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IMPROVING THE CREDIT RISK MANAGEMENT SYSTEM IN COMMERCIAL BANKS

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Abstract. This article examines the theoretical and practical aspects of improving the credit risk management system in commercial banks. Particular attention is paid to borrower creditworthiness assessment, loan portfolio monitoring, early identification of problem loans, portfolio diversification, stress testing, and the application of digital technologies. The study uses official statistical information from the Central Bank of the Republic of Uzbekistan and international principles developed by the Basel Committee. The analysis shows that the expansion of bank lending increases the importance of effective credit risk management. As of July 1, 2026, the total loan portfolio of commercial banks in Uzbekistan amounted to 642.8 trillion UZS, while non-performing loans reached 22.9 trillion UZS, representing 3.6% of total loans. Based on the analysis, an integrated approach to credit risk management is proposed, combining improved borrower assessment, data-driven credit scoring, portfolio diversification, early-warning systems, stress testing, and effective management of problem loans. The proposed approach can contribute to improving loan portfolio quality and strengthening the financial stability of commercial banks.
Keywords: commercial banks, credit risk, credit portfolio, non-performing loans, credit scoring, risk monitoring, diversification, stress testing, creditworthiness, risk management.

Annotatsiya. Ushbu maqolada tijorat banklarida kredit risklarini boshqarish tizimini takomillashtirishning nazariy va amaliy jihatlari ko'rib chiqiladi. Bunda qarz oluvchilarning kreditga layoqatliligini baholash, kredit portfelini monitoring qilish, muammoli kreditlarni erta aniqlash, portfelni diversifikatsiya qilish, stress-testdan o'tkazish va raqamli texnologiyalarni qo'llashga alohida e'tibor qaratilmoqda. Tadqiqotda O'zbekiston Respublikasi Markaziy bankining rasmiy statistik ma'lumotlari va Bazel qo'mitasi tomonidan ishlab chiqilgan xalqaro tamoyillardan foydalanilgan. Tahlillar shuni ko'rsatadiki, bank kreditlashining kengayishi kredit risklarini samarali boshqarishning ahamiyatini oshiradi. 2026-yil 1-iyul holatiga ko'ra, O'zbekistondagi tijorat banklarining umumiy kredit portfeli 642,8 trln so'mni, muammoli kreditlar esa 22,9 trln so'mni yoki jami kreditlarning 3,6 foizini tashkil etdi. Tahlillar asosida kredit xatarlarini boshqarishga kompleks yondashuv taklif etilgan bo'lib, u qarz oluvchilarni baholash, ma'lumotlarga asoslangan kredit reytingi, portfelni diversifikatsiya qilish, erta ogohlantirish tizimlari, stress-testlar va muammoli kreditlarni samarali boshqarishni o'z ichiga oladi. Taklif etilayotgan yondashuv kredit portfeli sifatini oshirish va tijorat banklarining moliyaviy barqarorligini mustahkamlashga xizmat qilishi mumkin.
Kalit so'zlar: tijorat banklari, kredit riski, kredit portfeli, muammoli kreditlar, kredit skoringi, risk monitoringi, diversifikatsiya, stress-test, kreditga layoqatlilik, riskni boshqarish.

Аннотация. В данной статье рассматриваются теоретические и практические аспекты совершенствования системы управления кредитным риском в коммерческих банках. Особое внимание уделяется оценке кредитоспособности заемщиков, мониторингу кредитного портфеля, раннему выявлению проблемных кредитов, диверсификации портфеля, стресс-тестированию и применению цифровых технологий. В исследовании использованы официальная статистическая информация Центрального банка Республики Узбекистан и международные принципы, разработанные Базельским комитетом. Анализ показывает, что расширение банковского кредитования повышает важность эффективного управления кредитными рисками. По состоянию на 1 июля 2026 года общий кредитный портфель коммерческих банков Узбекистана составил 642,8 трлн сумов, а объем проблемных кредитов достиг 22,9 трлн сумов, что составляет 3,6% от общего объема кредитов. На основе проведенного анализа предлагается комплексный подход к управлению кредитными рисками, объединяющий улучшенную оценку заемщиков, кредитный рейтинг на основе данных, диверсификацию портфеля, системы раннего предупреждения, стресс-тестирование и эффективное управление проблемными кредитами. Предлагаемый подход может способствовать повышению качества кредитного портфеля и укреплению финансовой устойчивости коммерческих банков.
Ключевые слова: коммерческие банки, кредитный риск, кредитный портфель, неработающие кредиты, кредитный рейтинг, мониторинг рисков, диверсификация, стресс-тестирование, кредитоспособность, управление рисками.

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INTRODUCTION

Credit operations constitute one of the most important activities of commercial banks and represent a major source of banking income. At the same time, lending operations expose banks to significant credit risk because borrowers may fail to repay principal or interest according to contractual terms. Therefore, the quality of credit risk management directly affects bank profitability, liquidity, capital adequacy, and financial stability.

Credit risk can be defined as the possibility of financial loss arising from a borrower's failure to fulfill contractual obligations. Effective credit risk management therefore should not be limited to managing problem loans after they arise. It should cover the entire credit lifecycle, beginning with borrower assessment and continuing through loan approval, monitoring, early-warning identification, restructuring, and recovery.

The issue is particularly relevant for Uzbekistan because the country's banking sector has experienced considerable growth in lending activity. According to the Central Bank of the Republic of Uzbekistan, as of July 1, 2026, the total loan portfolio of commercial banks amounted to 642.8 trillion UZS. Of this amount, 422.3 trillion UZS was attributable to banks with state ownership.

At the same date, non-performing loans (NPLs) amounted to 22.9 trillion UZS, representing 3.6% of the total loan portfolio. The NPL ratio of banks with state ownership was 3.9%.

These developments demonstrate that the expansion of lending should be accompanied by continuous improvement in credit risk management mechanisms.

The objective of this study is to identify the major weaknesses and development priorities of credit risk management in commercial banks and to develop an integrated mechanism for improving credit portfolio quality and stability.

The main research objectives are to:

- examine the current dynamics of credit risk in the banking sector;
- analyze the major factors affecting credit portfolio quality;
- assess the role of borrower creditworthiness and loan monitoring;
- examine the importance of portfolio diversification and stress testing;
- develop practical recommendations for improving credit risk management.

LITERATURE REVIEW

Credit risk management has been extensively examined in banking and financial literature. One of the fundamental problems in credit markets is information asymmetry between lenders and borrowers. Stiglitz and Weiss [1] demonstrated that imperfect information can lead to credit rationing and influence the allocation of financial resources.

Berger and DeYoung [2] examined the relationship between problem loans and bank efficiency and showed that deterioration in loan quality may increase bank operating costs. Their findings emphasize the importance of identifying credit problems at an early stage.

The Basel Committee on Banking Supervision emphasizes that effective credit risk management requires sound credit-granting processes, appropriate borrower assessment, continuous monitoring, adequate controls, and effective management of problem assets [3].

The implementation of IFRS 9 has further strengthened the forward-looking approach to credit risk measurement. The expected credit loss model requires financial institutions to recognize potential credit losses based on expected future conditions rather than waiting until an actual default occurs [4].

Modern research also emphasizes the role of digital technologies in credit risk management. Credit scoring, big-data analytics, artificial intelligence, and automated early-warning systems can increase the speed and accuracy of risk identification.

The literature indicates that an effective credit risk management system should combine several interconnected components: borrower assessment, credit scoring, portfolio diversification, continuous monitoring, early-warning indicators, stress testing, provisioning, and problem-loan recovery.

RESEARCH METHODOLOGY

The study applies systemic, statistical, comparative, and analytical research methods to assess the current state of credit risk management in commercial banks and identify directions for its improvement.

The information base of the study consists of official statistical data published by the Central Bank of the Republic of Uzbekistan concerning banking-sector activity, loan portfolios, and non-performing loans. International regulatory and methodological materials developed by the Basel Committee on Banking Supervision and relevant provisions of IFRS 9 are also used as theoretical and methodological sources.

Statistical analysis is applied to identify trends in the volume of bank lending and changes in non-performing loans. Comparative analysis is used to examine changes in credit risk indicators across different periods and to identify the main directions of development.

A systemic approach is applied to examine credit risk management as an integrated process rather than as a separate banking operation. The study considers the interrelationship between borrower assessment, credit approval, loan monitoring, early identification of risks, management of problem loans, and recovery procedures.

The analysis also focuses on the major factors affecting credit portfolio quality, including the borrower's financial condition, portfolio diversification, collateral quality, effectiveness of credit monitoring, problem-loan management, and capital adequacy.

At the final stage of the research, the analytical results are summarized and practical recommendations are developed. Particular attention is given to early-warning systems, modern credit scoring, portfolio diversification, stress testing, and digital monitoring.

RESULTS AND DISCUSSION

1. Current Dynamics of Credit Risk in Uzbekistan.

The banking sector of Uzbekistan has continued to expand its lending operations during 2026. According to official data from the Central Bank, the total loan portfolio increased from 604.0 trillion UZS at the beginning of 2026 to 642.8 trillion UZS by July 1, 2026.

At the same time, the volume of non-performing loans increased from 18.1 trillion UZS to 22.9 trillion UZS.

Table 1

Dynamics of Credit Risk Indicators in Commercial Banks of Uzbekistan

Indicator	January 1, 2026	April 1, 2026	July 1, 2026
Total loans, trillion UZS	604.0	623.3	642.8
NPL, trillion UZS	18.1	19.9	22.9
NPL ratio, %	3.0	3.2	3.6
Loans of banks with state ownership, trillion UZS	404.5	415.6	422.3
NPL ratio of state-owned banks, %	3.2	3.4	3.9

The data show that the total loan portfolio increased by approximately 6.4% during the first six months of 2026. At the same time, the NPL ratio increased from 3.0% to 3.6%.

This development demonstrates that credit expansion needs to be accompanied by stronger risk identification and monitoring mechanisms. Increasing lending volumes without corresponding improvements in risk management may increase future credit losses.

2. Early Identification of Credit Risk.

One of the most important elements of credit risk management is the early identification of deterioration in a borrower's financial position.

Commercial banks should monitor the following early-warning indicators:

- delays in loan payments;
- deterioration in borrower cash flows;
- declining account turnover;
- increasing debt burden;
- declining collateral value;
- deterioration in credit history;
- declining profitability;
- increasing sector-specific risks.

The implementation of early-warning systems allows banks to move from a reactive approach to a proactive risk-management model.

Instead of waiting until a loan becomes non-performing, banks should identify potential problems at an early stage and take preventive measures.

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3. Credit Portfolio Diversification.

Credit portfolio concentration represents an important source of risk. Excessive concentration in a particular sector, region, borrower group, or currency may increase the vulnerability of a bank to economic shocks.

Therefore, commercial banks should diversify their portfolios across:

- economic sectors;
- geographical regions;
- borrower categories;
- currencies;
- loan maturities;
- types of collateral.

Diversification does not eliminate credit risk. However, it reduces the probability that problems in one segment will cause significant deterioration in the overall loan portfolio.

Portfolio concentration limits should therefore be integrated into the bank's risk appetite framework.

4. Improving Credit Scoring.

Credit scoring is an important instrument for improving the quality of lending decisions.

Traditional credit assessment often relies heavily on financial statements, collateral, and historical repayment information. Modern credit assessment should combine these indicators with additional information about cash flows, debt burden, business activity, and borrower behavior.

For corporate borrowers, the following indicators can be particularly important:

- operating cash flow;
- leverage;
- debt-service capacity;
- interest coverage;
- profitability;
- liquidity;
- sector risk.

For individual borrowers, banks can consider:

- income stability;
- existing debt obligations;
- repayment history;
- employment stability;
- overall debt burden.

The combination of financial and behavioral information can improve the accuracy of credit decisions.

5. Stress Testing of Credit Risk.

Stress testing enables banks to evaluate how their loan portfolios may perform under adverse economic conditions.

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Commercial banks can develop several scenarios, including:

Scenario	Main assumption	Expected effect
Baseline	Normal economic conditions	Moderate credit risk
Adverse	Slower economic growth	Increase in defaults
Stress	Higher interest and exchange-rate risks	Higher credit losses

Stress-test results should be incorporated into credit limits, provisioning decisions, capital planning, and risk appetite.

This approach allows banks to prepare for potential shocks before they materialize.

6. Digital Technologies in Credit Risk Management.

Digitalization creates new opportunities for improving credit risk management.

Artificial intelligence, machine learning, big-data analytics, and automated monitoring systems can be used to:

- automate credit scoring;
- identify unusual borrower behavior;
- predict potential defaults;
- monitor loan portfolios in real time;
- identify early-warning signals;
- improve portfolio segmentation.

However, digital tools should not eliminate professional judgment. Data quality, model validation, cybersecurity, transparency, and human oversight remain essential components of a reliable risk management system.

7. Integrated Credit Risk Management Cycle.

Based on the research findings, an integrated credit risk management cycle is proposed. The model combines six interconnected stages that cover the entire credit lifecycle:

1. Risk Identification – identification of potential credit risks before loan approval;
2. Borrower Assessment – evaluation of the borrower’s financial position, repayment capacity and credit history;
3. Credit Decision – determination of appropriate lending conditions based on the borrower’s risk profile;
4. Portfolio Monitoring – continuous monitoring of loan performance and changes in borrower risk;
5. Early Warning – timely detection of signs of potential deterioration in credit quality;
6. Recovery and Improvement – management of problem loans and improvement of future credit decisions.

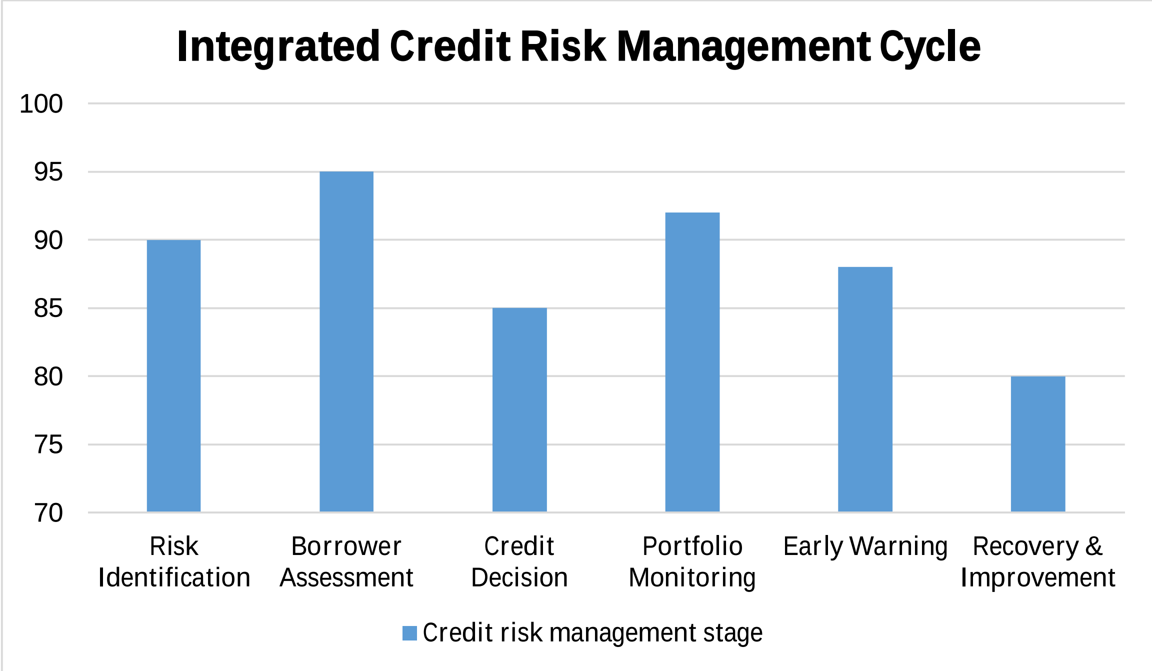

Figure 1. Integrated Credit Risk Management Cycle

The proposed cycle emphasizes that credit risk management should not be limited to the moment of loan approval. Borrower assessment and portfolio monitoring require particular attention because they determine the bank's ability to identify potential deterioration at an early stage. Early-warning mechanisms then allow banks to respond before credit problems become significant, while recovery and subsequent system improvement create feedback for future lending decisions.

8. Dynamics of the Loan Portfolio and NPLs.

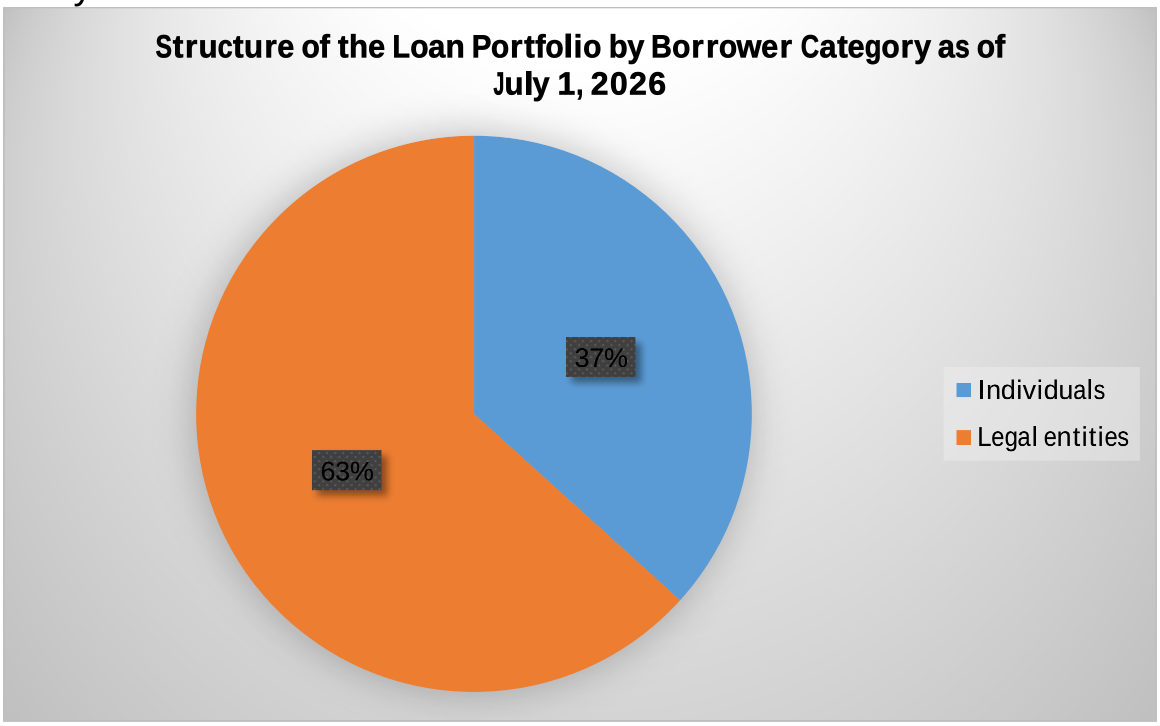

Figure 2. Structure of the Loan Portfolio by Borrower Category as of July 1, 2026

The structure of the loan portfolio shows that **63.3%** of total loans were allocated to legal entities, while **36.7%** were directed to individuals. This composition indicates a substantial concentration of credit resources in the corporate segment. Therefore, maintaining portfolio stability requires stronger assessment of corporate borrowers' financial condition, cash flows and repayment capacity, together with effective monitoring of household lending.

CONCLUSION AND RECOMMENDATIONS

The study demonstrates that improving credit risk management is an important condition for maintaining the quality and stability of commercial bank loan portfolios.

During the first six months of 2026, the total loan portfolio of commercial banks in Uzbekistan increased from 604.0 trillion UZS to 642.8 trillion UZS. During the same period, NPLs increased from 18.1 trillion UZS to 22.9 trillion UZS, while the NPL ratio increased from 3.0% to 3.6%.

These trends indicate that the expansion of lending should be supported by corresponding improvements in credit-risk management.

The following recommendations are proposed:

First, commercial banks should strengthen borrower assessment by focusing on actual cash-flow generation and debt-servicing capacity rather than relying excessively on collateral.

Second, modern credit-scoring systems should be expanded by integrating financial, behavioral, and repayment information.

Third, early-warning systems should be implemented to identify potential deterioration before loans become non-performing.

Fourth, credit portfolios should be diversified across sectors, regions, borrower categories, currencies, and maturities.

Fifth, regular stress testing should be conducted under different macroeconomic scenarios.

Sixth, digital technologies should be integrated into credit monitoring, portfolio analysis, and early-risk identification.

Seventh, specialized mechanisms for managing and recovering problem loans should be strengthened.

Overall, commercial banks should move from a traditional model of "lending – problem identification – recovery" toward an integrated model of "risk identification – assessment – prevention – monitoring – management – recovery."

REFERENCES

1. Stiglitz, J. E., & Weiss, A. (1981). Credit rationing in markets with imperfect information. American Economic Review, 71(3), 393–410.

2. Berger, A. N., & DeYoung, R. (1997). Problem loans and cost efficiency in commercial banks. Journal of Banking & Finance, 21(6), 849–870.

3. Basel Committee on Banking Supervision. (2000). Principles for the Management of Credit Risk. Basel: Bank for International Settlements.

4. Basel Committee on Banking Supervision. (2017). Basel III: Finalising Post-Crisis Reforms. Basel: Bank for International Settlements.

5. Basel Committee on Banking Supervision. (2019). Guidelines: Sound Practices – Implications of Fintech Developments for Banks and Bank Supervisors. Basel: Bank for International Settlements.

6. IFRS Foundation. (2024). IFRS 9 Financial Instruments. London: IFRS Foundation.

7. International Monetary Fund. (2025). Global Financial Stability Report: Enhancing Resilience amid Uncertainty. Washington, DC: International Monetary Fund.

8. World Bank. (2024). Uzbekistan Economic Update. Washington, DC: World Bank.

9. Central Bank of the Republic of Uzbekistan. (2026). Main Indicators of the Banking Sector. Tashkent: Central Bank of the Republic of Uzbekistan.

10. Central Bank of the Republic of Uzbekistan. (2026). Information on Non-Performing Loans of Commercial Banks. Tashkent: Central Bank of the Republic of Uzbekistan.

11. Central Bank of the Republic of Uzbekistan. (2026). Statistical Bulletin of the Central Bank of the Republic of Uzbekistan. Tashkent.

12. DeYoung, R., Gron, A., & Winton, A. (2015). Risk overhang and loan portfolio decisions: A review of the literature. Journal of Financial Intermediation, 24(3), 251–268.

13. Louzis, D. P., Vouldis, A. T., & Metaxas, V. L. (2012). Macroeconomic and bank-specific determinants of non-performing loans in Greece: A comparative study of mortgage, business and consumer loan portfolios. Journal of Banking & Finance, 36(4), 1012–1027.

14. Messai, A. S., & Jouini, F. (2013). Micro and macro determinants of non-performing loans. International Journal of Economics and Financial Issues, 3(4), 852–860.

15. Ozili, P. K. (2019). Non-performing loans and financial development: New evidence. Journal of Risk Finance, 20(1), 59–81.

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