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OPTIMIZATION OF THE STRUCTURE OF ASSETS AND LIABILITIES – AS A MANDATORY CONDITION FOR ENSURING LIQUIDITY OF A COMMERCIAL BANK

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Abstract: Optimizing the structure of assets and liabilities of a commercial bank is a prerequisite for ensuring its competitiveness. This is explained by the fact that, firstly, the deterioration in the quality of the bank's assets will lead to a weakening of the inflow of funds; secondly, the excess of the growth rate of risk-weighted assets from the growth rate of regulatory capital contributes to a decrease in the bank's solvency, which negatively affects the bank's reputation; thirdly, the relatively high share of transaction deposits in the total volume of deposits increases pressure on the bank's liquidity; fourthly, an increase in the share of interbank loans in the total volume of liabilities will lead to a decrease in the financial stability of the bank, since, in this case, the level of net interest margin decreases.

The article identifies current problems associated with optimizing the structure of assets and liabilities of commercial banks in Uzbekistan and develops scientific proposals aimed at solving these problems.

Keywords: commercial bank, asset, liabilities, capital, deposit, investment, security, loan, problem loan, reserve, risk.

Introduction

According to the Strategy for Reforming the Banking System of the Republic of Uzbekistan for 2020-2025, increasing the efficiency of the banking system by creating equal competitive conditions in the financial market, lending exclusively on a market basis, reducing the dependence of banks on government resources, ensuring the financial stability of the banking system by improving the quality of the loan portfolio and risk management, compliance with moderate growth in lending volumes are priority areas for reforming the country's banking system. This necessitates the optimization of the structure of assets and liabilities of domestic commercial banks [1] .

Literature review on the topic

E. Baltensperger and S. Seely , exploring the evolution of theoretical approaches to managing the structure of assets and liabilities of commercial banks, came to the conclusion that there is a difference between "partial" and "complete" models. Partial models focus on either asset selection or liability management. They are partial because they analyze only part of the behavior of a banking firm [2] .

Developed by Dokukin A.V. The asset optimization model of a commercial bank is an operational management model and is integrated into the operational decision-making system. The developed decision-making process functions as follows:

*experts analyze the balance at the beginning of the day and determine the minimum required cash balances and correspondent accounts in other banks (thus determining the amount of temporarily available funds to be distributed);

*further, investment options are considered (issuing loans, purchasing securities, etc.);

*received loan applications are analyzed and options unacceptable in terms of risk are filtered out;

*restrictions on investments in loans are determined by the volume of acceptable loan applications, restrictions on investments in other types of assets can be determined by an expert or by limiting the total amount of risk for these assets;

*after formulating the restrictions, the data is entered into the optimization program, the main indicators are selected as criteria, restrictions are imposed on others, and the optimization process is launched [3] .

E. Prokopyeva and I. Maltsev propose creating incentives to attract long-term deposits from citizens and enterprises in order to optimize the deposit base of banks. The main tool for this is an increase in interest rates, as well as additional benefits, for example, subject to the accumulation of a certain amount in the account, providing a reduction in the interest rate on loans (including mortgages). Also, for legal entities it is necessary to develop special loan programs based on the accumulated amount in a fixed-term account [4] .

A group of academic economists argues that when assessing the liquidity of commercial banks, it is important to analyze the following aspects of their cash flow:

– assessment of the ratio of claims and obligations of commercial banks;

– analysis of cash flows under contracts whose execution dates are non-specific;

– analysis of the flow of expected funds under contracts that have not been concluded, but the likelihood of their conclusion is considered high;

– analysis of cash flows associated with unforeseen events and unplanned operations [5] .

Currently, in developing countries of the world, including Uzbekistan, the problem of hidden “holes” in the capital of commercial banks is one of the main problems associated with ensuring the sustainability of the capital base of banks.

In economic literature, under the “hole” in capital (negative net worth) refers to the negative difference between the total assets and total liabilities of the bank [6] .

Studies have shown that higher levels of capital, profitability and liquidity have a negative relationship with bank failure in the subsequent period, while worse asset quality has a positive relationship [7] .

It should be noted that the net interest margin and the level of reserve contributions intended to cover losses on assets are important indicators for assessing the effectiveness of the process of optimizing the assets of commercial banks.

The results of empirical studies showed:

*in favorable economic conditions (which reflect indicators of real GDP or, depending on the specifics of the country, indicators of industrial production,

construction, or dynamics of prices for raw materials or food products), borrowers can service their loans, and, accordingly, the level of NP decreases [8];

* Macroeconomic conditions have a significant impact on banks' credit risk, which was particularly evident during the recent financial crisis, and documents the significant impact of factors such as GDP growth, equity price indices, unemployment rates, interest rates, credit growth and the real exchange rate [9].

Discussions

Currently, large transnational banks, being universal commercial banks, have a more perfect optimal structure of assets and liabilities.

Table 1

Bank asset structure of America [1](USA)

in percentages

Assets	Years				
	2019	**2020**	**2021**	**2022**	**2023**
Cash assets	6.6	13.5	10.9	7.5	10.5
Investments in securities	19.4	24.3	31.0	28.3	27.4
Loans	40.0	32.2	30.5	33.9	32.7
Fixed assets and intangible assets	3.3	2.8	2.5	2.6	2.5
Other assets	30.7	27.2	25.1	27.7	26.9
Assets - total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

As can be seen from the data in Table 1, in 2019-2023 in the structure of Bank assets of America has a relatively high share of loans and investments in securities. This is explained by the fact that, firstly, lending is one of the main activities of the Bank of America ; secondly, Bank of America is a professional participant in the US securities market; thirdly, Bank of America ensures its current liquidity through highly liquid securities.

the Bank’s total assets of America and they will play an important role in providing liquidity to the bank.

As can be seen from the data in Table 1, in the structure of Bank assets of America has a low share of fixed assets, which is assessed as a positive phenomenon. Because banks' fixed assets are non-income generating assets.

As we have emphasized, investments in highly liquid securities are important in ensuring the Bank’s liquidity of America (Fig. 1).

[1]The table was compiled by the author based on financial statements data Bank of America .

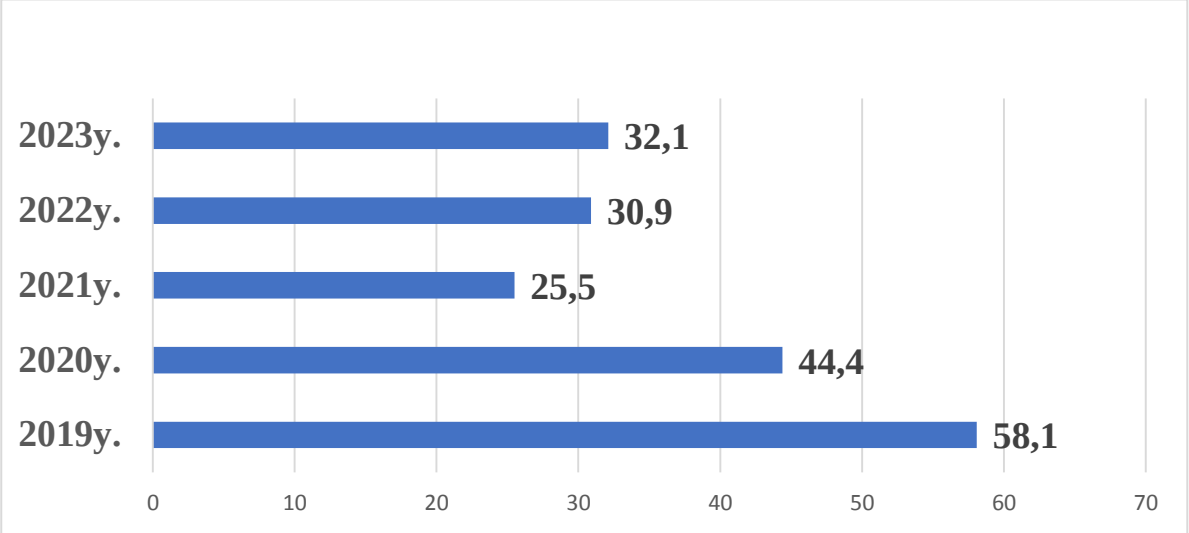

Figure 1. Share of purchased US Government securities in the volume of investments in Bank securities of America [2], percentage

As can be seen from Fig. 1, in 2019-2022, the share of purchased US Government securities in the total volume of Bank investments of America occupied a relatively large share of highly liquid securities. In addition, the value of this indicator tended to increase in 2021-2023.

table 2

Amount and level of profitability of Bank loans of America[3]

Indicators	years				
	2019	2020	2021	2022	2023
Kredits , million . US dollars	974010	909059	966737	1033085	1040390
Loan profitability level, %	4.4	3.7	3.0	3.7	5 , 5

As can be seen from the data in Table 2, in 2020-2023 the amount of Bank loans of America was trending upward. In addition, the loan growth rate in 2023 was very high compared to 2019.

As can be seen from the data in the table, the level of profitability of loans Bank of America in 2023 has increased significantly compared to 2019. This is explained by the excess growth rate of interest income on loans from the growth rate of loans in this period.

Table 3

Structure of assets of commercial banks of Uzbekistan, percentage[4]

Assets	2019	2020	2021	2022	2023
Assets	17.1	17.2	17.3	18.1	20.0
Investments in securities	1.1	1.2	2.6	4.4	5.7

[2]The figure was compiled by the author based on data from financial reports Bank of America .
[3] The table was compiled by the author based on financial statements data Bank of America .
[4]The table was compiled by the author based on data from the website www.cbu.uz (Central Bank of the Republic of Uzbekistan).

Liabilities on clients' financial instruments	0.9	0.2	0.4	0.3	0.3
Loans	76.8	76.1	73.8	71.1	68.1
Fixed assets	1.6	2.1	2.3	2.5	2.6
Accrued interest on assets	1.3	1.2	2.2	2.1	2.2
Other assets	1.2	2.0	1.4	1.5	1.1
Assets - total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

As can be seen from the data in Table 3, in the structure of assets of commercial banks in Uzbekistan, loans occupy the highest share, and after loans, cash assets occupy second place.

The data presented show that investments in securities occupy a relatively low share in the structure of assets of commercial banks of the republic. This is explained by the underdevelopment of investment operations of domestic commercial banks with securities.

The relatively high specific share of cash assets in the structure of commercial banks in Uzbekistan is explained by the fact that, firstly, banks, in order to fulfill the Central Bank's requirement to maintain current liquidity, due to the small volume of highly liquid securities in the volume of liquid assets, are forced to hold large funds in correspondent accounts Nostro accounts; secondly, transaction deposits occupy a relatively large share of the total volume of deposits.

As of January 1, 2024, the share of transaction deposits in the total volume of deposits was:

*in the National Bank – 44.4%;

*in Promstroybank – 42.2%.

The data presented show that in banks of Uzbekistan transaction deposits occupy a relatively large share of the total volume of deposits.

The large share of transaction deposits in the total volume of deposits negatively affects the current liquidity of commercial banks. Since, the current liquidity of commercial banks is defined as the ratio of highly liquid assets and transaction deposits.

It should be noted that a relatively large specific share of cash assets negatively affects the profitability of banking assets (Fig. 2).

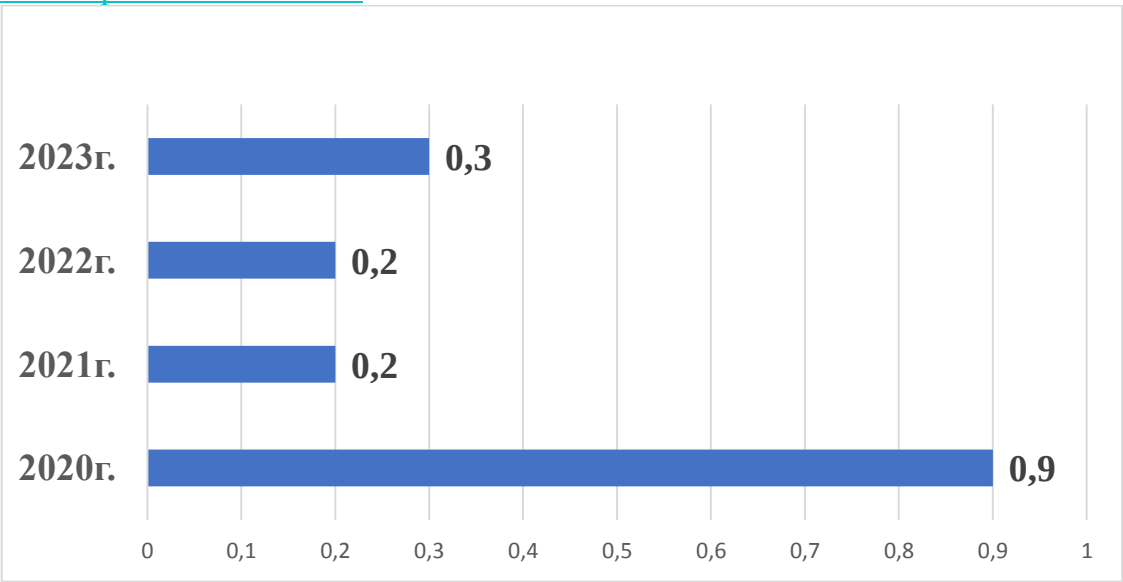

Figure 2. Share of net profit in relation to Asakabank's risk-weighted assets [5], in percent

As can be seen from Fig. 2, Asakabank's net profit occupies a very low share in relation to risk-weighted assets. This is explained by the fact that, firstly, cash assets occupy a relatively large share of the total assets of commercial banks; Secondly, the level of interest expenses relative to interest income is relatively high.

Table 4

Level of interest expenses in relation to interest income in Asakabank and Aloqabank[6]

	2019	2020	2021	2022	2023
A T “ Asakabank ”	66.6	71.4	79.1	64.3	81.4
A T “ Aloqabank ”	67.4	69.1	69.9	66.2	72.0

The data in Table 4 shows that in Asakabank and Aloqabank , in 2019-2023, interest expenses occupied a relatively large share in relation to interest income. For example, in Asakabank the level of interest expenses in relation to interest income was 81.4%, and in Aloqabank the value of this indicator was 72.0%.

It should be noted here that in transnational banks the level of interest expenses in relation to interest income is relatively low (Fig. 3).

[5]The figure was compiled by the author based on data from financial reports Asakabanka (Uzbekistan).

[6]Table Jalval muallif tomonidan AT “Asakabank” va AT “Aloqabank” ning moliyaviy hisobotlari malumotlari asosida muallif tomonidan tuzilgan.

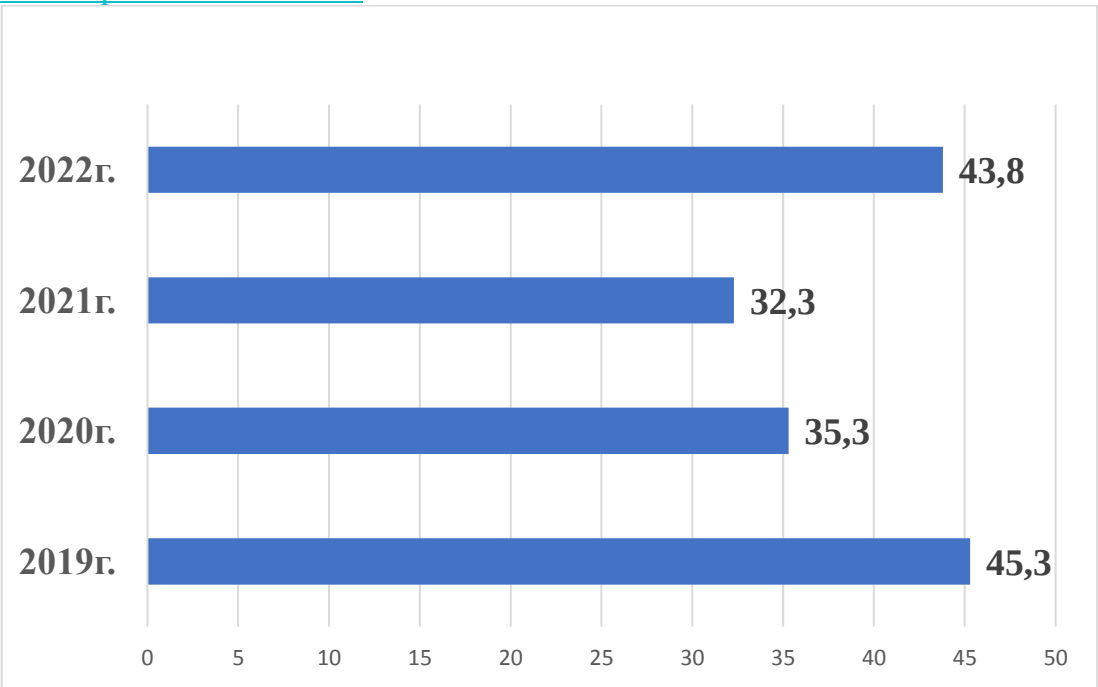

Figure 3. Level of interest expenses in relation to interest income of Deutsche Bank [7], in percent

As can be seen from Fig. 3, at Deutsche Bank, interest expenses occupy a relatively low share in relation to interest income.

Conclusions and offers

In conducting this study, we formulated the following conclusions:

* creating incentives to attract long-term deposits from citizens and enterprises is of great practical importance when optimizing the deposit base of banks;

*higher levels of capital, profitability and liquidity have a negative relationship with bank failure in the subsequent period, while worse asset quality has a positive relationship;

* Macroeconomic conditions have a significant impact on banks' credit risk, as was particularly evident during the recent financial crisis, and documents the significant impact of factors such as GDP growth, equity price indices, unemployment rates, interest rates, credit growth and the real exchange rate;

* an analysis of the structure of assets and liabilities of transnational banks showed: firstly, in 2019-2023, in the structure of assets of transnational banks, issued loans and investments in securities accounted for a relatively high share, and cash assets occupied a low share ; secondly, investments in Government securities occupied a large share of the investment portfolio of transnational banks; thirdly, the profitability of loans during the analyzed period remained high and stable;

*analysis of the structure of assets and liabilities of commercial banks in Uzbekistan showed that, firstly, in the structure of assets of commercial banks, loans occupy the highest share, and after loans, cash assets occupy second place, and investments in securities occupy a relatively low share; secondly, the relatively high share of cash assets in the structure of commercial banks in Uzbekistan is explained

[7]The figure was compiled by the author based on data from annual reports Deutsche Bank.

by the small volume of highly liquid securities in the volume of liquid assets, and the large share of transaction deposits in the total volume of deposits; thirdly, the low share of net profit in relation to risk-weighted assets is explained by the fact that, firstly, cash assets occupy a relatively large share of the total assets of commercial banks; secondly, the level of interest expenses relative to interest income is relatively high; fourthly, in banks of Uzbekistan transaction deposits occupy a relatively large share of the total volume of deposits.

In our opinion, to optimize the structure of assets and liabilities of commercial banks in Uzbekistan, it is necessary to take the following measures:

1. In order to optimize the structure of assets of commercial banks of Uzbekistan, it is necessary, firstly, to reduce the specific cash assets of banks in the total volume of assets by increasing investments in highly liquid securities by increasing the volume of repo operations of the Central Bank and directing a stable balance of transaction deposits for these purposes; secondly, to ensure quantitative compliance and timing of assets and liabilities; thirdly, to achieve the standard level of net profit in relation to the bank's risk-weighted assets by maintaining the standard level of net interest margin and ensuring that the growth rate of high-risk assets corresponds to gross assets.

2. In order to increase the stability of the liabilities of commercial banks by optimizing the structure of liabilities, it is necessary, firstly, to ensure a relatively high and stable level of time deposits in the total volume of deposits by releasing them from the mandatory reserve requirement of the Central Bank and increasing the level of net interest spread; secondly, to ensure consistency between the growth rates of regulatory capital and volatile liabilities; thirdly, to reduce the share of interbank loans in the total volume of bank liabilities by increasing the share of funds received from the sale of the bank's own securities and time deposits in the total volume of liabilities.

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