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Improving the Financial Risk Management System in Commercial Banks

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Abstract: This study examines approaches to improving financial risk management in commercial banks, with particular emphasis on credit, liquidity, capital adequacy, and data-related risks. The research analyzes the recent development of Uzbekistan's banking sector using official data from the Central Bank of the Republic of Uzbekistan and international principles developed by the Basel Committee. The results indicate that although the banking sector has strengthened its capital and liquidity positions, rapid growth in assets and lending requires more advanced risk identification and monitoring mechanisms. The study proposes an integrated financial risk management framework based on risk-based credit assessment, dynamic stress testing, early-warning indicators, risk data aggregation, and digital monitoring. The novelty of the study lies in combining quantitative banking indicators with a preventive risk-management approach adapted to the conditions of Uzbekistan's commercial banking sector.

Keywords: Financial risk, commercial banks, credit risk, liquidity risk, capital adequacy, stress testing, risk management, NPL, digital banking.

1. Introduction

The stability of the banking system is one of the fundamental conditions for sustainable economic development [1]. Commercial banks perform the critical function of transforming savings into loans and investments; therefore, deterioration in the quality of bank assets or insufficient liquidity can affect not only individual institutions but also the broader financial system [2].

The importance of financial risk management has increased as banking activities have become more complex [3]. Commercial banks are exposed simultaneously to credit, market, liquidity, operational, interest-rate and foreign-exchange risks [4]. These risks are interconnected: deterioration in borrowers' financial conditions can increase non-performing loans, reduce profitability and capital, and subsequently affect liquidity and lending capacity [5].

The Uzbek banking sector has expanded considerably in recent years [6]. According to the Central Bank of the Republic of Uzbekistan, total banking-sector assets increased from UZS 769.3 trillion on January 1, 2025 to UZS 924.8 trillion on January 1, 2026, representing approximately 20% growth [7]. During the same period, the total loan portfolio increased from UZS 533.1 trillion to UZS 604.0 trillion, while deposits increased from UZS 308.7 trillion to UZS 417.3 trillion [8].

At the same time, the banking sector has demonstrated improvements in several risk indicators. As of January 1, 2026, the regulatory capital adequacy ratio reached 18.3%,

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compared with 17.4% one year earlier, while the Common Equity Tier 1 ratio increased from 14.2% to 14.7% [9]. The Central Bank's Financial Stability Report for 2025 also reported an NPL ratio of 3% at the end of 2025, together with an LCR of 208% and NSFR of 120% [10].

However, positive aggregate indicators do not eliminate the need for further improvements in risk management [11]. Rapid credit expansion, foreign-currency exposures, concentration risks, household indebtedness and increasing digitalization require banks to move from predominantly reactive risk management toward continuous, forward-looking risk identification [12].

Therefore, the **purpose of this study** is to analyze the current financial risk-management conditions in commercial banks and develop practical approaches for improving risk identification, assessment, monitoring and mitigation.

Financial risk management has traditionally been regarded as one of the core functions of commercial banking. Its theoretical foundation is associated with the need to identify potential sources of financial losses, estimate their probability and magnitude, and establish mechanisms that allow banks to maintain financial stability under both normal and stressed conditions.

Credit risk occupies a central position in the banking literature because loans generally represent a major component of bank assets [14]. The deterioration of borrowers' repayment capacity may result in increased non-performing loans, higher provisioning requirements and reduced profitability [15]. Therefore, effective credit-risk management requires not only assessment at the origination stage but also continuous monitoring throughout the loan life cycle.

Liquidity risk has also received substantial attention. A bank may remain solvent in accounting terms while simultaneously experiencing difficulties in meeting short-term obligations. Consequently, liquidity management must incorporate both current liquidity indicators and forward-looking cash-flow scenarios.

The Basel Committee emphasizes the importance of effective risk-data aggregation and reporting [16]. According to BCBS principles, banks should possess reliable, accurate, complete and timely risk information to support management decisions, particularly during periods of stress [17].

Capital adequacy represents another important component of financial risk management [18]. Adequate capital provides banks with a buffer against unexpected losses and strengthens their capacity to absorb shocks [19]. In Uzbekistan, regulatory requirements have increasingly been aligned with Basel III principles [20]. In 2025, the Central Bank adopted updated requirements on bank capital adequacy following recommendations arising from the Financial Sector Assessment Program and aimed at strengthening resilience to stress events.

From the researcher's perspective, an important limitation of traditional risk-management approaches is their tendency to treat individual risks separately. In practice, credit, liquidity, market and operational risks can reinforce each other. Therefore, commercial banks require an **integrated risk-management system** in which risk indicators are analyzed jointly and changes in one risk category trigger reassessment of related exposures.

Another important direction is the application of digital technologies. Automated credit scoring, transaction monitoring, early-warning systems and centralized risk dashboards can allow banks to identify changes in borrower behavior faster than conventional periodic reporting.

Thus, the literature indicates a transition from static risk assessment toward dynamic, data-driven and integrated risk management. However, the practical adaptation of such

mechanisms to the conditions of Uzbekistan's commercial banking sector remains an important area for further research.

2. Research methodology

The study applies a combination of statistical analysis, comparative analysis, systemic analysis and economic interpretation. Official banking-sector statistics published by the Central Bank of the Republic of Uzbekistan were used as the primary empirical source. International regulatory principles of the Basel Committee were used as the methodological basis for evaluating risk-management approaches.

The analysis focuses on four major dimensions of financial risk: credit risk, liquidity risk, capital risk and data-related risk. Credit risk is assessed through changes in the loan portfolio and the non-performing loan ratio. Capital risk is evaluated using regulatory capital adequacy and Common Equity Tier 1 indicators. Liquidity risk is analyzed through the Liquidity Coverage Ratio and Net Stable Funding Ratio. Data-related risk is considered from the perspective of the accuracy, completeness, timeliness and integration of risk information.

Comparative analysis is used to identify changes in major banking indicators between 2025 and 2026. Particular attention is paid to the relationship between rapid balance-sheet expansion and the ability of banks to absorb potential losses.

The research also applies a preventive approach. Instead of considering financial risk management only as a mechanism for responding to already realized losses, the study treats it as a continuous process involving early identification, measurement, monitoring, stress testing and timely corrective action.

Based on the empirical findings, the researcher develops an integrated risk-management framework consisting of risk identification, quantitative assessment, early-warning monitoring, stress testing, management response and post-action evaluation.

3. Results and discussion

The expansion of the banking sector creates additional opportunities for economic financing but simultaneously increases the volume of risk exposures that must be monitored.

Table 1. Main indicators of Uzbekistan's banking sector

Indicator	January 1, 2025	January 1, 2026	Growth
Total assets, UZS trln	769.3	924.8	20%
Total loan portfolio, UZS trln	533.1	604.0	13%
Total deposits, UZS trln	308.7	417.3	35%
Total capital, UZS trln	114.8	135.3	18%
Capital adequacy ratio	17.4%	18.3%	+0.9 pp
CET1 ratio	14.2%	14.7%	+0.5 pp
NPL ratio	4.0%	3.0%	-1.0 pp

The data demonstrate simultaneous growth in banking-sector assets, loans, deposits and capital. Total assets increased by approximately UZS 155.4 trillion within one year, while the loan portfolio expanded by approximately UZS 70.9 trillion.

From the researcher's perspective, the most important finding is that **credit expansion has been accompanied by stronger capital indicators and a decline in the NPL ratio**. This indicates an improvement in aggregate resilience. However, the rapid expansion of the balance sheet means that risk-management systems must also develop at a comparable speed.

The increase in deposits by 35% is particularly important because it strengthens the funding base of banks. Nevertheless, deposit growth should be accompanied by effective asset-liability management to avoid maturity mismatches and liquidity pressures.

Capital is one of the primary mechanisms through which banks absorb unexpected losses.

The Central Bank's data show that total regulatory capital increased from UZS 124.8 trillion at the beginning of 2025 to UZS 150.9 trillion at the beginning of 2026. The capital adequacy ratio increased from 17.4% to 18.3%.

The positive movement in capital adequacy provides a stronger buffer against potential deterioration in asset quality. Nevertheless, capital adequacy should not be interpreted only as compliance with regulatory requirements.

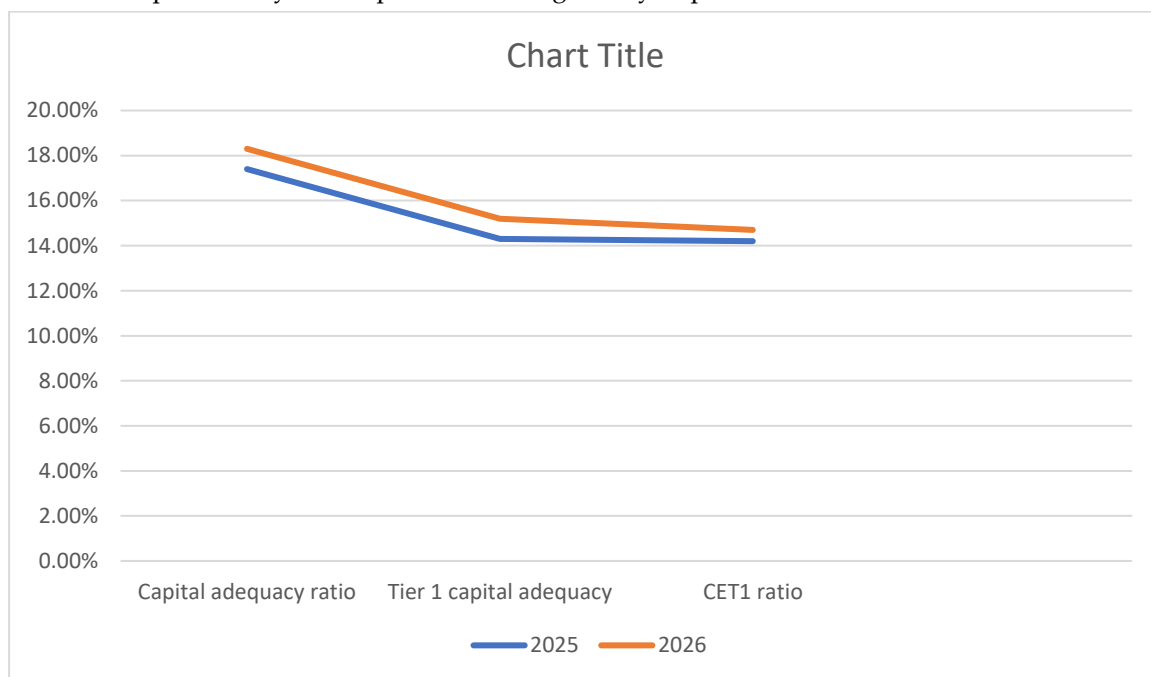


Figure 1. Capital adequacy dynamics

The figures demonstrate strengthening capital resilience. The increase in CET1 is particularly relevant because common equity represents the highest-quality form of loss-absorbing capital.

Credit risk remains one of the most significant financial risks for commercial banks because the loan portfolio constitutes a major share of banking assets.

At the beginning of 2025, total loans amounted to UZS 533.1 trillion, while NPLs amounted to UZS 21.2 trillion, representing 4.0% of the portfolio. By January 1, 2026, the loan portfolio had increased to UZS 604.0 trillion, while the NPL ratio had declined to 3.0%.

Liquidity risk represents another important component of bank stability. A bank must be able to meet deposit withdrawals, payment obligations and other liabilities even under stressed market conditions.

According to the Central Bank's Financial Stability Report for 2025, the banking sector's LCR reached 208%, while the NSFR stood at 120% as of January 1, 2026.

The development of digital banking creates both opportunities and new risks. Large volumes of real-time transactional data can improve risk identification, but fragmented information systems can make it difficult for management to obtain a consolidated view of exposures.

The Basel Committee emphasizes that effective risk-data aggregation requires accuracy, completeness, integrity, timeliness and adaptability of risk information.

Based on these principles, the researcher proposes an **Integrated Financial Risk Management Model**:

Risk identification → Data aggregation → Risk scoring → Early warning → Stress testing → Management decision → Continuous monitoring

The proposed model differs from a traditional approach because risk information is not treated as separate reports produced by different departments. Instead, credit, liquidity, capital and market-risk information should be consolidated into a common risk dashboard.

For example, deterioration in the credit quality of a particular sector should automatically influence the bank's assessment of:

- expected credit losses;
- capital requirements;
- liquidity planning;
- concentration limits;
- loan pricing.

This approach would allow banks to respond to emerging risks before they become material financial losses.

Based on the results of the research, the following mechanism can be proposed.

Table 2. Proposed integrated financial-risk management mechanism

Stage	Main instrument	Expected result
Risk identification	Risk mapping	Comprehensive identification of exposures
Risk measurement	Scoring and quantitative indicators	More accurate risk assessment
Early warning	Automated indicators	Early detection of deterioration
Stress testing	Scenario analysis	Assessment of resilience
Risk mitigation	Limits, provisioning, collateral	Reduction of potential losses
Capital planning	ICAAP and capital buffers	Improved shock absorption
Monitoring	Digital risk dashboard	Faster management decisions
Review	Back-testing and model validation	Continuous improvement

The proposed mechanism should be implemented according to the bank's size, business model and risk profile. A universal risk-management model may be inefficient because commercial banks differ significantly in terms of loan portfolios, customer structures, funding sources and technological capabilities.

The empirical results demonstrate that Uzbekistan's banking sector has strengthened its financial position. Capital adequacy increased, the NPL ratio declined, and liquidity indicators remained strong. At the same time, the rapid expansion of assets and lending increases the importance of maintaining high-quality risk-management systems.

The research findings are consistent with the Basel approach, which emphasizes that risk management should be supported by reliable data, strong governance and timely reporting.

However, the analysis also demonstrates that **strong aggregate banking indicators do not automatically imply the absence of financial risk**. Risks can accumulate beneath aggregate indicators through sector concentration, borrower concentration, maturity mismatches, foreign-currency exposure or rapid growth in particular credit segments.

Therefore, the key challenge for commercial banks is to move from a retrospective model—where risk is primarily analyzed after deterioration occurs—to a predictive model based on early-warning indicators, stress testing and real-time data.

In the researcher's assessment, the most important organizational change should be the integration of risk management into strategic decision-making. Risk departments should not function only as control units; their analysis should directly influence lending policies, pricing, capital allocation, liquidity planning and business expansion decisions.

4. Conclusion

The study examined the current state of financial risk management in commercial banks and identified key directions for its improvement.

The analysis of Uzbekistan's banking sector shows that total assets increased by 20% between January 1, 2025 and January 1, 2026, while the loan portfolio increased by 13% and deposits by 35%. At the same time, the capital adequacy ratio improved from 17.4% to 18.3%, and the NPL ratio declined from 4.0% to 3.0%.

The research concludes that an effective financial-risk management system should be based on five interconnected principles: **early identification, integrated data analysis, forward-looking stress testing, adequate capital and liquidity buffers, and continuous monitoring.**

The main scientific and practical contribution of the study is the proposed integrated risk-management framework that combines credit-risk assessment, liquidity management, capital planning, stress testing and digital risk-data aggregation.

For Uzbekistan's commercial banks, further development of automated early-warning systems, cash-flow-based credit assessment, integrated risk dashboards and scenario-based stress testing can strengthen the capacity of banks to identify and mitigate financial risks before they generate significant losses.

Ultimately, improving financial risk management should not be viewed solely as a regulatory requirement. It should become an integral part of strategic bank management, ensuring that financial expansion is accompanied by adequate risk capacity and sustainable financial stability.

REFERENCES

- [1] World Bank, *Uzbekistan Country Economic Memorandum: Towards Sustainable and Inclusive Economic Growth*. Washington, DC, USA: World Bank, 2024.
- [2] A. Saunders and M. M. Cornett, *Financial Institutions Management: A Risk Management Approach*, 10th ed. New York, NY, USA: McGraw-Hill Education, 2021.
- [3] J. C. Hull, *Risk Management and Financial Institutions*, 6th ed. Hoboken, NJ, USA: Wiley, 2021.
- [4] Basel Committee on Banking Supervision, *Minimum Capital Requirements for Market Risk*. Basel, Switzerland: Bank for International Settlements, 2019.
- [5] Basel Committee on Banking Supervision, *Principles for the Management and Supervision of Interest Rate Risk in the Banking Book*. Basel, Switzerland: Bank for International Settlements, 2022.
- [6] International Monetary Fund, *Republic of Uzbekistan: 2024 Article IV Consultation—Press Release; Staff Report; and Statement by the Executive Director for the Republic of Uzbekistan*. Washington, DC, USA: IMF, 2024.
- [7] Central Bank of the Republic of Uzbekistan, *Main Indicators of the Banking Sector as of January 1, 2026*. Tashkent, Uzbekistan: CBU, 2026.
- [8] Central Bank of the Republic of Uzbekistan, *Financial Stability Report for 2024*. Tashkent, Uzbekistan: CBU, 2025.
- [9] Central Bank of the Republic of Uzbekistan, *Capital Adequacy Indicators of Commercial Banks as of January 1, 2026*. Tashkent, Uzbekistan: CBU, 2026.

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- [10] Central Bank of the Republic of Uzbekistan, *Financial Stability Report for 2025*. Tashkent, Uzbekistan: CBU, 2026.
 - [11] Central Bank of the Republic of Uzbekistan, *Non-performing Loans of Commercial Banks: Statistical Information*. Tashkent, Uzbekistan: CBU, 2025.
 - [12] Basel Committee on Banking Supervision, *Core Principles for Effective Banking Supervision*. Basel, Switzerland: Bank for International Settlements, 2024.
 - [13] Basel Committee on Banking Supervision, *Basel Framework: Supervisory Review and Evaluation Process*. Basel, Switzerland: Bank for International Settlements, 2025.
 - [14] Basel Committee on Banking Supervision, *Basel III: Finalising Post-Crisis Reforms*. Basel, Switzerland: Bank for International Settlements, 2023.
 - [15] Basel Committee on Banking Supervision, *Principles for Effective Risk Data Aggregation and Risk Reporting (BCBS 239)*. Basel, Switzerland: Bank for International Settlements, 2013.
 - [16] F. S. Mishkin, *The Economics of Money, Banking, and Financial Markets*, 13th ed. Boston, MA, USA: Pearson, 2021.
 - [17] H. van Greuning and S. Brajovic Bratanovic, *Analyzing Banking Risk: A Framework for Assessing Corporate Governance and Risk Management*, 4th ed. Washington, DC, USA: World Bank, 2020.
 - [18] European Banking Authority, *Guidelines on ICT and Security Risk Management*, EBA/GL/2019/04, Paris, France, 2019.
 - [19] Financial Stability Board, *Enhancing Resilience of Non-Bank Financial Intermediation*, Basel, Switzerland: FSB, 2023.
 - [20] Bank for International Settlements, *Annual Economic Report 2025*. Basel, Switzerland: BIS, 2025.