi.org/10.1016/j.elelrap.2024.101386>
11. Debit-Credit (2024). How many reports of suspicious transactions was received by the State Financial Monitoring Service in the 1st quarter? <https://news.dtki.ua/law/inspections/90235-skilki-povidomlen-pro-pidozrili-operaciyi-bulo-otrimano-derzfinmonitoringom-u-i-kvartali>
12. Decree of the President of Ukraine. No. 347. Strategy of economic security of Ukraine for the period until 2025. (2021, August). <https://www.president.gov.ua/documents/3472021-39613>
13. Decree of the President of Ukraine. No. 56. Strategy for ensuring state security. (2022, February). <https://www.rnbo.gov.ua/ua/Ukazy/5264.html>
14. Directive (EU) of the European Parliament and of the Council. No. 2015/849. On the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, amending Regulation (EU) No 648/2012 of the European Parliament and of the Council, and repealing Directive 2005/60/EC of the European Parliament and of the Council and Commission Directive 2006/70/EC (2015, May). <https://eur-lex.europa.eu/eli/dir/2015/849/oj>
15. Directive (EU) of the European Parliament and of the Council. No. 2018/843. Amending Directive (EU) 2015/849 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, and amending Directives 2009/138/EC and 2013/36/EU. (2018, May). <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32018L0843>
16. FATF Guidance (2018). FATF Guidance on Counter Proliferation Financing – The Implementation of Financial Provisions of United Nations Security Council Resolutions to Counter the Proliferation of Weapons of Mass Destruction. <http://surl.li/sdnltt>
17. FATF Guidance. (2021). On Risk-Based Supervision. <https://www.fatf-gafi.org/content/dam/fatf-gafi/guidance/Guidance-Risk-Based-Supervision.pdf.coredownload.inline.pdf>
18. FATF Guidance. (2021, October). Updated Guidance for a Risk-Based Approach to Virtual Assets and Virtual Asset Service Providers. <https://www.fatf-gafi.org/content/dam/fatf-gafi/guidance/Updated-Guidance-VA-VASP.pdf.coredownload.inline.pdf>
19. FATF Methodology. (2013, February). FATF Methodology for assessing compliance with the FATF Recommendations and the effectiveness of AML/CFT systems. <http://surl.li/ipcuoj>
20. FATF Recommendations (2012). International Standards on Combating Money Laundering and the Financing of Terrorism & Proliferation. <http://surl.li/vmszas>
21. FATF Report. (2024, June). Targeted Update on Implementation of the FATF Standards on Virtual Assets/VASPs, FATF. Paris, France. <https://www.fatf-gafi.org/content/dam/fatf-gafi/recommendations/2024-Targeted-Update-VA-VASP.pdf.coredownload.inline.pdf>
22. Fernandez, A. (2019). Artificial intelligence in financial services. *Economic Bulletin: Banco de Espana, 2*, 1-7. <https://doi.org/10.23977/ceed.2019.049>
23. Financial Abuse Prevention (2024). The main methods of money laundering in cryptocurrency.

- <https://finap.com.ua/osnovni-metody-vidmyvannya-groshej-u-kryptovalyuti/>
24. Grint, R., O'Driscoll, C., & Paton, S. (2017). New technologies and anti-money laundering compliance. London: Financial Conduct Authority. <https://www.fca.org.uk/publication/research/new-technologies-in-aml-final-report.pdf>
25. Institute for Economics & Peace (2024). Global Terrorism Index. <https://www.economicsandpeace.org/wp-content/uploads/2024/02/GTI-2024-web-290224.pdf>
26. Kovalenko, V. V., Sergeeva, O. S., & Sheludko, S. A. (2023). Finansovyi monitorynh ta komplaiens v bankakh. Kharkiv: Disa plus. <http://dspace.oneu.edu.ua/jspui/handle/123456789/16917>
27. Kovalenko, V., & Sheludko, S. (2022). The Shadow Economy and its Impact on Economic Growth in Ukraine. *Iqtisadiyot va moliya*, 1(149), 2-11. <http://surl.li/rohxi>
28. Law of Ukraine No. 1591-IX. On payment services. (2020, July). <https://zakon.rada.gov.ua/laws/show/1591-20#n1605>
29. Law of Ukraine No. 2121-III. On banks and banking activity. (2000, Desember). <http://zakon1.rada.gov.ua/laws/show/2121-1412>
30. Law of Ukraine No. 361-IX. On Prevention and Counteraction to Legalisation (Laundering) of Criminal Proceeds, Terrorist Financing and Financing of Proliferation of Weapons of Mass Destruction. (2019, Desember). <https://zakon.rada.gov.ua/laws/show/361-20#n831>
31. Law of Ukraine No. 679-XIV. On the National Bank of Ukraine. (1999, May). <https://zakon.rada.gov.ua/laws/show/679-14#Text>
32. Malhotra, D., Saini, P., & Singh, A. K. (2022). How Blockchain Can Automate KYC: Systematic Review. *Wireless Pers Commun*, 122, 1987–2021. <https://doi.org/10.1007/s11277-021-08977-0>
33. McNaughton, K.J. (2023). The variability and clustering of Financial Intelligence Units (FIUs) – A comparative analysis of national models of FIUs in selected western and eastern (post-Soviet) countries. *Journal of Economic Criminology*, 2, 100036. <https://doi.org/10.1016/j.jeconc.2023.100036>
34. Merendino, A., Dibb, S., Meadows, M., Quinn, L., Wilson, D., Simkin, L., & Canhoto, A.I. (2018). Big data, big decisions: The impact of big data on board level decision-making. *Journal of Business Research*, 93, 67-78. <https://doi.org/10.1016/j.jbusres.2018.08.029>
35. National agency for the prevention of corruption (2024). The only state register of persons who have committed corruption or corruption-related offenses. <https://corruptinfo.nazk.gov.ua/>
36. National Bank of Ukraine (2024). Official website. <https://bank.gov.ua/>
37. NUMBEO (2024). Crime Index by Country 2024 Mid-Year. https://www.numbeo.com/crime/rankings_by_country.jsp?title=2024-mid
38. Ogbeide, H., Thomson, M.E., Gonul, M.S., Pollock, A.C., Bhowmick, S., & Bello, A.U. (2023) The anti-money laundering risk assessment: A probabilistic approach. *Journal of Business Research*, 162, 113820. <https://doi.org/10.1016/j.jbusres.2023.113820>
39. Order of the Cabinet of Ministers of Ukraine. No. 1207-r. Plan of measures aimed at preventing the occurrence and/or reducing the negative consequences of risks identified as a result of the third national risk assessment in the field of prevention and countermeasures against the legalization (laundering) of proceeds obtained through crime, the financing of terrorism and the financing of the proliferation of weapons of mass destruction, for the period until 2026 year. (2023, Desember). <https://zakon.rada.gov.ua/laws/show/1207-2023-%D1%80#Text>
40. Regulation of the National Bank of Ukraine. (2020, July). On the application of measures of influence by the National Bank of Ukraine to institutions for violating the legislation on financial monitoring". No. 106. <https://zakon.rada.gov.ua/laws/show/v0106500-20#Text>
41. Regulation of the National Bank of Ukraine. No. 65. On implementation of financial monitoring by banks. (2020, May). <https://zakon.rada.gov.ua/laws/show/v0065500-20#Text>
42. Regulation of the National Bank of Ukraine. No.107. On implementation of financial monitoring by institutions. (2020, July). <https://zakon.rada.gov.ua/laws/show/v0107500-20#Text>
43. Sereda, E., Sokyрко, O., & Shepylenko, V. (2024). Finansovyi monitorynh u natsionalnii bezpetsi Ukrainy. *Ekonomika i suspilstvo*, 62. <https://doi.org/10.32782/2524-0072/2024-62-82>
44. Shyriaieva, L., & Zahoruiko, A. (2023). Efektyvnist finansovoho monitorynhu v bankivskii systemi Ukrainy. *Ekonomika i suspilstvo*, 47. <https://doi.org/10.32782/2524-0072/2023-47-7>
45. State Financial Monitoring Service of Ukraine (2024). Annual Report of the State Financial Monitoring Service of Ukraine for 2023. https://fii.gov.ua/assets/userfiles/200/Activity%20reports/Report_2023_ENG.pdf
46. State Financial Monitoring Service of Ukraine. (2024). Official website. <https://fii.gov.ua/>
47. State Statistics Service of Ukraine (2024). Official website. <https://www.ukrstat.gov.ua/>
48. Strategy of the National Bank of Ukraine "Financial Fortress of Ukraine" (2023, May). https://bank.gov.ua/admin_uploads/article/Strategy_NBU.pdf?v=7
49. Trading Economics (2024). Official website. <https://tradingeconomics.com/>
50. Transparency International (2024). Corruptions Perceptions Index. <https://www.transparency.org/en/>
51. Utkina, M. S. (2023). Finansovyi monitorynh yak instrument zapobihannia finansovomu terorizmu: novi vyklyky ta

perspektyvy. *Akademichni bachennia*, 20.
<http://dx.doi.org/10.5281/zenodo.8107719>

52. Utkina, M., Samsin, R., & Pochtovy, M. (2023). Financial Intelligence (Monitoring) of the Transactions with Virtual

Assets: New Legislation and Best Practices of Foreign Countries. *Journal of Money Laundering Control*, 26(2), 349–360. <http://dx.doi.org/10.1108/JMLC-12-2021-0136>

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ЕФЕКТИВНІСТЬ РЕГУЛЯТОРНОГО КОНТРОЛЮ ЗА ВІДМИВАННЯМ ГРОШЕЙ В УКРАЇНІ: НА ФІНАНСОВОМУ ФРОНТІ ВСЕ СПОКІЙНО?

Актуальність дослідження ефективності існуючої системи фінансового моніторингу, зокрема адекватності її нормативно-правової бази, зумовлена активізацією процесів, пов'язаних із легалізацією злочинних доходів за участю фінансових установ. Це і закріплення тіньових схем у платіжних операціях, і розширення каналів відмивання грошей, і фінансування тероризму. Також з'явилися прогалини в регулюванні нагляду за ринком криптовалют і цифровими фінансовими послугами. Дане дослідження має на меті систематизувати нормативно-правову базу й оцінити ефективність системи фінансового моніторингу, окреслити перспективи подальших досліджень. Методологія дослідження передбачає збалансоване узагальнення, уточнення, систематизацію, узагальнення та статистичний аналіз. Макроекономічними передумовами посилення фінансового моніторингу є соціально-економічні, політичні та морально-етичні чинники. У дослідженні наголошується, що ефективність зусиль із протидії відмиванню грошей і фінансуванню тероризму не завжди є однозначною, наприклад, нечіткий взаємозв'язок між інтенсивністю заходів та їх ефективністю в запобіганні регуляторним порушенням, а також відсутність точної інформації про потенційні правопорушення до розкриття інформації. Об'єктивного розуміння ефективності фінансового моніторингу можна досягти за допомогою інтегральних оцінок. Запропоновано методику розрахунку інтегрального показника ефективності, яка виявляє слабкі місця в існуючій системі. Наголошується на необхідності впровадження нових заходів із посилення координації системи фінансового моніторингу, особливо в умовах воєнного стану. За результатами дослідження сформульовано рекомендації щодо підвищення ефективності механізму фінансового моніторингу, серед яких є впровадження технологій штучного інтелекту для ідентифікації фінансових операцій; використання технологій машинного навчання; посилення моніторингу на ринку криптовалют; посилення нагляду за операціями, пов'язаними з міжнародним тероризмом; розроблення дієвого механізму протидії фінансовим злочинам. Ці пропозиції можуть бути корисними для органів фінансового моніторингу й економічної безпеки в Україні.

Ключові слова: фінансовий моніторинг, ПВК/ФТ, регуляторне забезпечення, фінансова безпека, фінансова система, ризик, фінансові операції

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