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TAKING RISK FACTORS INTO ACCOUNT DURING ASSESSING BANK'S FINANCIAL STABILITY IN UKRAINE

UWZGLĘDNIANIE CZYNNIKÓW RYZYKA PRZY OCENIE STABILNOŚCI FINANSOWEJ BANKÓW NA UKRAINIE

Abstract

In the article, the scientific literature on risk accounting when assessing a bank's financial stability has been analyzed. The necessity of the bank's financial stability estimation methods improving with consideration of risk factors has been identified. The set of indicators – "risk indicators" - which can be calculated on the basis of the bank's annual reports, has been proposed. The proposed indicators have been tested on the example of three Ukrainian banks. The approach to interpreting the results of the risk indicators assessment and the list of recommended actions for managing the bank's financial stability with consideration of risk factors have been proposed.

Keywords: *financial stability, bank, assessment, risk, risk indicators, banking.*

Streszczenie

Artykuł analizuje literaturę naukową na temat rozliczania ryzyka podczas oceny stabilności finansowej banku. Stwierdzono konieczność poprawy metod szacowania stabilności finansowej banku z uwzględnieniem czynników ryzyka. Proponowany jest zestaw wskaźników „Wskaźniki ryzyka", które można obliczyć na podstawie rocznych raportów banku. Opracowane wskaźniki zostały przetestowane na przykładzie trzech ukraińskich banków. Zaproponowano podejście do interpretacji wyników oceny wskaźników ryzyka oraz listę zalecanych działań w zakresie zarządzania stabilnością finansową banku z uwzględnieniem czynników ryzyka.

Słowa kluczowe: *stabilność finansowa, bank, wycena, ryzyko, wskaźniki ryzyka, bankowość.*

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Statement of the problem in general outlook and its connection with important scientific and practical tasks.

The scope of risks in the global financial markets is constantly increasing. The Ukrainian financial market is characterized by a high level of political, legislative, legal risks, significant price fluctuations, crisis phenomena, and therefore it requires an optimal risk management system. That is why the importance of risk management for the banking sector is increasing. Risk management is an integral part of banking. This is due to the fact that the financial sector is an area of increased risk and ease of abuse. Therefore, the formulation of risk management policies at banks is particularly important. Typically, a separate risk management unit is created within the bank's structure. It is important for the bank to recognize that it is necessary to have effective and efficient risk management processes. To this aim, banks establish the basic principles of risk management, which in the future should protect banks from significant risks, as well as allow them to achieve the targets. Such principles form the basis of banking risk management policies.

Features of establishing the risky activity of banks were distinguished by V. Bednenko and O. Vovchak (Bednenko V., Vovchak O., 2018, p. 58-63), and modern aspects of diagnostics of financial security of banking activity are covered by Z. Pestovska (Pestovska Z., 2018, p. 93-102). Cluster approach to the risk-based assessment of risk-taking of banks' performance developed by V. Rysin and V. Chaplyga (Rysin V., Chaplyga V., 2017, p. 133-136). The necessity of ensuring the financial security of banks as a prerequisite for stable development of banking activity of Ukraine was emphasized by N. Sytnyk, L. Bashko (Sytnyk N., Bashko L., 2018, p. 198-202).

In recent years, in the economic literature, the problems of riskology in Ukraine have received considerable attention, the authors investigate the risk degree assessing, multi-criteria management decisions making, banking operations improving, risks preventing, etc. (Ilchuk P., Kots O., Bondarenko L., Lashchyk I., Yakymiv A., 2018). From a bank's perspective, a risk is a potential for underperformance or a reduction in the market value of the bank's capital due to adverse external or internal factors. Such losses may be direct (loss of income or capital) or indirect (restrictions on the bank's ability to achieve its business goals) (Ostrovskaya N., 2018, p. 117-121).

In a volatile and risky environment, efficient banking is the basis for the efficient economy functioning, and risk-taking into account in assessing the bank's financial stability is necessary to prevent problems in the banking system without which neither business nor government can be ensured today. Excellent financial system banking procedures are with successively progressing globalization, but also with anti-crisis socio-economic policy (Prokopowicz D., 2017, pp. 137-162).

Analysis of latest research where the solution of the problem was initiated.

Risk management, as well as their varieties, nature, and basics of assessment, are often researched by scientists who consider both theoretical and practical features of the analyzed phenomena and processes. Types of banking risks, assessing methods and models of their management are proposed by K.

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Buyda (Buyda K., 2017, p. 195), I. Burdenyuk and L. Volontyr (Burdenyuk I., Volontyr L., 2016, p. 113-123), N. Vygovska and V. Vygovskyi (Vygovska N., Vygovskyi V., 2016, p. 3-17), N. Grebenyuk (Grebenyuk N., 2016, p. 53-64), D. Grydzhuk (Grydzhuk D., 2017, p. 31-36), M. Marych and A. Marych (Marych M., Marych A., 2017, p. 84-88) and others. In order to assess the bank's risks, H. Bortnikov and O. Lyubich recommend using stress testing models (Bortnikov H., Lyubich O., 2016, p. 59-73).

Based on the analysis of literature sources for the definition of the concept of "banking risk" and consideration of the main approaches to the classification of banking risks, we can draw the following conclusions:

- the vast majority of researchers identify the financial component of banking risks and consider that banking risks are financial risks that lead to losses and costs;
- the considered bank risk classifications are a kind of framework for risk classification because the use of detailed classifications that would take into account absolutely all types of banking risks lead to loss of control in banking institutions;
- the necessity and criteria of classification in each case should be conditioned by a clear specialization of the bank and the tasks of analysis.

It should be noted that banking risk, together with the threat of incurring certain financial losses in case of an unfavorable situation, is at the same time a powerful stimulator of banking development that drives banks to succeed in a competitive environment. Therefore, banks should not avoid risks, but to properly manage them, because the risk is not only a loss, it is also the probability of gaining extra revenue. For the most part, banks' risks are classified according to the survey and expected results. From a practical point of view, it should be noted that in their annual reports, all banks highlight credit, liquidity, credit and currency risks. There may be other options for classification - it depends on the volume of activity of banks, the need for more thorough detailing of risks, markets where the bank operates, etc.

I. Chmutova and V. Kharytonova argue that the use of a risk-oriented approach will give banks a greater opportunity to control risks and establish financial benchmarks adequate to their current level (Chmutova I., Kharytonova V., 2017, p. 59-67). Thus, entropy analysis as a method of determining the level of risk of banking activity was offered by Yu. Kalyuzhna, V. Konev (Kalyuzhna Yu., Konev V., 2018, p. 110-114). B. Serotyuk developed a methodology for stress testing of the bank's risks (Serotyuk B., 2018, p. 13-17), and stress testing of bank risks based on macroeconomic variables was developed by N. Shulga and L. Belianko (Shulga N., Belianko L., p. 10-15). P. Shcherban proposes modeling of bank risks by main activities (Shcherban P., 2018, p. 83-87).

Ukraine's leading banks, in particular, those actively engaged in foreign economic activity, are implementing a compliance risk management system. Priority functions during the organization of compliance control are prevention and counteraction of money laundering, as well as terrorist financing, prompt resolution of conflicts of interest (Vnukova N., 2018, p. 66).

In the analyzed scientific works, insufficient attention was paid to the methods of taking risk factors into account when assessing a bank's financial stability. We consider it necessary to take into account risk factors when assessing a bank's financial stability.

Due to the constant changes in banking legislation in general and the requirements of

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the NBU for the bank's activities in particular, it is necessary to improve the methods of assessing the bank's financial stability in order to take into account current trends and economic conditions. In particular, it is necessary to take into account in assessing the bank's financial stability the risks of their activities (major ones).

Aims of paper. Methods

The article's purpose is to formulate theoretical recommendations for improving the assessment of bank's financial stability and taking into account risk factors, as well as practical approbation of the formed recommendations for improving the assessment of bank's financial stability taking into account risk factors.

Exposition of main material of research with complete substantiation of obtained scientific results. Discussion.

Assessment of a bank's financial stability is an integral step in evaluating a bank's activities at all. Through the information on the bank's financial stability, it can be concluded about the bank's effectiveness in general, its ability to develop own competitiveness in the banking market in particular. So, we note that the complexity of the banking risk assessment process is determined by the following factors:
- limited information on banking activities obtained from bank reports;
- insufficient quantity and imperfection of the developed normative documents, which allow to carry out an adequate risk assessment;
- lack of systematic information to conduct a comprehensive assessment of the bank's risk value;
- lack of unified information and analytical space, which combines all sources of information about banking systems, algorithms and methods of risk assessment;
- lack of an information-analytical system for remote analysis of bank risks that respond to the modern requirements (Sokolova E., Tsyganok Ya., 2016, p. 251-252).

The NBU primarily focuses on the values of indicators (standard ratios) and the banks' ability to comply with them, as well as on the bank's rating. Thus, in 2018, the NBU conducted a stress analysis of banks' activities, which made it possible to identify the need for individual banks to finance.

The key disadvantage of known methods for assessing a bank's financial stability is that they do not take into account external factors that influence the bank's operations, which is absolutely necessary for a risk environment. We consider that the financial ratios, with are using for bank's financial stability assessing should be supplemented with the results of risk assessment and on the basis of weighing the obtained results to calculate the integral indicator of the bank's financial stability.

According to the NBU's instructions and recommendations, banks calculate credit, currency, interest, operational and liquidity risks. Exactly about such risks, there is information in annual bank reports (in the notes to the financial reports). Therefore, it is considered appropriate to improve the assessment of banks' financial stability by introducing risk indicators. Risk indicators should include such ones:

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- R1 – ratio of liabilities geographical concentration to assets geographical concentration, %
- R2 – ratio of monetary liabilities to monetary assets,%
- R3 – ratio of average (in terms of currencies) effective liabilities interest rate to average (in terms of currencies) effective asset interest rate, %
- R4 – ratio of liabilities to assets, %
- R5 – share of administrative and other operating expenses in the total bank's expenses, %.

The proposed indicators for assessing the risk in the assessment of bank's financial stability will be simple in their calculation and interpretation, reflect the current level of riskiness of the bank's activities, allow taking into account the risks in assessing the bank's financial stability, don't require additional data collection, because information for their calculation is in bank's reports.
Following the expert survey, the following intervals were obtained to assess risk indicators (Table 1).

Table 1. Recommended risk indicators for assessing a bank's financial stability

Risk indicators	Legend	Calculation formula	Assessment intervals according to the point grade		
			3 points	2 points	1 point
Ratio of liabilities geographical concentration to assets geographical concentration	R1	$\frac{Liabilities\ in\ Ukraine}{Assets\ in\ Ukraine}*100\%$	More than 100%	From 90% to 100%	Less than 90%
Ratio of monetary liabilities to monetary assets	R2	$\frac{Monetary\ liabilities\ in\ foreign\ currency}{Monetary\ assets\ in\ foreign\ currency}*100\%$	More than 100%	From 90% to 100%	Less than 90%
Ratio of average (in terms of currencies) effective liabilities interest rate to average (in terms of currencies) effective asset interest rate	R3	$\frac{\sum Effective\ liabilities\ rates/N}{\sum Effective\ assets\ rates/K}*100\%$	More than 50%	30- 50%	Less than 30%
Ratio of liabilities to assets	R4	$\frac{Liabilities}{Assets}*100\%$	85-95%	80-85% and 95-100%	More than 100% or less than 80%
Share of administrative and other operating expenses in the total bank's expenses	R5	$\frac{Adminnistrative\ and\ other\ operating\ expenses}{Total\ expenses}*100\%$	Less than 15%	15-20%	More than 20%

Notes: N – number of effective liabilities rates used in calculating, units; K - number of effective asset rates used in calculating, unit
Source: proposed by the authors

We have calculated the proposed risk indicators for three Ukrainian banks. The input data and the calculation results are shown in Table 2.

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Table 2. The input data and the calculation results of risk indicators for three Ukrainian banks

Banks	JSC CB "PRIVATBANK"	JSC "OTP BANK"	JSC JSCB "LVIV"
Liabilities in Ukraine, thousand UAH	233 014 000	25585042	1 750 760
Assets in Ukraine, thousand UAH	251 054 000	24919004	1 981 003
Monetary liabilities in foreign currency, thousand UAH	88985000	10095754	962216
Monetary assets in foreign currency, thousand UAH	38279000	10208053	962 930
Average effective liabilities rate, %	6,5	3,09	6,9
Average effective assets rate, %	12,87	6,67	8,08
Liabilities, thousand UAH	246584000	27502332	2 169 097
Assets, thousand UAH	278048000	32 757 138	2 403 594
Administrative and other operating expenses, thousand UAH	13988000	683525	96 525
Total expenses, thousand UAH	42143000	1614720	334 021
R1 – Ratio of liabilities geographical concentration to assets geographical concentration, %	92,81	102,67	88,38
Score	**2**	**3**	**1**
R2 – Ratio of monetary liabilities to monetary assets, %	232,46	98,90	99,93
Score	**3**	**2**	**2**
R3 – Ratio of average (in terms of currencies) effective liabilities interest rate to average (in terms of currencies) effective asset interest rate, %	50,51	46,33	85,40
Score	**3**	**2**	**3**
R4 – Ratio of liabilities to assets, %	88,68	83,96	90,24
Score	**3**	**2**	**3**
R5 – Share of administrative and other operating expenses in the total bank's expenses, %	33,19	42,33	28,90
Score	**1**	**1**	**1**
Total score	**12**	**10**	**10**

Source: formed on the basis of banks' annual reports 2018 (Official site of JSC "OTP BANK", 2019; Official site of JSC JSCB "LVIV", 2019; Official site of JSC CB "PRIVATBANK", 2019); calculated by the authors

Risk indicators are calculated based on the results of 2018, because the necessary information is available only in the banks' annual reports and isn't included in the monthly data on the NBU website. Also, the impact of the risk factors in the retrospective gives more accurate results, because it is based on actual data rather than a forecast. That's why risk indicators calculated for the previous year's data can be used to assess the bank's financial stability in the current year.

Risk indicators should be used for calculating a summary score to identify the bank's activities riskiness level and the impact of risk factors that may alter the current bank's financial stability. The proposed approach to interpreting the results of the risk indicators assessment is given in Table 3.

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Table 3. Interpretation of bank risk indicators assessment results

Score	Probability of losing the current level of financial stability	Recommended actions
1-5 points	High	It is advisable to improve risk management, take measures to strengthen financial stability, especially taking into account problem areas of the bank.
6-9 points	Medium	It is advisable to improve risk monitoring and expedite a response to their impact, and to take measures to strengthen the bank's financial stability in order to reduce the negative impact of risk factors.
10-15 points	Low	At present, the impact of risk factors on the bank's financial stability is negligible, changes in the influence factors and their consequences should be monitored.

Source: proposed by the authors

Analyzed banks (Table 2) are in the third group, for which the influence of risk factors is not threatening and should not cause negative changes in financial stability. Therefore, it is necessary to monitor both the level of financial stability of these banks and the changes in the influence factors that can lead to changes in financial stability.

Conclusions.

Having analyzed the methods of assessing the bank's financial stability and the methods of assessing the bank's risks, it was found that not all of them are perfect and not always combined with the purpose of making a comprehensive assessment. Therefore, in order to improve information on the bank's financial stability, it was proposed the additional valuation indicators - risk indicators, the group of which was recommended to evaluate separately and to make adjustments to the current level of bank's financial stability and to the recommended actions. The proposed indicators are simple in their calculation and interpretations, allow taking into account the risks in assessing the bank's financial stability, and don't require additional data collection. Assessment of banks' financial stability is a necessary step in monitoring the bank's activity by their management, potential clients, and the NBU in general. Therefore, a qualitative and simple methodology for assessing the bank's financial stability, which is taking into account the impact of risk factors, will increase the effectiveness of decisions on management, cooperation, supervision of the bank, etc.
In future researches, it is advisable to focus on measures to improve the banks' financial stability and on the methods of its managing.

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