

DOI: [10.55643/fcaptop.2.49.2023.4037](https://doi.org/10.55643/fcaptop.2.49.2023.4037)

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Received: 02/03/2023

Accepted: 18/04/2023

Published: 30/04/2023

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METHODICAL APPROACH TO ASSESSING FINANCIAL AND CREDIT INSTITUTIONS' ECONOMIC SECURITY LEVEL

ABSTRACT

Ensuring the economic security of the functioning of all economic entities is one of the main tasks, the solution of which makes it possible to preserve national sovereignty. Since February 24, 2022, the domestic economy has been suffering from Russia's brutal, open and large-scale military aggression and is in a state of constant turbulence. That, in turn, causes increased attention to security issues at all levels of the economy in the face of global, geopolitical, and domestic economic threats. That is why this study aims to develop a methodical approach to assessing the level of economic security of financial and credit institutions. Scientific approaches to the definition of the concept of "economic security of financial and credit institutions" are analyzed and the author's vision of the concept through the prism of development is proposed. The existing methodical approaches of domestic scientists to the assessment of the level of economic security of financial and credit institutions were studied. A methodology for assessing the level of economic security of financial and credit institutions based on the scoring approach has been developed. Quantitative and qualitative components of economic security are highlighted, which are proposed to be analyzed in the study of economic security. It is proposed to use the Harrington scale to determine the level of economic security of financial and credit institutions. Approbation of the proposed methodology was carried out on the assessment of the activities of five banking institutions. According to the analysis obtained, the relevance of the proposed methodology for assessing the level of economic security of financial and credit institutions has been proven.

Keywords: economic security, methodology, security level, financial and credit institutions, financial system of Ukraine

JEL Classification: A10, F50

INTRODUCTION

The economic security of financial sector entities and its provision are currently at the centre of scientific research and are one of the most important practical tasks for the development of modern economic relations. It is explained by the growing level of uncertainty in the macroeconomic environment, caused by the objective deepening of the domestic economy functioning market foundations, and by the increasing importance of the influence of political, institutional, and technological factors on the economic sphere. At the same time, a component of the economic security of the state is the security of the financial sector, which is formed, primarily, due to the safe activity of its individual participants - financial institutions. It is, as a result of their position as financial intermediaries, whose successful functioning is based on relationships of trust, who first of all feel the influence of all negative factors that accompany economic processes.

This determines the systemic importance of ensuring the economic security of financial and credit institutions in order to achieve the economic stability of the state, as well as the complexity and multifaceted nature of the problem. The most urgent problems in this area include deepening the understanding of the economic security of financial and credit institutions from the point of view of reflecting their essence and developing methods for assessing the economic security of financial and credit institutions that are adequate to real requirements, taking into account the variety of indicators and influencing factors.

Assessing the level of financial and credit institutions' economic security is an important task facing the management staff of market participants, taking into account the numerous challenges and threats that are constant companions of their activities. The permanent increase in the number of threats to the financial and credit institutions' economic security forces management to develop a methodology for assessing economic security to identify and counteract destabilizing factors.

The relevance of the issue of forming a methodical approach to assessing the economic security of financial services market entities is explained by the availability of extensive work by scientists on the specified issue. However, at present, a comprehensive and effective toolkit for assessing the economic security of financial and credit institutions has not been reflected.

A feature of financial and credit institutions' economic security is its high dependence on a significant range of factors of external and internal origin. In this regard, the method of assessing economic security for institutions is very important. It will be the basis for the formation of timely and effective management decisions to solve the task of preventing and eliminating existing or potential threats to the institution's activity to ensure a high level of economic security.

LITERATURE REVIEW

The issue of methods assessing the financial and credit institutions' economic security combines the different scientists' views. In particular, Kolodizev O.M. and Steyer O.M. (Kolodizev and Shtayer, 2011) offer an improved methodology for assessing the level of economic security, which consists in the formation of an integral indicator with the possibility for financial and credit institutions to independently determine indicators for each component. Gubareva I.O. (Shtayer and Gubareva, 2010) proposes to study economic security according to the most common areas of financial and credit institutions' activity analysis - compliance of mandatory economic standards with normative values and ratio analysis.

Regarding other scientists' views, Moiseyenko I.P. and O.A. Martyniuk (Vasylchak, 2012) investigated the scoring method based on the calculation of the number of points that are formed based on the results of the assessment of financial ratios and indicators. The mentioned technique is based on the threshold values of the selected indicators, which describe destabilizing factors that influence the economic security of financial and credit institutions.

According to the scientific opinion of Baranovsky O. I., the completeness, effectiveness and timeliness of management measures to prevent existing or potential threats directly depend on the extent adequate assessment of the existing security level of the institution is carried out (Baranovsky, 2006).

The approach to ensuring the economic security of economic entities is based on the assessment of financial component according to the Pidkhomny O.M. and Yastrubetska L.S. scientific views (Podkhomnyi and Yastrubetska, 2007). According to the scientists' approach, the financial component is evaluated by cash flows in terms of the types of financial and economic activity of the subject.

An indicative method of diagnosing the bank's financial security is presented at Riznyk N.S. research, which compares the actual and threshold values of the indicators. The presented analysis makes it possible to determine the state of security of the institution in accordance with the approximation of its level to the security state, risk, threat or danger (Raznyk, 2008). The author notes a list of relevant indicators for analysis with the further determination of the financial security level.

Regarding the qualitative assessment of financial security level, scientists (Poberezhny et al., 2010) an expert evaluation by means of a questionnaire is proposed, which is quite appropriate. The survey is conducted by an expert on the activities of specific institutions. Depending on the received points, several levels of the bank's financial security are presented.

As for determining the level of economic security of the bank, Vasylchenko Z. and Vasylchenko I. (Vasylchenko and Vasylchenko, 2006) a well-founded concept of a single integral indicator containing parameters with the most accurate characteristics of the bank's activities results. According to the researchers' scientific point of view, it is noted that when determining the dynamics of the indicator, one can have a real idea of the bank's financial condition, which will allow timely response to threats and implementation of the necessary management decisions. But the proposed approach is based on the results of the assessment of the financial and credit institutions' financial condition, without taking into account other components of economic security.

Modern scientific research presents a fairly wide base of methods for analyzing the activities of financial and credit institutions. But it is worth noting that not all of the proposed methods can be implemented to assess the economic security of financial and credit institutions. A significant research part concerns the assessment of the level of economic security of banks, leaving out other important market actors, such as pawnshops and credit unions.

Taking into account the presented scientific approaches to assessing the level of economic security of financial services market subjects, it can be stated that this issue is widely researched and relevant. However, deepening requires a methodical approach to assessing the level of financial and credit institutions' economic security, which will be based on the assessment of several components of economic security. Economic security is multi-component and it is impractical to determine its level based on the results of the analysis of only one component.

AIMS AND OBJECTIVES

The aim of the work is to develop a methodical approach to assessing the level of economic security of financial and credit institutions. The research also sets the following tasks: to generalize the understanding of the economic security of financial and credit institutions, to determine a list of coefficients and indicators for the analysis of the proposed components of economic security, to develop, justify and conduct an approbation of the proposed methodology for assessing the level of economic security of financial and credit institutions.

METHODS

The theoretical and methodological foundations of the research are based on the theories, concepts, methods and hypotheses of scientists whose research is devoted to the issue of economic security of financial and credit institutions. Specific and general scientific methods were used to achieve the research goal and to solve the tasks, which ensured the reliability of the obtained results: analysis and synthesis, comparison, classification, the method of theoretical generalization and classification, statistical methods of information collection and processing.

The research's information base consists of the legislation of Ukraine, normative and methodological documents and orders of the Ministry of Finance of Ukraine and the Ministry of Economy of Ukraine, analytical data and strategies of the National Bank of Ukraine, financial reporting of Ukraine banks, scientific works of leading scientists on the issues of the study, information data from the Internet, own authors calculations.

RESULTS

Ensuring the economic security of financial and credit institutions in modern conditions of economic imbalances is the main task of the modern financial system. For the stable and effective economic development of the country, the activity of financial and credit institutions should primarily be based on the security principle.

The development of an effective system for ensuring the economic security of financial and credit institutions must be given considerable attention since the safe operation of the institution is a guarantee of its competitiveness and reliability in the financial sector. This is explained by the fact that institutions seek not only to obtain maximum profits from their activities but also to minimize the impact of their activities' threats. The use of an effective methodology for assessing the level of economic security in the system of ensuring the economic security of financial and credit institutions will allow timely identification of threats and minimizing their impact on the institution's activities.

A fairly wide range of scientific research is devoted to solving the issue of ensuring the economic security of banks and is based primarily on the financial results of the institution's activities. Other subjects of the financial sector, which are developing confidently, remain out of consideration. Therefore, we consider it expedient to investigate the issue of developing a methodology for assessing the level of economic security, which will be based on the several components analysis and will be relevant for banking institutions, credit unions and pawnshops.

The primary factor in the development of an effective methodology for assessing the level of economic security of financial and credit institutions is the very vision of this concept. Scientists use several methodological approaches when determining the essence of the economic security of financial and credit institutions. From a sufficiently wide list of them, which is offered by modern economic security (Rozhkov, 2016), the most common approaches are a resource, the standpoint of sustainability, process, competitive and defensive.

We consider it expedient to highlight a new and promising approach related to development, in which the economic-financial and credit institution's security is considered a prerequisite for development, which is ensured by the institution's evolution. In this case, the guarantee of economic security is based on the processes of prevention, management and effective implementation of the sustainable development strategy.

According to the proposed approach, according to the author's vision, the economic security of financial and credit institutions is a development prerequisite, which ensures stable activity, protection of economic interests, resources, legal rights and the ability to resist external and internal threats. It is a complex concept that combines several elements that contributes to the financial and credit institution stability development.

Having analyzed the existing approaches, concepts, methods and indicators of assessing the level of economic security of financial and credit institutions, it can be stated that there is currently no single, generally accepted methodology. Moreover, a significant part of the methods is based on analysing the institution's financial results and its profitability. Undoubtedly, financial results are important in determining the safe operation of an institution, but other components of economic security are no less important.

Considering the importance of qualitative and quantitative parameters for determining the level of financial and credit institutions' economic security, we propose to develop a methodology that will take into account these two categories of indicators. For quantitative analysis, we examine the financial component of economic security, which is characterized by the effectiveness of activities. For qualitative analysis, we propose to highlight the informational, personnel and marketing components.

The information component of economic security means effective information and analytical support for the implementation of all business processes of financial and credit institutions, as well as the preservation of commercial secrets affecting all employees of financial and credit institutions.

Personnel security is a set of measures to prevent risks related to personnel, their intellectual potential and moral qualities, and labour relations in general. Personnel security of a financial and credit institution is aimed at minimizing internal threats to its activity generated by its own personnel.

The marketing component of the economic security of financial and credit institutions is related to the model of the institution's market behaviour, competitive strategy, pricing policy, choice of service delivery channels, innovative strategy, and characterizes the reliability of interaction with economic counterparties. Preserving and strengthening the trust of clients is one of the foundations of ensuring the economic security of financial and credit institutions.

To assess the level of components of financial and credit institutions' economic security, we will use the methodology of the scoring approach, which involves the calculation of the number of points formed on the basis of the evaluation of the coefficients and activity indicators of financial and credit institutions.

In general, the financial and credit institution's economic security will be determined by the next formula:

$$ES = F + I + P + M, \quad (1)$$

where *ES* is the economic security of financial and credit institutions; *F* – financial component; *I* – informational component; *P* – personnel component; *M* – marketing component.

For the actual determination of the level of economic security, the resulting indicator is evaluated according to the Harrington scale. According to the multi-integral discrete numerical scale, the economic security of a financial and credit institution can receive one of the specified levels:

- very high (0.8 - 1.0);
- high (0.63 - 0.8);
- average (0.37 - 0.63);
- low (0.2 - 0.37);
- very low (0 - 0.2).

Edwin Harrington's original desirability function approach was first proposed in 1965 as a method for evaluating product quality. The scientist noted that the quality of industrial products is not determined by one characteristic. He characterized quality as a composition of interrelated characteristics that are almost always measured in different units (Harrington, 1965). The economic security of financial and credit institution has the same multifactorial definition since its completeness and accuracy is related to the analysis of its components. That is why the Harrington scale is relevant for determining the level of economic security of financial and credit institutions.

Accordingly, after calculation, according to formula 1, the indicator of economic security of financial and credit institutions can have a value from 0 to 4. Therefore, for the ease of using the Harrington scale, with mathematical proportion help, we determine exactly which results will correspond to the proposed 5 levels of economic security:

- very high (3.2 - 4.0);
- high (2.52 - 3.2);
- average (1.48 - 2.52);
- low (0.8 - 1.48);
- very low (0 - 0.8).

The assessment of the economic security financial component of domestic institutions is carried out by legislatively or normatively regulated mathematical ratios (coefficients that include the "Basic Principles of Effective Banking Supervision" of the Basel Committee on Banking Supervision, performance indicators calculated at the level of the World Bank, the IMF, economic standards of banks of the National Bank of Ukraine), which have defined maximum, minimum or limit regulatory values, which are regulated by state bodies, as well as a number of informal coefficients used by specialists and financial experts.

For a comprehensive assessment of the level of financial and credit institutions' economic security, it is necessary to have data on the current state and guidelines for further development. Therefore, the definition of indicators' list of financial components of financial and credit institutions' economic security involves the definition: indicators characterizing the level of financial security; economic norms of institutions' activity; indicators of the level of profitability and profitability of activity.

Based on the analysis of scientific works (Gerasimovych et al., 2004; Kosova, 2008; Zvarych, 2011; Onyshchenko V.O., et al., 2016; Decision of the Board of the National Bank of Ukraine, 2017; Onyshchenko S.V. & Maslii O.A., 2017), we suggest using the indicators summarized in table 1 when evaluating the financial component of economic security of banks.

Table 1. Indicators/coefficients of assessing the level of banks' economic security financial component. (Source: developed by the authors on the basis of (Gerasimovych et al., 2004; Kosova, 2008; Zvarych, 2011; Onyshchenko V.O., et al., 2016; Decision of the Board of the National Bank of Ukraine, 2017; Onyshchenko S.V. & Maslii O.A., 2017)

Conventional designation	Name	Normative/recommended value
N1	Regulatory capital (RC)	At least UAH 200 million
N2	Norm of the sufficiency of the RC (adequacy)	At least 10%
N3	Norm of the adequacy of fixed capital	At least 7%
N6	Short-term liquidity standard	At least 60%
N7	Norm of the credit risk maximum amount of per counterparty	Not more than 25%, for systemically important banks - no more than 20%
N8	Norm of large credit risks	No more than 8 times the size of the LCD
N9	Norm of the credit risk maximum amount for transactions with persons related to the bank	Not more than 25%
N11	Norms for investing in securities separately for each institution	Not more than 15%
N12	Norm of the total amount of investment	Not more than 60%
L13-1	Long open currency position limit	No more than 10%
L13-2	Short open currency position limit	No more than 10%
ROA	Return on assets	At least 1%
ROE	Return on equity	At least 15%
NIM	Net interest margin	At least 4.5%
PE	Profit per employee	Availability of profit
Rc	Return on capital	Positive value, positive dynamics (when analyzing over several periods)
Pc	Profitability of costs	Positive value, positive dynamics (when analyzing over several periods)
Pi	Profitability of other income	Positive value, positive dynamics (when analyzing over several periods)

As for credit unions, in 2019, the National Commission for State Regulation of Financial Services Markets approved the Regulation "On Mandatory Financial Standards and Requirements Limiting Risks in Transactions with Financial Assets of Credit Unions" (Regulation, 2019). In accordance with the Regulation, mandatory financial norms for the activity of credit unions are established. The National Commission ceased its activities in 2020, as its supervisory authority was granted to the National Bank of Ukraine. However, the Regulation is still valid and considering that the National Bank of Ukraine has not formulated new mandatory standards for the activity of credit unions, we suggest using the standards provided for by the Regulation when assessing the financial component of the economic security of credit unions. These standards include:

- standard of financial stability (K1) - not less than 10%;
- capital adequacy ratio (K2) - not less than 7%;
- capital reserve buffer (B) - above the regulatory value of the capital adequacy standard (K2);
- credit risk ratio (K3) - no more than 25;
- credit risk concentration standard (K4) - no more than 3;
- liquidity reserve ratio (K5) - more than 0.

More difficult is the question of determining the indicators and coefficients for assessing the level of economic security financial component of pawnshops. Considering that the powers of the regulator for the activities of pawnshops were granted to the NBU only in 2020, and before that the regulatory body did not envisage the application of mandatory standards to their activities, the use of standards in the methodology is impossible due to their absence.

We consider it expedient to use the profitability ratios given in the table to assess the level of the financial component of the economic security of credit unions and pawnshops in Table 1.

According to the selected indicators, which are proposed to assess the level of the financial component of economic security of banks, if the indicator corresponds to the normative value and has positive dynamics, it is assigned 1 point. If the normative value is not reached - 0 points. With this approach, the maximum number of points for the financial component is 18 points. As for credit unions and pawnshops, the maximum number of points for the financial component is 11 points and 5 points, respectively.

In order to equate the received rating points of the coefficients to the single scale of effectiveness, which will be used in Formula 1, we will use a mathematical proportion. According to the proportion, 1 point of the rating assessment of the financial component is equal to the weight factor of 0,055. Therefore, the maximum number of points obtained in the study of the financial component of economic security is 18, which, accordingly, has a weight of 1, as a high level of economic security. The distribution of points is given in Table 2.

Table 2. The level of the weighting coefficient of economic security financial component.					
Banks		Credit unions		Pawnshops	
Received points	Financial component level	Received points	Financial component level	Received points	Financial component level
16-18	1	10-11	1	5	1
11-15	0.825	7-9	0.81	4	0.8
6-10	0.55	4-6	0.54	3	0.6
1-5	0.275	1-3	0.27	1-2	0.4

The information component of the economic security of financial and credit institutions is based on the principles of confidentiality, integrity, availability and security, which ensure the uninterrupted and reliable operation of information systems. In accordance with today's issues and challenges faced by financial and credit institutions, customer requirements and their wishes, a list of indicators for analysis with the corresponding distribution of rating points is proposed to assess the information component level (Table 3).

Table 3. Indicators of assessing the level of financial and credit institutions' economic security informational component.

Indicator for analysis	Insufficient level, 0 points	Average level, 1 point	High level, 2 points
Availability of complete information about the institution on the website (history of activity, partners, services)	Absent	Incomplete	Constantly updated
Speed of response to a card left in an ATM (for banks)	Absent	More than 10 minutes	Up to 10 minutes
Double user identification when entering the personal account (password, call)	Absent	Does not always work	Constantly works
Availability of chatbots in messengers (consulting services 24/7)	Absent	Promo version	Successfully work and consult
Verification when performing operations (confirmation by message, call or application login password)	Absent	Only during "atypical" operations	Approval of all operations
Requests from the institution to update information about the client	Absent	Annually	Quarterly
Ability to generate an electronic digital signature	Absent	Under development	Good luck for a year
Availability of a privacy policy in the institution	Absent	Under development	Successfully implemented

The marketing component of the economic security of a financial and credit institution is proposed for evaluation, as it plays an important role both in attracting the client base and in maintaining the image in the era of digitalization, informatization and the multifaceted capabilities of the Internet. For the analysis of the specified component, we offer the characteristics for the analysis listed in Table 4.

Table 4. Indicators of assessing the level of financial and credit institutions' economic security marketing component.

Indicator for analysis	Insufficient level, 0 points	Average level, 1 point	High level, 2 points
The presence of a "page" of the institution in social networks with advertising of services	Absent	Invalid	Constantly updated
The work of chatbots in messengers	Absent	Promo version	They work successfully and provide consultations
Online application	Absent	Promo version	Successfully works and provides services online
Advertising campaign on television/on the Internet	Absent	Less than 5 commercials per week	More than 5 commercials per week
Ease of perception by users of the institution's website (colour gamut, for people with visual impairments)	Complex	It is difficult to visually determine the necessary information	All important "tabs" are highlighted and easily accessible
Cooperation with other companies to jointly attract customers	Absent	One partner	More than 2 partners
Availability of souvenir products	Absent	Only a few types are available	Wide range

The economic's security personnel component of financial and credit institutions is presented for analysis since human potential in all its manifestations has a decisive role in ensuring the integrity, perspective and safe operation of the institution. The proposed list of signs given in Table 5, will allow to investigate the personnel component for further determination of the economic security level.

Table 5. Indicators/coefficients of assessing the level of security of the personnel component.

Indicator for analysis	Insufficient level, 0 points	Average level, 1 point	High level, 2 points
Personnel turnover	High	Average	low
Expenses of the institution for courses/seminars for employees	Absent	Insignificant	Weighty and annual
Frequency of board change	Often	Periodically	Rarely
Mandatory higher education upon employment	Absent	Not necessarily	Necessarily
Mandatory work experience for employment	Absent	Not mandatory	Mandatory
Mandatory knowledge of a foreign language by employees	Absent	Not mandatory	Mandatory

According to the proposed evaluation indicators of the qualitative components of economic security of financial and credit institutions, each of them receives an individual distribution of points. Using a mathematical proportion, we will determine the distribution of points for each component. The obtained results are presented in Table 6.

Table 6. The level of the personnel security weighting factor.

The level of the information component weight factor	
Received points	The information component level
16-18	1
11-15	0.825
6-10	0.55
1-5	0.275
The level of the marketing component weight factor	
Received points	The marketing component level
13-14	1
9-12	0.84
5-8	0.56
1-4	0.28
The level of the personnel security weighting factor	
Received points	The personnel level
10-12	1
7-9	0.72
3-6	0.48
1-2	0.16

As a result of evaluating the components of financial and credit institutions' economic security, we receive a total number of points for each of them and have the opportunity to determine the level of economic security, according to Formula 1.

According to the proposed methodology for assessing the level of economic security of financial and credit institutions, not only the financial component of security is analyzed, but also the information, personnel and marketing components. Therefore, we will assess the level of economic security of financial and credit institutions according to the scoring approach in order to determine the relevance and feasibility of applying the specified approach.

The method of the scoring approach is relevant for use in assessing the level of economic security of banks, pawnshops and credit unions. But taking into account that banking institutions occupy the largest market share of the financial sector, and credit unions and pawnshops are regulated by the NBU starting from July 1, 2020, and some issues of their activity are not agreed upon, we consider it expedient to test the methodology based on the results of the banks' activities.

5 banking institutions were chosen to assess the level of economic security:

- systemically important banks - state bank Ukreximbank; bank with foreign capital Raiffeisen Bank Aval; bank with private capital First Ukrainian International Bank (FUIB);
- banks with private capital Poltava Bank and KB Zemelnyi Kapital.

According to the defined list of indicators and characteristics necessary for the analysis of the financial, information, personnel and marketing component of economic security, they were investigated for each of the specified banks.

First, we will analyze the results of the activity of the selected banks according to the indicators of the financial component of economic security. The results of the analysis are given in Table 7.

Table 7. Results of the assessment of the financial component of banks' economic security.

Ukreximbank									
Year/indicator	N1	N2	N3	N6	N7	N8	N9	N11	N12
2020	15049595	23.27	16.26	84.32	19.97	153.85	0.33	0.02	0.19
2019	11385557	15.26	9.73	110.45	26.37	353.13	0.47	0.03	0.22
2018	10992668	12.26	9.67	116.66	32.37	192.79	0.09	0.03	0.22
2017	10997754	14.46	18.89	141.67	27.81	99.31	0.07	0.03	0.22
2016	7817468	9.89	6.75	154.82	10.09	14.55	0.02	0.03	0.22
2015	2282282	2.41	-3.25	136.98	33.54	43.21	0.08	0.03	0.22
Year/indicator	L13-1	L13-2	ROA	ROE	NIM	PE	Rc	Pc	Pi
2020	2.55	0.06	-2.90	54.03	0.71	-1874.41	-54.03	-50.23	0.15
2019	2.50	0.43	0.05	0.73	1.10	21.88	0.73	0.53	0.07
2018	1.20	8.23	0.50	9.52	1.18	269.81	9.52	6.69	0.13
2017	0.36	35.24	0.45	5.44	1.65	256.62	5.44	6.78	0.11
2016	0.25	35.67	-0.06	18.23	2.02	-327.63	-18.23	-7.95	0.07
2015	0.23	36.01	-9.95	0.00	1.69	-4714.64	0.00	-110.0	0.07
Raiffeisen Bank Aval									
Year/indicator	N1	N2	N3	N6	N7	N8	N9	N11	N12
2020	10474033	18.04	11.91	88.40	15.12	64.82	7.20	0.80	0.84
2019	10656405	19.36	12.15	79.55	8.17	8.17	1.53	0.80	0.84
2018	10279801	18.88	23.07	81.52	10.95	20.88	0.50	0.80	0.84
2017	10053046	20.64	17.69	88.00	11.20	11.20	2.27	0.80	0.84
2016	9634759	26.82	13.73	99.14	12.62	37.53	12.82	0.80	0.84
2015	7870757	18.91	14.12	93.25	20.56	76.41	13.30	0.80	0.84
Year/indicator	L13-1	L13-2	ROA	ROE	NIM	PE	Rc	Pc	Pi
2020	3.29	0.00	3.83	66.83	6.80	534.68	31.40	40.28	2.88
2019	0.23	0.18	5.83	78.55	8.71	628.48	36.65	46.51	3.86
2018	3.64	0.11	6.94	82.68	9.61	661.46	43.77	48.99	3.95
2017	0.43	0.10	7.94	86.42	8.49	691.50	48.85	80.08	4.15
2016	0.47	0.10	6.48	60.40	8.44	483.28	40.42	58.22	4.70
2015	0.50	0.09	-3.42	-29.79	7.66	-238.33	-33.57	-29.98	3.87
First Ukrainian International Bank									
Year/indicator	N1	N2	N3	N6	N7	N8	N9	N11	N12
2020	7429398	20.29	12.55	106.80	12.06	53.60	41.54	0.17	0.21
2019	7429398	20.29	12.55	106.80	12.06	53.60	41.54	0.17	0.21
2018	5573152	16.82	12.42	103.02	15.01	131.45	80.25	0.17	0.21
2017	3632735	12.44	12.10	97.80	173.81	323.60	173.81	0.17	0.21
2016	4083249	12.82	8.96	101.55	199.35	380.45	53.80	0.05	0.47
2015	3790521	11.29	8.58	113.93	201.34	392.10	64.70	0.05	0.47
Year/indicator	L13-1	L13-2	ROA	ROE	NIM	PE	Rc	Pc	Pi
2020	1.92	0.00	3.34	50.90	9.02	657.04	25.86	30.68	1.92
2019	1.92	0.00	4.25	68.13	9.26	618.06	25.85	31.46	2.83
2018	0.61	0.21	4.10	59.33	8.06	542.39	31.33	30.53	2.83
2017	0.60	1.45	1.59	21.44	6.37	196.10	14.90	12.80	1.00
2016	0.60	1.43	0.67	8.59	4.76	78.59	7.09	5.61	7.45
2015	0.52	1.01	-4.66	-53.19	5.70	-452.60	-47.79	-51.32	0.65

(continued on next page)

Table 7. Continued

Poltava Bank									
Year/indicator	N1	N2	N3	N6	N7	N8	N9	N11	N12
2020	652 953	40.31	31.58	102.30	20.65	80.47	16.46	0.01	0.02
2019	621 177	35.93	25.36	99.64	18.04	69.72	24.02	0.02	0.02
2018	552 199	35.37	27.64	90.77	18.02	89.50	27.80	0.06	0.09
2017	486 938	33.39	20.84	79.00	20.59	99.65	30.33	2.06	2.36
2016	393516	32.41	19.74	88.39	18.53	77.34	28.81	2.06	2.36
2015	319790	27.3	17.27	87.11	17.57	75.99	18.6	2.08	2.36
Year/indicator	L13-1	L13-2	ROA	ROE	NIM	PE	Rc	Pc	Pi
2020	0.35	0.34	1.80	13.66	4.87	89.42	7.33	29.33	3.75
2019	0.40	0.00	4.77	34.67	6.44	189.81	15.20	69.94	4.75
2018	0.32	0.03	3.99	30.56	6.01	145.48	12.94	60.75	4.46
2017	0.25	0.01	3.46	29.21	4.82	111.26	11.23	48.31	4.27
2016	0.35	0.11	4.05	47.94	4.46	116.73	13.68	36.33	4.25
2015	0.49	0.03	12.02	154.06	4.87	289.87	39.25	90.58	4.28
KB Zemelnyi Capital									
Year/indicator	N1	N2	N3	N6	N7	N8	N9	N11	N12
2020	241716	29.45	25.46	67.22	19.82	186.56	18.75	0.00	0.00
2019	253599	39.67	35.22	80.92	15.16	120.67	22.91	0.00	0.00
2018	236518	43.77	40.10	95.17	22.83	129.70	22.90	0.00	0.00
2017	210265	50.43	45.52	97.91	22.09	132.89	18.00	0.00	0.00
2016	134409	51.94	42.01	142.98	22.69	139.75	17.3	0.00	0.00
Year/indicator	L13-1	L13-2	ROA	ROE	NIM	PE	Rc	Pc	Pi
2020	0.33	0.42	-3.27	-13.08	8.13	-242.84	-12.69	-32.22	1.01
2019	0.21	0.33	2.52	8.87	8.48	164.67	7.64	28.76	1.55
2018	0.89	0.00	2.52	7.33	8.96	136.02	6.83	25.92	9.14
2017	0.71	0.00	0.59	1.50	5.92	24.62	1.49	8.99	1.52
2016	0.65	0.00	0.82	1.49	6.63	14.67	1.52	5.06	3.82

According to the results of the analysis, it can be said that the systemically important banks of Ukraine and Poltava Bank comply with the requirements of mandatory economic standards. The largest share of non-compliance with regulatory requirements in KB Zemelnyi Capital in 2020. Such dynamics in the bank are connected with the economic and social instability in the country and the world, which was connected with the pandemic.

Regarding the analysis of the results of the banks' activities based on other selected indicators, Ukreximbank, Poltava Bank and KB Zemelnyi Capital have problems with compliance with the normative values of return on assets and return on equity in 2020. This is the result of the negative impact of the pandemic on the activities of institutions. Raiffeisen Bank Aval and First Ukrainian International Bank were the most prepared institutions, which complied with the regulatory values in the studied periods.

The analysis of information, marketing and personnel components of banks economic security was carried out based on the results of research and study of the information base of each bank, their information policy, reporting and other official documents, data from the official website of the bank and the NBU, information from mass media.

According to the presented methodology, the obtained rating points of the studied coefficients are equated to a single performance scale, according to which the maximum number of points for each component of economic security is 1. According to the specified division, a scale was formed according to which the corresponding total number of points is equal to the corresponding coefficient value. The results of the calculations are given in Table 8.

Table 8. Levels of banks' economic security components in accordance to received points. Note: F – financial component; I – informational component; P – personnel component; M – marketing component.

Name of the bank	Year	F	Level	I	Level	P	Level	M	Level
Ukreximank	2020	13	0.825	16	1	13	1	8	0.72
	2019	13	0.825	16	1	13	1	8	0.72
	2018	14	0.825	16	1	13	1	7	0.72
	2017	14	0.825	16	1	13	1	7	0.72
	2016	11	0.825	11	0.825	12	0.84	8	0.72
	2015	9	0.55	9	0.55	10	0.84	8	0.72
Raiffeisen Bank Aval	2020	18	1	16	1	14	1	11	1
	2019	18	1	16	1	14	1	10	1
	2018	18	1	16	1	14	1	11	1
	2017	18	1	16	1	14	1	10	1
	2016	18	1	15	0.825	14	1	10	1
	2015	12	0.825	14	0.825	12	0.84	10	1
First Ukrainian International Bank	2020	16	1	16	1	14	1	11	1
	2019	17	1	16	1	14	1	10	1
	2018	17	1	16	1	14	1	12	1
	2017	17	0.825	15	0.825	14	1	10	1
	2016	14	0.825	14	0.825	13	1	10	1
	2015	11	0.825	13	0.825	12	0.84	10	1
Poltava Bank	2020	14	0.825	12	0.825	10	0.84	8	0.72
	2019	18	1	12	0.825	10	0.84	8	0.72
	2018	17	1	11	0.825	10	0.84	9	0.72
	2017	17	1	12	0.825	9	0.84	9	0.72
	2016	16	1	9	0.55	8	0.56	9	0.72
	2015	18	1	9	0.55	8	0.56	9	0.72
KB Zemelnyi Capital	2020	9	0.55	1	0.275	2	0.28	6	0.48
	2019	16	1	1	0.275	2	0.28	6	0.48
	2018	15	0.825	1	0.275	2	0.28	6	0.48
	2017	15	0.825	0	0	2	0.28	7	0.72
	2016	15	0.825	0	0	2	0.28	7	0.72

As a result of grouping the obtained points according to each of the investigated components of the bank's economic security, we calculate the level of economic security of banks according to formula 1. The obtained indicator characterizes the level of economic security of the corresponding bank. The summarized results of the analysis for each bank are shown in the Table 9 indicating the specified level of economic security.

Table 9. The level of economic security of the studied banks.

Bank/year	2015	2016	2017	2018	2019	2020
Ukreximbank	2.66	3.21	3.545	3.545	3.545	3.545
	High	Very high	Very high	Very high	Very high	Very high
Raiffeisen Bank Aval	3.49	3.825	4	4	4	4
	Very high	Very high	Very high	Very high	Very high	Very high
First Ukrainian International Bank	3.65	3.65	3.65	4	4	4
	Very high	Very high	Very high	Very high	Very high	Very high
Poltava Bank	2.83	2.83	3.385	3.385	3.385	3.21
	High	High	Very high	Very high	Very high	Very high
KB Zemelnyi Capital	Report missing	1.825	1.825	1.86	2.035	1.585
	Report missing	Medium	Medium	Medium	Medium	Medium

According to the conducted analysis, the studied banks have a very high level of economic security, except KB Zemelnyi Capital. The said bank has a volatile position, which finally in 2020 decreased to the lowest level for all the years under study and is 1.585 and is close to the low level of safety.

For all studied banks, the lowest level of economic security is observed in 2015. This is explained by the consequences of the economic crisis that began in 2014. Regarding the results of the level of security of banks in 2020, systemically important banks and Poltava Bank adhere to the position of maintaining a very high level of economic security, except KB Zemelnyi Capital.

At the end of 2019, the world economy faced an unprecedented challenge - COVID-19. The pandemic affected absolutely all aspects of people's lives and all sectors of the economy. As a result, banking institutions that are provided with a sufficient level of resources, have a balanced credit policy, a wide client and partner base, and appropriate information and technological equipment have quickly adapted to changes in the economy. This allowed them to maintain their profitability, operational efficiency and prospects for further development, even during the pandemic. Such positive trends, according to the conducted research, are observed in Ukreximbank, Raiffeisen Bank Aval, First Ukrainian International Bank and Poltava Bank (Figure 1). KB Zemelnyi Capital was unprepared for this level of challenge, as it had an insufficient level of ensuring components of economic security, especially the information and marketing components, which play an important role in the era of informatization. This is confirmed by the decrease in the level of bank economic security in 2020.

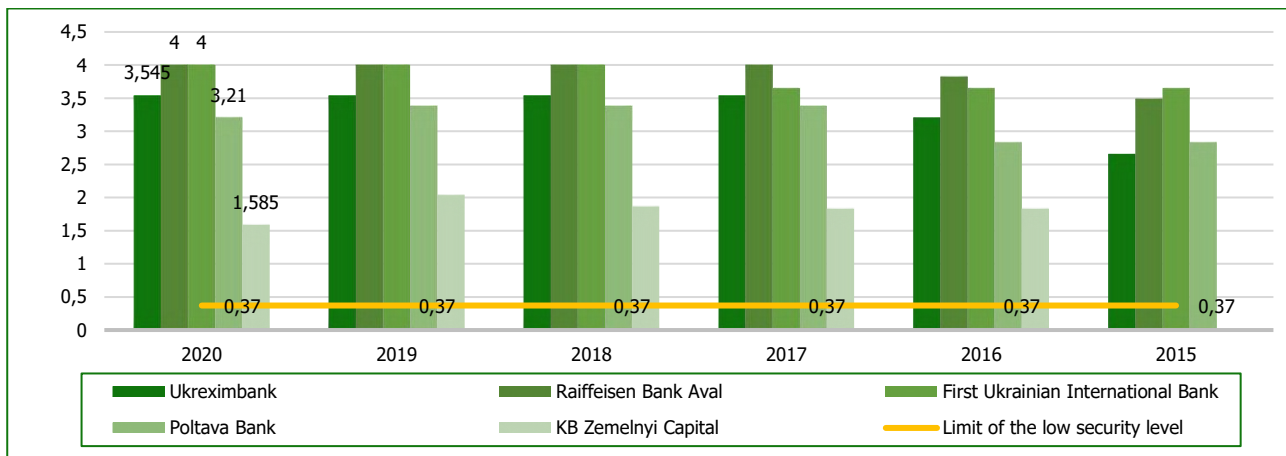


Figure 1. The level of economic security of banks in the period from 2015 to 2020.

Summarizing the obtained analytical data, we can say that the proposed method of analyzing the economic security of financial and credit institutions is relevant and appropriate to use. After all, equating only the financial component to the general level of economic security of the institution as a whole, the analysis would be incomplete. Yes, according to the data presented in Table 9, it can be argued that the actual level of economic security was obtained thanks to the additional analysis of information, marketing and personnel components of economic security.

KB Zemelnyi Capital became the confirmation of this. If only the financial component is analyzed when assessing the level of economic security, then the specified bank could obtain a sufficient level of economic security. Most of the indicators characterizing the financial component were fulfilled by the bank. But, with a comprehensive assessment of all four components proposed by the methodology, it turns out that KB Zemelnyi Capital has an average level of economic security and a negative downward trend.

Also, a confirming factor of the relevance of the proposed methodology is the decision of the Board of the NBU adopted on July 1, 2021, regarding the classification of KB Zemelnyi Capital in 2021 into the category of insolvent. The obtained data, according to the methodology, showed an insufficient level of economic security of the bank.

DISCUSSION

Assessing the economic security of financial and credit institutions is an important task facing the management staff of market participants, given the numerous challenges and threats that are constant companions of their activities. The permanent increase in the number of threats to the economic security of financial and credit states forces management to develop a methodology for assessing economic security to identify and counteract destabilizing factors.

In methods of assessing the level of economic security of financial and credit institutions, it is common to use the method of analyzing and processing scenarios, which allows for multivariate situational analysis based on the results of forecasting probable scenarios. The use of methods of multidimensional statistical analysis makes it possible to calculate the characteristics of the dynamics of the development of indicators of financial and credit institutions' economic security. They are based on patterns of changes in statistical data that have taken place in the past. Indicative methods of diagnosis consist in the comparison of actual and threshold values of indicators.

Having analyzed the existing approaches, methods and indicators for assessing the level of economic security of financial and credit institutions, it can be stated that currently there is no single, generally accepted methodology and system of indicators for determining the level of their economic security. Moreover, a significant part of the methods is based on the analysis of the financial results of the institution's activity and its profitability. Of course, financial results are the most important in determining the safe operation of an institution, but other qualitative components of economic security are no less important.

Taking into account the importance of qualitative and quantitative parameters for determining the level of economic security of financial and credit institutions, a methodology was formed that will take into account these two categories of indicators. In accordance with the components of economic security of financial and credit institutions that we have highlighted, it is proposed to investigate the financial component for the quantitative analysis and the informational, personnel and marketing component for the qualitative analysis. From the point of view of the availability of information regarding these components, a method for determining the economic security of a financial and credit institution was developed, which will be relevant for use by internal and external users of information.

Approbation of the presented methodical approach to assessing the level of economic security was carried out on the example of banking institutions, so it is advisable in further research to conduct an approbation for other subjects of the financial market with the involvement of a wider list of indicators for analysis.

CONCLUSIONS

According to the research results, a definitional clarification of the concept of "economic security of financial and credit institutions" is proposed as a prerequisite for development, which ensures stable activity, protection of economic interests, resources, legal rights, and the ability to resist external and internal threats. The specified position allows to expand the theoretical and methodological basis of ensuring the economic security of financial and credit institutions from the standpoint of the effectiveness of the strategy of sustainable development.

The proposed scoring method in the formation of a point rating of the components of economic security with the subsequent determination of the level of financial and credit institution economic security according to the Harrington scale is relevant for implementation. The methodology combines the analysis of qualitative indicators, which allows to assess the level of economic security and its individual components.

Having tested the developed methodology for assessing the level of economic security in five different banking institutions, the methodology confirmed its effectiveness and relevance. And according to the received data, one of the studied banks received a low level of economic security, which was later confirmed by the results of its activities in the next period and the NBU's decision to classify it as insolvent. The adequacy and relevance of the proposed methodology for assessing the level of economic security of financial and credit institutions have been proven.

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МЕТОДИЧНИЙ ПІДХІД ДО ОЦІНЮВАННЯ РІВНЯ ЕКОНОМІЧНОЇ БЕЗПЕКИ ФІНАНСОВО-КРЕДИТНИХ УСТАНОВ

Забезпечення економічної безпеки функціонування всіх економічних суб'єктів виступає одним із ключових завдань, вирішення якого дає можливість збереження національного суверенітету. Вітчизняна економіка з 24 лютого 2022 року потерпає від брутальної, відкритої та широкомасштабної воєнної агресії росії й перебуває в режимі постійної турбулентності, що, у свою чергу, викликає підвищену увагу до проблем безпеки на всіх рівнях господарства в умовах глобальних геополітичних та внутрішньоекономічних загроз. Саме тому це дослідження має на меті розробити методичний підхід до оцінювання рівня економічної безпеки фінансово-кредитних установ. Проаналізовано наукові підходи до визначення поняття «економічна безпека фінансово-кредитних установ» та запропоновано авторське бачення поняття через призму розвитку. Досліджено існуючі методичні підходи вітчизняних учених до оцінювання рівня економічної безпеки фінансово-кредитних установ. Розроблено методику оцінки рівня економічної безпеки фінансово-кредитних установ на основі скорингового підходу. Виділено кількісну та якісні складові економічної безпеки, які запропоновано аналізувати при дослідженні економічної безпеки. Запропоновано використовувати шкалу Харрінгтона для визначення рівня економічної безпеки фінансово-кредитної установи. Здійснено апробацію запропонованої методики на оцінці діяльності п'яти банківських установ. Згідно з отриманими даними аналізу доведено актуальність запропонованої методики оцінки рівня економічної безпеки фінансово-кредитних установ.

Ключові слова: економічна безпека, методика, рівень безпеки, фінансово-кредитні установи, фінансова система України

JEL Класифікація: A10, F50