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Article

Advancing and Strengthening Interest Rate Risk Management Practices and Priority Areas in Commercial Banking

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Abstract: This article analyzes the theoretical and practical aspects of improving the practice of interest rate risk management in commercial banks. The volatility of interest rates in global financial markets, inflation processes and macroeconomic uncertainties have a significant impact on banking activities. From this point of view, effective management of interest rate risks is an important factor in ensuring the financial stability of banks. The study examined modern methods of interest rate risk management, including GAP analysis, duration analysis and the possibilities of using derivative financial instruments. Also, the current management system in Uzbek commercial banks was analyzed and practical proposals and recommendations for its improvement were developed. The results of the study are of great importance in developing strategies aimed at strengthening the risk management system in banks, harmonizing assets and liabilities, and minimizing interest rate risks.

Keywords: Interest Rate Risk, Commercial Banks, Risk Management, Interest Rate, GAP Analysis, Duration, Asset And Liability Management, Financial Stability, Derivatives, Banking System

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1. Introduction

In the current global economic environment, high volatility of financial markets, instability of inflation rates, and changes in monetary policy conducted by central banks directly affect the activities of commercial banks. In particular, sharp changes in the dynamics of interest rates create an important financial risk for banks - interest rate risks. This, in turn, can negatively affect the profitability, liquidity, and overall financial stability of banks. [1], [2], [3]

Interest rate risk is a type of risk associated with potential losses in a bank's interest income or expenses as a result of changes in interest rates. This type of risk is closely related to the mismatch of the maturities of bank assets and liabilities, the difference in revaluation periods, and changes in market conditions. Therefore, the formation of an effective system for managing interest rate risks in the activities of commercial banks is one of the urgent tasks. [4], [5]

In recent years, large-scale reforms have been implemented in the banking system of Uzbekistan. In particular, measures are being actively taken to increase the level of capitalization of banks, transition to international financial standards, and strengthen the competitive environment. In this process, risk management, including the improvement of mechanisms for assessing and controlling interest rate risks, is of particular importance. [6], [7]

At the same time, in practice, in many commercial banks, the interest rate risk management system is not sufficiently developed, the level of use of modern financial

instruments is low, and analytical methods are limited. This reduces the stability of banks to external economic shocks. [8], [9]

The purpose of this study is to analyze the practice of interest risk management in commercial banks, identify existing problems and develop priorities for its improvement. For this purpose, modern economic analysis methods, comparative analysis and systematic approach were used in the research.

Figure 1. Major Risk Categories in Banking

Interest rate risk management issues have been widely studied by international and domestic economists. In particular, foreign researchers consider interest rate risk to be one of the most important financial risks in banking activities. According to them, changes in interest rates directly affect the interest margin of banks, the value of assets and liabilities, and their overall financial results. [10], [11]

Various methods of interest rate risk management, including GAP analysis, duration analysis, immunization strategy, and the use of derivative financial instruments, are widely covered in the scientific literature. In particular, the concept of asset and liability management (ALM) is considered an important tool for effective risk control in banks. [12], [13], [14]

Studies conducted by scientists from the CIS countries and Uzbekistan pay special attention to improving risk management in the banking system and developing mechanisms for managing interest rate risks, taking into account the characteristics of the national financial market. At the same time, it was noted that in practice there are problems such as the low level of use of modern financial instruments and the inadequacy of analytical methods. [15], [16]

Therefore, an analysis of existing scientific works shows that further improvement of the interest rate risk management system, in particular, the introduction of digital technologies and modern analytical methods, is of great importance. [17]

2. Materials and Methods

In this study, the issue of improving the practice of interest rate risk management in commercial banks was studied based on a comprehensive and systematic approach. The research methodology was based on a combination of theoretical, empirical and comparative analysis methods. [18]

Figure 2. Best Practices for Credit Risk Management in Banks

The study was based on a systematic approach. According to this approach, interest rate risks were analyzed not as a separate element of bank activities, but as an integral part of the asset and liability management system. Also, through a comprehensive approach, macroeconomic and microeconomic factors affecting interest rate risks were studied in an interconnected manner. [19]

The following scientific methods were used in the research process:

a. The analysis and synthesis method was used to identify the economic essence of interest rate risks, their types and causes of origin. This method generalized various theoretical approaches.
b. Comparative analysis was used to compare the activities of Uzbek banks with the practice of managing interest rate risks in the banking system of developed countries. This identified advanced practices and existing shortcomings.
c. Statistical analysis method was used to assess the level of interest rate risks based on the financial indicators of banks (interest income, interest expenses, margin, composition of assets and liabilities).
d. Economic and mathematical modeling was used to assess the impact of changes in interest rates on bank activities. Various scenarios (scenario analysis) were developed using this method.

Expert assessment method was used to identify problems in managing interest rate risks and ways to solve them based on the opinions of banking specialists.

The following special tools were used in the study to identify and assess interest rate risks:

a. GAP analysis (repricing gap analysis) - served to identify the imbalance between the revaluation periods of assets and liabilities. This method made it possible to identify the main factors affecting the bank's interest margin.
b. Duration analysis (duration analysis) - was used to assess the impact of changes in interest rates on the value of assets and liabilities. This method determined the sensitivity of bank capital to interest rate risks.

c. Immunization strategy - studied the possibilities of reducing risks by adjusting the duration of assets and liabilities.
d. Scenario analysis (scenario analysis) - served to assess how the bank's activities would be affected when interest rates changed in different directions.
e. Stress testing (stress testing) - was used to assess the stability of the bank in conditions of sharp economic changes. [20]

The following were used as sources of information for the study:

a. Official data of the Central Bank of the Republic of Uzbekistan; [21]
b. Financial reports of commercial banks;
c. Reports of international financial organizations (IMF, World Bank); [22]
d. Scientific journals and articles;
e. Statistical collections and analytical reports.

The study has some limitations, which include:

a. The lack of complete data on all commercial banks;
b. The limited ability to fully analyze the derivative financial instruments market due to its underdevelopment;
c. The estimation of some indicators is based on estimates.

The selected methodology fully meets the research objectives and allows for a comprehensive assessment of the interest rate risk management system. The proposals developed on the basis of this approach serve to increase the effectiveness of risk management in commercial banks. [1], [4], [18], [20]

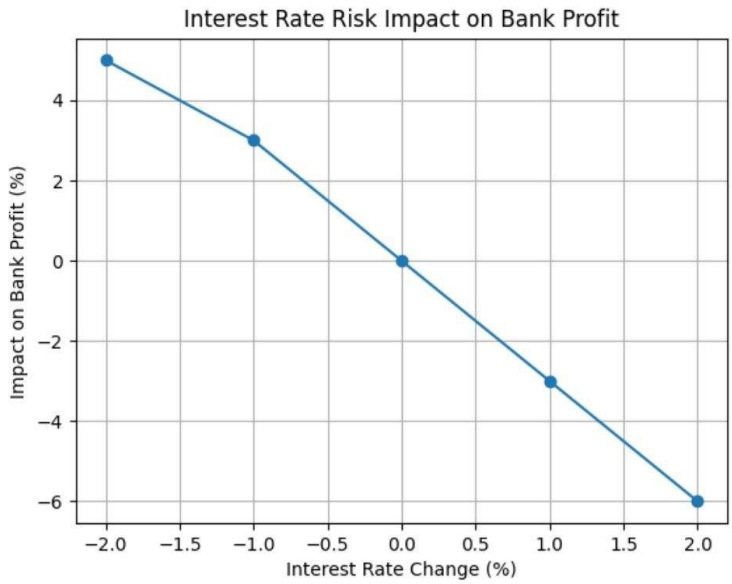

Figure 3. Interest Rate Risk Impact on Bank Profit

3. Results

As a result of the conducted research, the current state of interest rate risk management practice in commercial banks was assessed and important scientific conclusions were drawn on its improvement.

1. Proposal to Improve the Public Offering of Commercial Banks' Shares through the Stock Exchange and the Successful Implementation of an Initial Public Offering (IPO) to Increase Bank Capital, Enhance Their Activity in the Capital Market, and Strengthen Their Resilience to Interest Rate Risk

This proposal was taken into account and implemented during the bank's preparation process for privatization through an Initial Public Offering (IPO) of its shares on the

national stock market. As a result of its implementation, the bank's investment portfolio increased by **65 percent in 2025** compared to **2024**.

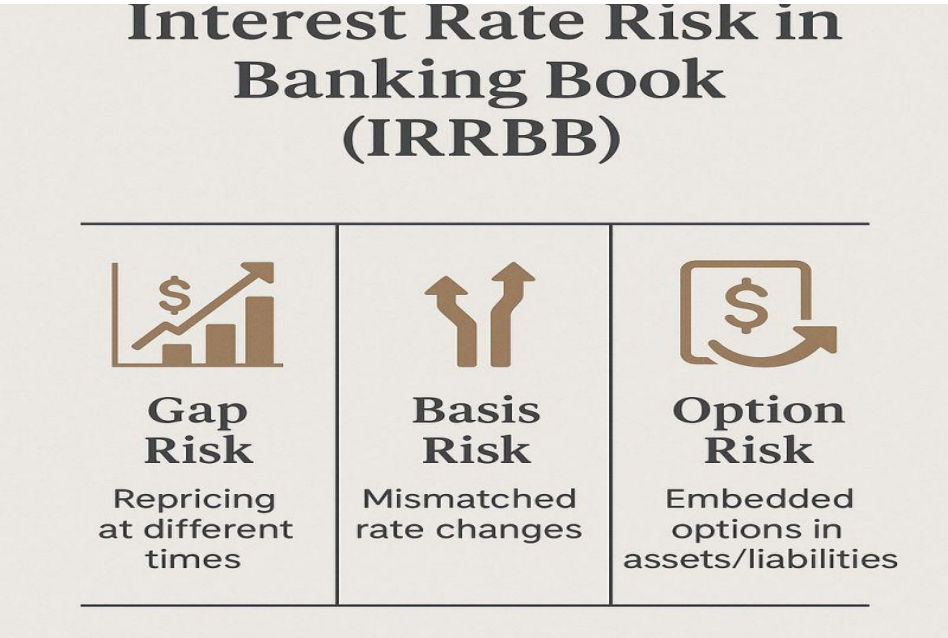

Figure 4. Main Components of Interest Rate Risk in the Banking Book (IRRBB)

2. Proposal to Enhance the Practical Development of the Interest Rate Risk Management System of Commercial Banks within the Framework of the Risk Management System Requirements Developed by the Central Bank in Line with Modern Banking Standards

This proposal was taken into account and implemented in the establishment of the Bank Risk Management Committee, the development of the Bank Environmental and Social Risk Management Policy, and the enhancement of the activities of the Risk Management Department. As a result, the quality composition of the bank's loan portfolio increased by 45.3 percent in 2025 compared to 2024.

4. Discussion

The sensitivity of bank assets and liabilities to interest rates was assessed through duration analysis. The analysis results showed the following: [12], [13]

a. there are cases when the duration of assets is higher than that of liabilities;
b. this situation can lead to a decrease in the value of bank capital when interest rates increase;
c. banks do not use sufficient strategies to manage duration.

Shortcomings of risk management practices

During the research, the following main problems were identified: [15], [16], [17]

a. overreliance on traditional methods in assessing interest rate risks;
b. limited use of modern financial instruments (derivatives);
c. low level of digitization of the risk management system;
d. lack of qualified personnel;
e. insufficient use of stress tests and scenario analyses.

Priority areas for improvement

Based on the results obtained, the following priority areas for improving interest rate risk management were developed:

1. Strengthening the ALM (Asset-Liability Management) system

Reducing risks by ensuring the adequacy of assets and liabilities in terms of term and volume. [4], [13]

2. Introducing modern analysis methods

Regular use of GAP, duration, stress tests and scenario analyses. [1], [12], [20]

3. Use of digital technologies

Identify and forecast risks through Big Data and analytical platforms. [19], [22]

4. Development of derivative financial instruments

Hedging risks through the use of interest rate swaps, futures and options. [5], [9], [14]

5. Increasing human resources potential

Improvement of the system of training and retraining of specialists in the field of risk management.

6. Adaptation to international standards

Improvement of the risk management system in accordance with Basel requirements. [1], [15]

Scientific and practical significance

The results obtained serve to increase the efficiency of interest rate risk management in the banking system. Proposed measures:

a. Strengthen the financial stability of banks;
b. Help maintain stable interest margins;
c. Increase resilience to external economic shocks.

5. Conclusion

In conclusion, the interest rate risk management system in commercial banks is one of the most important factors ensuring the stability and efficiency of banking activities. In the current global economic environment, high volatility in interest rates, increasing inflationary pressure, and uncertainties in financial markets pose new requirements and tasks for banks. This requires the organization of effective interest rate risk management at a strategic level. [3], [22]

The conducted research has shown that, although the interest rate risk management system in Uzbek commercial banks has been formed to a certain extent, its practical effectiveness does not fully meet current requirements. In particular, it was revealed that there are problems such as a mismatch in terms of terms between assets and liabilities, a high level of sensitivity to changes in interest rates, and insufficient application of modern risk management instruments. These circumstances can negatively affect the interest margin of banks and pose a threat to their financial stability. [6], [8]

At the same time, the results of the study showed the need for a comprehensive and systematic approach to improving interest rate risk management. First of all, it is important to deeply improve the asset and liability management (ALM) system, ensuring their proportionality in terms of duration and volume. This will allow banks to take a stable position in relation to changes in interest rates. [4], [13]

Secondly, it is necessary to widely introduce modern analytical methods, including GAP analysis, duration analysis, stress testing and scenario analysis into practice. These methods will allow banks to assess interest rate risks in advance, predict potential losses and take appropriate measures. [12], [20]

Thirdly, it is important to modernize the risk management system through the use of digital technologies and innovative solutions. Big Data, artificial intelligence and automated analysis systems will serve to make the process of identifying and managing interest rate risks more effective. [19], [22]

Fourth, it is necessary to expand the possibilities of hedging interest rate risks by developing the use of derivative financial instruments. This will increase the resilience of banks to financial risks. [5], [9], [14]

Fifth, it is an important task to form a risk management culture in the banking system and improve the skills of specialists. The availability of qualified personnel is of decisive importance in modern risk management. [16], [17]

In general, improving the interest rate risk management system in commercial banks is of great importance not only for the stability of individual banks, but also for the stability of the entire financial system. The implementation of the proposals and recommendations developed within the framework of the study will serve to increase the

competitiveness of banks, strengthen financial stability, and ensure sustainable growth in the economy. [1], [6], [7]

In the future, further deepening scientific research in this area, extensive study of international experience, and the development of innovative approaches suitable for the national banking system will remain one of the urgent tasks. [15], [18], [21]

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