Determination of the Minimum Required Levels in Financial Security of Banks

Akbarov Bekhzokhon Ulugbek Ugli

Researcher at Tashkent State University of Economics, Tashkent City, I.Karimov Street 49, 100003 Tashkent, Republic of Uzbekistan
akbarov_b001@mail.ru

Rejabbaev Sarvar Umarkhonovich

Assistant at Tashkent State University of Economics, Tashkent city, IKarimov Street 49, 100003 Tashkent, Republic of Uzbekistan
s.rejabbaev@tsue.uz

Abstract. **The essence of the concept of "financial security of the bank" is analyzed in the article. Methods of determining the financial security of the bank are presented. The calculation is made of the main components of the bank's financial security and the total integrated indicator that determines the level of the bank's financial security.**

Keywords: Financial security of the bank, general integrated indicator financial security of the bank.

1. INTRODUCTION

At the current stage of economic development, in the conditions of the post-crisis period, the conditions for the operation of local banks in the implementation of economic activities are significantly complicated. The current state of the Ukrainian economy has changed significantly, which has led to the emergence of additional problems that require a theoretical understanding of the operation of banks and the development of practical recommendations for their solution. Such problems include ensuring financial security of the bank.

2. LITERATURE REVIEW

The greatest contribution to the development of the science of financial security at the micro level was made by scientists and practitioners, among whom the following can be noted: blank I. A. [1], Zagorodniy A. G. [7], Yarochkin V. I. [15], Senchagov V. K., Gubin B. V. [14], Pokropivny S. F. [8], Reverchuk N. I. [11], Sosnin A. S. [12] and others. The purpose of the article is to determine the minimum level of financial security of an bank in modern conditions, an bank in modern conditions.

3. ANALYSIS AND RESULTS

One of the important conditions for ensuring the stable growth of the bank and the formation of positive results of its financial activity is the existence of an effective financial security system that protects the bank from external and internal threats. During the analysis of scientific literature, it was found that the financial security of the bank in economic theory, as a rule, is considered as one of the components of economic security in two ways [1, p. 385; 8, p. 422] or as one of the components of economic security. object of independent management [5, p. 3].

The concept of "financial security" as an object of independent management is relatively new and was introduced into scientific circulation only in the last decade. It has been comprehensively and sufficiently detailed by modern researchers at the macro level in the general categories of national security" or the system of "economic security of the country". A comprehensive study of the essence of the concept of "financial security" as an object of independent management at the level of economic entities has not yet been presented in modern literature and is mainly , usually defined as one of the elements of economic security. F Bilan Pokropivny. believes that among the functional components (financial, intellectual and human technical and technological, political and legal, informational, environmental) - this financial component is the leading and decisive, because the market is an economic under the conditions of finance is "the creator of any economic system in financial management, having sufficiently studied the financial security of the bank related to ensuring its financial stability, neutralizing it financial risks, as well as

management [13, p. 535]not separate as an independent entity

According to K. Goryacheva, "financial security is a financial state characterized, firstly, by the balance and quality of the set of financial instruments, technologies and services used by the bank, secondly, by resistance to external and internal factors, and thirdly by the ability of the bank's financial system to self-manage . to ensure the development of the entire financial system [5, p. 3], fourth, financial resources in sufficient quantities, to ensure the implementation of its financial interests, goals and objectives.

Reverk Ni believes that the financial security of the bank is to protect against possible financial costs and prevent the bankruptcy of the bank, to achieve the most effective use of corporate resources. Management of any economic system under financial market conditions [11, p. 22-23] is a mechanism, because it is the leader and decisive. The same point of view on determining financial economic security is expressed by L. G. Melnik also defines it as achieving the most efficient use of corporate resources [13, p. 536].

Min W. I. considers the financial security of the bank to be the state of the most effective use of the bank's corporate resources expressed in the best values of the financial indicators of the profitability and profitability of the bank, the quality of management, the use of the bank's fixed and working capital, the structure of the bank. its capital, the level of dividend payments on the company's securities, as well as the current financial and economic status of the company and its technological and financial development prospects, as a synthetic indicator of the stock exchange value of its securities [10, p. 121]

A. Kirichenko, Yu. Who defines the financial security of the bank as the financial condition and financial stability capable of providing the bank with normal efficiency development of its activity [9, p. 84] an bank that is a condition of financial security:

- ensures financial balance and stability, solvency and its liquidity in the long term
- meets the need for financial resources for sustainable expanded reproduction
- ensures sufficient financial independence
- can withstand existing and emerging risks and threats. causing financial damage to him, changing (irrational in addition to a) capital structure, forced liquidation of the bank
- provides sufficient flexibility in making financial decisions
- ensures the protection of the financial interests of the owners of the bank.

The main principle of ensuring financial security is to control and balance the income and expenses of the economic entity. The development of methods for assessing the financial security of the bank has an important methodological importance in connection with the need for information about its financial stability. This information is necessary not only for the managers of the bank, its owners, but also for investors and creditors. It is clear that it is almost impossible to rely on investment projects and lending for an bank with an unsatisfactory financial situation and, therefore, an unsatisfactory state of financial security . Therefore, objective and timely determination of its level becomes an important element of managing the financial security of the bank

The issue of methods of assessing the financial security of the bank is controversial. First of all, it refers to the selection of criteria for assessing the financial security of the bank, the system of indicators (indicators) that describe it, and methodological approaches to determining the level of financial security. Analysis of the methods of assessing the level of financial security of the bank presented in the scientific literature allowed us to identify several main approaches.

Gladchenko T. According to M., the indicator approach is acceptable, which consists in comparing the actual values of financial security indicators with the threshold values of its level indicators. With this approach, a high level of financial security of the bank is achieved, if all sets of indicators are within the threshold values and the threshold value of each of the indicators is not reached at the expense of others [3, p. 193] Goryacheva K. It should be agreed with S. that this approach is correct, reasonable, but at the same time, the use of this approach depends on the definition of threshold values, which are fluid depending on the state of the external environment, and therefore will be different for each individual bank. [5, p. 12]. In our opinion, it should be noted that the threshold values do not differ for each specific bank, but depend on the industry of the bank.

To assess the financial security of the bank, the following indicators should be used (Table 1)

To determine the intrinsic value of financial security, we use a methodology that allows us to obtain a generalized assessment of the financial security of the bank, the sequence of its application is as follows.

1. For each indicator, its standard value is given in column 1 of table 2.

2. The degree of deviation of the indicator of a certain indicator of the bank from the standard. The following formulas are used for this:

$x_i = \frac{a_i}{a_i^n}$ if the direction of optimization of the indicator $\Rightarrow$ max (1)

Table 1: Indicators of financial security of the bank

The name of the indicator	Evaluation of the indicator	
	standard	dynamics
1	2	3
Property condition indicators		
Permanence factor of the asset	0.5	increase
Depreciation rate of fixed assets	0.5	increase
Share of receivables in the property	0.2	Reduce
Asset mobility ratio	1.0	increase
Liquidity indicators		
Current liquidity ratio or total liquidity ratio	1.25	increase
Fast (intermediate, fine) liquidity ratio	1.0	increase
Absolute liquidity ratio	0.275	increase
Indicators of financial independence		
Capital concentration ratio	0.5	increase
Financial stability coefficient	1.0	increase
Financial stability coefficient	0.85	increase
Indicators of business activity		
Turnover of funds in accounts (in days) 30 days	30 days	increase
Inventory turnover (in days) 15 days	15 days	increase
Payables turnover (in days) 30 days	30 days	increase
Capital turnover (in circulation)	1.5	increase
Turnover of mobile assets (in circulation)	1.5	increase
Turnover of total capital (in circulation)	1.0	increase
Performance indicators		
Return on Total Equity (ROA)	2.5%	increase
Return on Equity (ROE)	5.0%	increase
Profitability of fixed assets	6.0%	increase
Gross margin on products sold	20.0%	increase
Net return on goods sold	5.0%	increase

$x_i = \frac{a_i^n}{a_i}$ if the direction of optimization of the indicator   min (2 $\Rightarrow$

a_i - the actual value of the indicator

a_i^n - standard value of the indicator

3. An integral assessment of the financial security of each period determines the performance of the bank. The following formula is used for this:

$$R_F B = x_1 \pm x_2 \pm x_3 \pm \ldots \pm x_n (3)$$

When determining the assessment of financial security according to this indicator, the rating moves from a lower estimate to a higher level. In the formula, the symbol "-" is used for indicators with a negative value.

Since 21 indicators are used to assess the level of financial security, the threshold value, that is, the minimum

required level of financial security, is 21. The resulting value is simply determined. When calculating the degree of deviation in formulas 1 and 2, all values are equal to 1, since both components are equal to certain indicator standards.

The calculation of the system of financial security indicators is carried out in the materials of JSC «Hamkorbank» in different periods of activity, in particular, in 2005-2009. Table 2 shows the calculation of indicators that determine the financial security of the bank.

When analyzing indicators, special attention should be paid to two groups of indicators. Between 2005 and 2009, the company's liquidity indicators and performance indicators deteriorated significantly. Since these indicators are equal to each other, the negative dynamics of the indicators of these two groups affects the formation of the level of financial security of the bank.

Table 2: Calculation of the main indicators determining financial security

OJSC «Hamkorbank» for 2017-2021

No	The name of the indicator	Years				
		2017	2018	2019	2020	2021
Property condition indicators						
1.	Permanence factor of the asset	0.72	0.81	0.79	0.83	0.83
2.	Depreciation rate of fixed assets	0.46	0.46	0.48	0.50	0.53
3.	Share of receivables in the property	0.07	0.08	0.08	0.07	0.09
4.	Asset mobility ratio	0.38	0.24	0.27	0.20	0.21
Liquidity indicators						
5.	Current liquidity ratio	4.35	3.59	3.48	2.23	1.80
6.	Quick Liquidity Ratio	3.73	2.96	2.83	1.68	1.35
7.	Absolute liquidity ratio	2.57	1.53	1.57	0.71	0.43
Indicators of financial independence						
8.	Capital concentration ratio	0.64	0.69	0.69	0.59	0.58
9.	Financial stability coefficient	1.91	2.44	2.49	1.51	1.48
10.	Financial stability coefficient	0.93	0.94	0.94	0.92	0.90
Indicators of business activity						
11.	Turnover of funds in accounts (in days)	47.3	47.6	50.8	48.6	53.0
12.	Inventory turnover (in days)	25.6	22.9	29.7	26.9	21.9
13.	Accounts Payable Turnover (in days)	32.9	16.4	27.5	29.4	43.0
14.	Capital turnover (in circulation)	0.84	0.83	0.78	0.92	1.01
15.	Turnover of mobile assets (in circulation)	1.95	2.99	2.53	3.16	3.42
16.	Turnover of total capital (in circulation)	0.54	0.58	0.54	0.54	0.58
Performance indicators are excellent						
17.	Total Return/Loss on Equity (ROA)	0.07	0.06	0.05	-0.12	-0.04
18.	Return on Equity (ROE)	0.07	0.06	0.03	-0.21	-0.07

19.	Profitability/return on fixed assets	0.07	0.06	0.03	-0.16	-0.05
20.	Gross margin/profit on products sold	0.22	0.23	0.14	0.24	0.18
21.	Net profit/return on goods sold	0.08	0.07	0.04	-0.23	-0.07

To analyze the integral assessment of the financial security of the bank, we calculate the standard deviation of the indicators for the analyzed period of the bank's activity. Calculation of the degree of deviation of indicators is presented in the table. 3. The calculation of the integral assessment of the level of financial security of the bank is presented in the table. 4. An integral indicator of the state of the property has slight fluctuations. This group includes 4 indicators, so the minimum required level of financial security for this group is 4. As can be seen from the analysis of this group, all the obtained values exceed the standard, which is positive for the bank.

Integrated liquidity indicator also gave a positive result regarding the level of financial security of the bank, since this group includes 3 indicators (therefore, the minimum required level of financial security in terms of liquidity is equal to 3). The downside is almost a 4-fold reduction in the integral liquidity indicator. This is due to the deterioration of the structure of current assets and current liabilities of the bank.

The integral indicator of financial independence has the following dynamics: it increases in 2017-2018 and decreases in 2020-2021. In 2017-2018, JSC «Hamkorbank» made a profit as a result of its activities, which led to an increase in capital in the bank, and in 2020 and 2021, it suffered a loss, resulting in a decrease in capital. Despite these dynamics of financial independence indicators, it should be noted that in all periods, the integral indicator of financial independence exceeds the level of regulation as a component of the overall assessment of the level of financial security, since this group includes three indicators.

Small fluctuations in the integral indicator of entrepreneurial activity should also be noted. In addition, it should be noted that only in 2006 this integral indicator exceeded its normative level. In all other years, the integral indicator of entrepreneurial activity was lower than the required value, which is equal to 6 (6 indicators in the group). The worst value was obtained in 2005.

The integrated performance indicator has a significant impact on the level of financial security, the largest. In 2005-2007, this indicator decreased slightly. In addition, in 2005-2006 it exceeds the standard (5), and in 2007 it no longer exceeds. This shows that the profit in 2007 as a component of the overall level of financial security of the bank was below the planned level according to the standards of the values of this group. In 2008, the company suffered a large loss, which led to a significant decrease in the integrated performance indicator. The lowest value is taken for this indicator. Thus, the resulting loss in 2009 was less than in 2008, and then the integrated indicator slightly increased compared to the previous period.

In general, in 2005-2007, we can say that the level of financial security of the bank exceeded the threshold value. In 2008, there was a sharp decrease in the overall integral indicator of the level of financial security, which was caused by the fact that the company suffered significant losses as a result of its activities. Its formation was influenced by the financial crisis. In 2009, there was a slight increase in the level of financial security, but it remains under threat because the company has not reached the threshold level of financial security.

In order to strengthen the financial security of the bank, first of all, it is necessary to revise the composition of its income and expenses, that is, to reduce its cost part. Profitability allows the company to increase the level of financial security.

4.Conclusions

To assess the level of financial security, an indicator approach is adopted, which consists in comparing the actual values of financial security indicators with the threshold values of its level indicators.

Determining the level of financial security was carried out by calculating the total integral indicator, which includes the indicators of 6 groups. According to these groups, an integral indicator of a certain group was determined (an integral indicator of property status, an integral indicator of liquidity, an integral indicator of financial independence, an integral indicator of entrepreneurial activity, an integral indicator of performance). 21 indicators were selected for analysis, respectively, the threshold value of the level of financial security is 21.

The analysis of JSC «Hamkorbank» bank showed that in 2005-2007, the integral indicator of the bank was at a

sufficient level. As a result of the financial crisis, the integral indicator of financial security has halved. A change in the integral indicator indicates insufficient financial security of JSC «Hamkorbank», which requires the adoption of appropriate management decisions.

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