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METHODS FOR ASSESSING THE FINANCIAL STABILITY OF A COMMERCIAL BANKS

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ABSTRACT

This paper examines the key financial indicators used to assess the financial stability of commercial banks. The study focuses on profitability, efficiency, and resource utilization ratios such as return on equity (ROE), return on assets (ROA), profit-to-income, profit-to-expense, asset yield, and the efficiency of using borrowed funds. These indicators serve as essential tools for evaluating a bank's operational performance, internal financial strength, and risk exposure.

KEYWORDS

Financial stability, commercial banks, liquidity, profitability, capital adequacy, modern banking services.

Introduction

In the modern banking environment, ensuring financial stability is a critical priority for both financial institutions and regulatory authorities. Commercial banks play a central role in the economy by mobilizing savings, providing credit, and facilitating payment systems. However, due to their exposure to credit, liquidity, market, and operational risks, continuous assessment of their financial performance and resilience is essential. To evaluate a bank's financial health, various quantitative indicators are used to assess profitability, efficiency, and the effective use of assets and liabilities.

Among the most important metrics are return on equity (ROE) and return on assets (ROA), which measure a bank's profitability relative to its capital and total assets, respectively. These indicators, along with ratios such as profit-to-income and profit-to-expense, provide insight into the bank's ability to generate income and manage costs efficiently. Additionally, asset yield and the efficiency of using borrowed funds help assess how effectively a bank allocates its resources to maximize returns. Collectively, these measures offer a comprehensive view of a bank's operational strength and financial sustainability.

The systematic use of these ratios enables internal management, investors, and regulators to make informed decisions regarding the financial performance and risk exposure of credit institutions. Moreover, in the context of increasing competition, digitalization, and economic uncertainty, maintaining high levels of profitability and efficiency becomes not just a goal but a necessity for survival and growth in the banking sector. Therefore, the following analysis focuses on the interpretation and application of key financial indicators that are vital for assessing the stability and performance of commercial banks.

Literature Review

Financial stability is a fundamental condition for achieving the strategic objectives set within the bank's development framework. This stability is formed under the influence of both internal and external factors and is assessed through specific indicators and rating evaluations of the bank's activities [1].

V.P. Okhapkin views the financial stability of a bank as a dynamic and integrated characteristic that reflects the banking system's ability to transform resources and risks. He emphasizes that this stability represents a bank's capacity to withstand both internal and external environmental influences while performing its functions with maximum efficiency and minimal risk [2].

According to G.N. Beloglazova, the financial stability of a bank is defined by the extent to which its income exceeds its expenditures. Profitability is regarded as a crucial indicator of the bank's operational performance. To determine a bank's financial stability accurately, it is essential to know the sources of profit and how that profit is distributed [3].

Meanwhile, O.V. Goryukova highlights that in the modern context, financial stability is a key component of a bank's overall financial condition. She asserts that assessing a bank's stability and reliability requires an objective and systematic evaluation of its financial position. This evaluation must apply a system-based approach incorporating a balanced set of indicators that reflect levels of reliability, efficiency, and the probability of default [4].

T.P. Nikolayeva interprets financial stability as a commercial bank's ability to perform its core and emerging functions regardless of the nature of external impacts [5].

Analysis and Results

Assessing the financial stability of commercial banks is essential for ensuring the soundness of the financial system, protecting depositors, and maintaining public confidence. Financial stability reflects a bank's ability to withstand internal and external shocks without failing or needing government intervention.

Each commercial organization, when analyzing its financial condition, is required to calculate mandatory regulatory ratios. Maintaining these ratios at the required level ensures that the bank exercises control over the risks it undertakes in the course of its financial and economic activities.

To assess the mandatory regulatory ratios, the following steps are necessary:

Compare the calculated values with the regulatory requirements;

Analyze the dynamics of changes in the ratio values over time;

Identify the factors influencing these indicators.

Commercial banks are required to calculate regulatory ratios such as liquidity, capital adequacy, the maximum exposure to large credit risks, the maximum exposure to a group of related borrowers or a single borrower, the maximum amount of bank guarantees, loans issued by the bank to its own shareholders, and the ratio regulating the use of a commercial bank's capital for acquiring shares in other legal entities.

One of the key elements in ensuring the financial stability of commercial banks is compliance with mandatory regulatory ratios. These ratios serve as essential tools for identifying and mitigating potential financial and liquidity risks inherent in banking activities. In particular, capital adequacy and liquidity indicators are fundamental in evaluating a bank's solvency and capacity to meet its obligations.

Capital Adequacy Ratio (N1)

The capital adequacy ratio is designed to ensure that a bank maintains sufficient own funds to cover various types of financial risks. It determines the minimum required level of a bank's capital in relation to its risk-weighted assets. A sufficiently high level of this ratio reflects the bank's ability to absorb losses and reduces the likelihood of insolvency, thereby enhancing its financial stability.

Liquidity Ratios

To assess liquidity risk, commercial banks are required to calculate several ratios that indicate how quickly and efficiently a bank can fulfill its obligations. These include instant (N2), current (N3), and long-term liquidity ratios.

Instant Liquidity Ratio (N2) aims to reduce the risk of liquidity shortfall within a single operational day. It is calculated as the ratio of highly liquid assets to the bank's demand liabilities, reduced by 0,5 times the minimum total balance of demand deposit accounts. The minimum regulatory threshold for the N2 ratio is set at 15%.

Current Liquidity Ratio (N3) measures the risk of liquidity loss over a 30-day calendar period from the date of calculation. This ratio is computed by dividing liquid assets by demand liabilities, adjusted in the same manner as N2. The minimum required value for the N3 ratio is 50%.

The Long-Term Liquidity Ratio (N4) is designed to limit the risks associated with the allocation of funds into long-term assets. This ratio defines the maximum allowable proportion of a commercial bank's credit claims with a maturity exceeding 365 (or 366) calendar days relative to the bank's own funds and liabilities that also mature in more than 365 (or 366) days. This ratio is adjusted for the minimum residual balances on accounts with liabilities due within 365 days, as well as demand accounts of both legal entities and individuals. The maximum permitted value for the N4 ratio is 120%.

The Maximum Credit Exposure per Borrower or Group of Related Borrowers (N6) limits the concentration risk associated with lending to a single borrower or a group of economically related borrowers. It is calculated as the ratio of the total credit claims of the bank against a borrower to the bank's capital. The maximum allowed value for the N6 ratio is 25%.

The Large Credit Exposure Ratio (N7) imposes a limit on the aggregate volume of large credit risks within the bank's portfolio. It is computed as the ratio of the total amount of large credit exposures to the bank's own capital. The maximum allowed level of the N7 ratio is 800%.

The Maximum Credit Exposure to Bank Shareholders (N9.1) and the Aggregate Insider Exposure Ratio (N10.1) are aimed at limiting the provision of loans, guarantees, and sureties to shareholders and insiders of the bank. These ratios are calculated relative to the bank's own capital and are intended to mitigate the credit risk stemming from related-party transactions. The maximum thresholds are 50% for N9.1 and 3% for N10.1.

The Investment Limit Ratio (N12) governs the use of a bank's capital for acquiring equity stakes in other legal entities. This ratio helps reduce the overall investment risk of the bank by capping the share of the bank's capital allocated to such investments. The permissible maximum value of the N12 ratio is 25%.

To assess the financial soundness of commercial banks, the CAMELS rating system remains one of the most widely used and effective supervisory tools. This system, originally developed in the United States, has been adopted—often with localized modifications—by regulatory authorities in numerous countries as a standard method for evaluating the stability of credit institutions. Each country adapts

the CAMELS methodology to fit its specific regulatory and economic environment. In this regard, the Russian methodology for assessing the financial condition of credit institutions closely aligns with the classical American CAMELS model [32, p. 38]. Table 1 presents the key ratios used in assessing the financial stability of a credit institution.

No.	Name of the Ratio	Calculation Formula	Description	Normative Value
1	Capital Adequacy Ratio	$\frac{\text{Capital}}{\text{Risk-weighted assets}} \times 100\%$	Indicates the degree to which the bank's risky assets are covered by its capital	10%
2	Financial Independence Ratio	$\frac{\text{Equity}}{\text{Total assets (Balance sheet total)}}$	Reflects the bank's dependence on external borrowings	Greater than 0.5
3	Stability of Resource Base Ratio	$\left(\frac{\text{Total liabilities}-\text{Demand liabilities}}{\text{Total liabilities}}\right) \times 100\%$	Assesses what portion of the bank's resources can be considered relatively stable	70%
4	Maneuverability Ratio	$\frac{\text{Equity}-\text{Non-current assets}}{\text{Equity}}$	Shows what portion of the bank's own funds are in a mobile (liquid) form	From 0 to 1
5	Long-Term Borrowed Funds Ratio	$\frac{\text{Liabilities}}{\text{Liabilities}-\text{Equity}}$	Indicates the proportion of non-current asset financing covered by equity or long-term debt	—
6	Accumulated Capital Ratio	$\frac{\text{Reserve capital}+\text{Retained earnings}}{\text{Equity}}$	Reflects the share of retained earnings allocated for core business development	—
7	Asset Utilization Efficiency Ratio	$\frac{\text{Income-generating assets}}{\text{Total assets}} \times 100\%$	Reflects how well the bank meets the credit needs of the population and economy	—

The Capital Adequacy Ratio (CAR) is a critical measure used to evaluate a bank's ability to absorb potential losses arising from its risk exposures. It compares a bank's capital to its risk-weighted assets, which reflect the varying levels of risk associated with different asset classes. A higher CAR indicates that the bank is more financially resilient and better able to withstand credit or market shocks. Regulatory bodies such as the Basel Committee set minimum thresholds (e.g., 8% or higher) to ensure financial system stability.

Financial Independence Ratio reflects how much of the bank's total assets are financed by its own funds (equity) rather than borrowed capital. A higher value suggests that the bank is more financially independent and less reliant on external debt, which lowers financial risk. This ratio is also used to assess long-term solvency and financial autonomy. If the ratio is low, it indicates a high dependency on external liabilities, which may be riskier in volatile market conditions.

Resource Base Stability Ratio evaluates the share of the bank's funding that can be considered relatively stable. Demand liabilities (such as demand deposits) can be withdrawn at any time, which increases liquidity risk. By excluding these from the total liabilities, the ratio focuses on longer-term or more stable sources of funding (e.g., term deposits or long-term borrowings). A higher value indicates a more stable and predictable funding structure, which enhances liquidity management and reduces the risk of sudden withdrawals.

Maneuverability Ratio evaluates how much of the bank's own capital is available in liquid or flexible form, rather than being tied up in long-term, illiquid investments. A higher ratio suggests that a larger portion of equity is available for operational flexibility, short-term obligations, or investment opportunities.

Long-Term Debt Attraction Ratio shows the proportion of long-term liabilities in the financing of non-current (fixed) assets. It helps assess the structure and risk of the bank's funding sources. A higher value may indicate increased reliance on borrowed funds to finance long-term investments, which could pose financial risks in case of interest rate hikes or refinancing difficulties.

Accumulated Capital Ratio reflects the internal capital accumulation of the bank—how much of its profits have been reinvested rather than distributed to shareholders. A higher value indicates stronger internal growth potential and more resources for reinvestment in core banking activities.

Asset Utilization Efficiency Ratio measures how effectively a bank uses its total assets to generate income. Income-generating assets typically include loans and investments that yield interest or returns. A higher percentage means that a greater share of the bank's assets is actively contributing to revenue generation, which is a sign of good asset management and operational efficiency.

In the work of Professor L. A. Chaldaeva, it is proposed to assess financial stability using the following indicators (Table 2) [51, p. 215].

Table 2 Indicators for Assessing the Financial Stability of a Bank

No.	Indicator / Ratio	Calculation Formula	Description
1	**Overall Profitability Indicator**	P/E	Where *P* is the bank's profit, and *E* is equity capital. Measures return on equity (ROE).
2	**Return on Assets (ROA)**	P/A	Where *A* is the total assets. Evaluates how efficiently the bank uses its assets to generate profit.
3	**Profit-to-Income Ratio**	P/I	Where *I* is total income. Indicates the share of income converted into profit.
4	**Profit-to-Expense Ratio**	P/F	Where *F* is total expenses. Reflects cost-efficiency in generating profit.
5	**Asset Yield Ratio**	Ai/A	Where *Ai* is income-generating assets, and *A* is total working assets.
6	**Efficiency of Using Borrowed Funds**	P/L	Where *L* is borrowed funds. Shows the effectiveness of using borrowed resources to earn profit.

1. Overall Profitability Indicator (P/E)

This ratio, also known as Return on Equity (ROE), measures the return generated on the shareholders' (equity) capital.

Purpose: It shows how effectively the bank is using its equity base to generate profits.

Interpretation: A higher ROE indicates efficient use of capital and good profitability from the perspective of shareholders.

2. Return on Assets (ROA) – P/A

This indicator assesses the bank's ability to generate profit from its total asset base.

Purpose: It is widely used to evaluate how well a bank uses its assets to earn income.

Interpretation: A higher ROA means the bank is more efficient in managing its assets to produce net earnings.

3. Profit-to-Income Ratio (P/I)

This ratio measures how much of the total income earned by the bank is retained as profit.
Purpose: It reflects profitability relative to revenues.
Interpretation: A high value suggests that the bank controls its costs effectively and retains a larger share of income as profit.

4. Profit-to-Expense Ratio (P/F)

This indicator evaluates the proportion of expenses that is covered by profits.
Purpose: It shows how well the bank manages its operating costs.
Interpretation: A higher ratio indicates better cost control and operational efficiency.

5. Asset Yield Ratio (Ai/A)

This ratio determines what portion of the bank's working assets is generating income.
Purpose: It focuses on the composition and productivity of the bank's asset base.
Interpretation: A higher ratio implies that the bank's asset structure is optimized for profitability, with more resources allocated to income-generating activities like loans or investments.

6. Efficiency of Using Borrowed Funds (P/L)

This metric measures how effectively the bank uses borrowed (attracted) funds to generate profit.
Purpose: It assesses whether external funding sources (e.g., customer deposits or interbank loans) are being utilized profitably.
Interpretation: A higher value indicates that the bank is using its liabilities efficiently to increase returns.

Conclusion

Financial stability is a fundamental attribute of a commercial bank that ensures its resilience, competitiveness, and long-term sustainability in a dynamic market environment. A financially stable bank not only fulfills its obligations with minimal risk but also maintains the confidence of depositors, investors, and regulators. Stability enables a bank to attract additional resources, expand its market presence, and support the broader economy through effective financial intermediation.
In the evolving conditions of a market economy, ensuring the financial stability of commercial banks has become a key strategic priority. Financial stability is not only a reflection of a bank's current financial health but also a guarantee of its ability to withstand economic shocks, fulfill obligations, and continue contributing to the development of the financial system.
Therefore, the assessment and continuous monitoring of financial stability should be viewed as an essential tool in banking practice. It enables banks not only to identify financial vulnerabilities but also to strengthen their strategic positions. Ultimately, financial stability serves as the foundation upon which effective, trustworthy, and resilient banking institutions are built.

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