

### METHODS AND TOOLS OF CREDIT RISK ASSESSMENT IN THE MODERN SYSTEM OF RISK MANAGEMENT

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#### Annotation

This topic explores the essential practices and innovations in assessing credit risk within contemporary risk management, with a particular focus on financial institutions and markets like Uzbekistan's. Credit risk assessment is central to determining a borrower's likelihood of default and mitigating potential financial losses. Modern approaches leverage a mix of quantitative and qualitative tools, including statistical modeling, machine learning, and credit scoring systems, combined with more traditional evaluations like industry analysis and borrower interviews. These methods improve decision-making, operational efficiency, and the precision of risk evaluations. In the context of Uzbekistan, where economic reforms aim to strengthen the financial sector, credit risk assessment has a strategic importance aligned with national goals, such as those in the Uzbekistan 2030 Strategy. Regulatory compliance, coupled with these advanced tools, helps foster a more resilient financial environment, supportive of sustainable growth and financial inclusion. However, the topic also highlights challenges and criticisms, such as the risks of overreliance on technology and the need for balanced human judgment. In emerging markets, data limitations or biases in algorithms can compromise the accuracy of risk models, emphasizing the importance of combining advanced tools with local knowledge and traditional assessments. Overall, this topic underscores the vital role of effective credit risk assessment in building a stable financial system that can adapt to new risks and support economic development.

**Keywords:** Credit risk assessment, risk management, financial institutions, qualitative tools, Uzbekistan 2030 Strategy, machine learning in finance, credit scoring models, regulatory compliance, financial stability

### Introduction

In today's dynamic financial landscape, effective credit risk assessment is a critical component of risk management, allowing institutions to safeguard against potential losses while promoting economic growth. Credit risk, the possibility that a borrower will fail to meet financial obligations, poses significant challenges for banks and financial institutions. This risk has become increasingly complex with the rapid evolution of financial products, technological advancements, and regulatory expectations. Modern methods of credit risk assessment combine quantitative tools, such as statistical modeling and machine learning algorithms, with qualitative evaluations like borrower interviews and industry analysis. These advanced tools enable institutions to analyze vast amounts of data accurately and efficiently, enhancing their ability to predict and respond to credit risk.

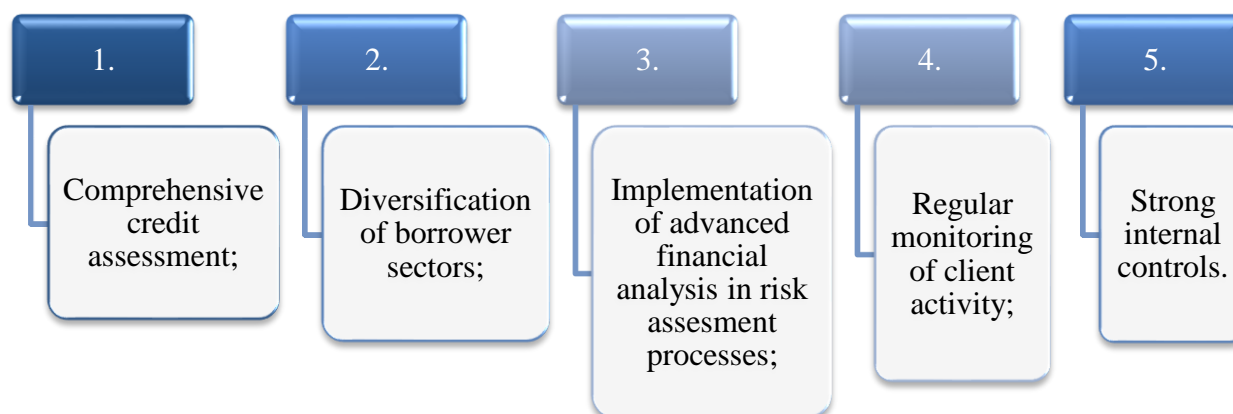
In the context of Uzbekistan, where the financial sector is growing and aligning with strategic goals like the Uzbekistan 2030 Strategy, credit risk assessment takes on added significance. By adopting modern assessment methods and ensuring compliance with national policies, Uzbek financial institutions can contribute to a resilient, inclusive financial system that supports sustainable economic development. However, there are also concerns about potential overreliance on technology, data quality limitations, and the high costs associated with these tools, highlighting the need for a balanced approach that incorporates human judgment. This study examines the methods and tools of credit risk assessment within the modern system of risk management, focusing on Uzbekistan's financial market. It seeks to provide insights into the role of these practices in fostering a stable financial environment that can adapt to changing risks and support national economic objectives.

### Analyze

The practice of credit risk assessment plays a pivotal role in modern financial risk management. Credit risk, which refers to the likelihood that a borrower will default on their obligations, is an inherent challenge that financial institutions must continuously address. As global financial markets evolve and economies undergo reforms, including those in Uzbekistan, the need for advanced, accurate, and adaptable risk assessment tools becomes even more

critical. This analysis explores the current methods of credit risk assessment, their advantages, challenges, and relevance to Uzbekistan's financial market, which is undergoing significant modernization aligned with national development goals. Credit risk assessment is a dynamic and multifaceted process that requires a balance of advanced technological tools, human expertise, and regulatory compliance. In Uzbekistan, as the financial sector grows and integrates with global markets, the adoption of sophisticated risk assessment methods will play a critical role in ensuring stability, fostering financial inclusion, and achieving the goals set out in the Uzbekistan 2030 Strategy. However, these tools must be used judiciously, with a clear understanding of their limitations and potential risks, particularly concerning data quality, algorithmic bias, and transparency. A well-rounded approach, combining both technological advancements and human judgment, is key to building a resilient, inclusive financial system capable of adapting to both present and future challenges.

1. *The Importance of Credit Risk Assessment:* Credit risk assessment is foundational to the stability of financial institutions and the broader economy. For banks, accurately assessing the risk of default ensures that they can make informed lending decisions, manage their capital appropriately, and mitigate potential losses. An ineffective or overly cautious approach to credit risk may result in missed lending opportunities, while overly optimistic assessments can lead to defaults, which in turn damage institutional and systemic stability. In countries like Uzbekistan, where financial markets are transitioning from a state-controlled model to a more market-oriented one, the need for robust credit risk assessment tools is even more critical. With reforms aimed at expanding access to finance, supporting small and medium-sized enterprises (SMEs), and increasing financial inclusion, financial institutions need reliable tools to assess and manage risks without stifling economic growth. The strategic objectives laid out in Uzbekistan's 2030 Strategy further emphasize the importance of building a resilient financial sector that can support long-term growth, and credit risk assessment plays a central role in this process.



**Figure 1. Strategies used by commercial banks to effectively manage credit risk<sup>1</sup>**

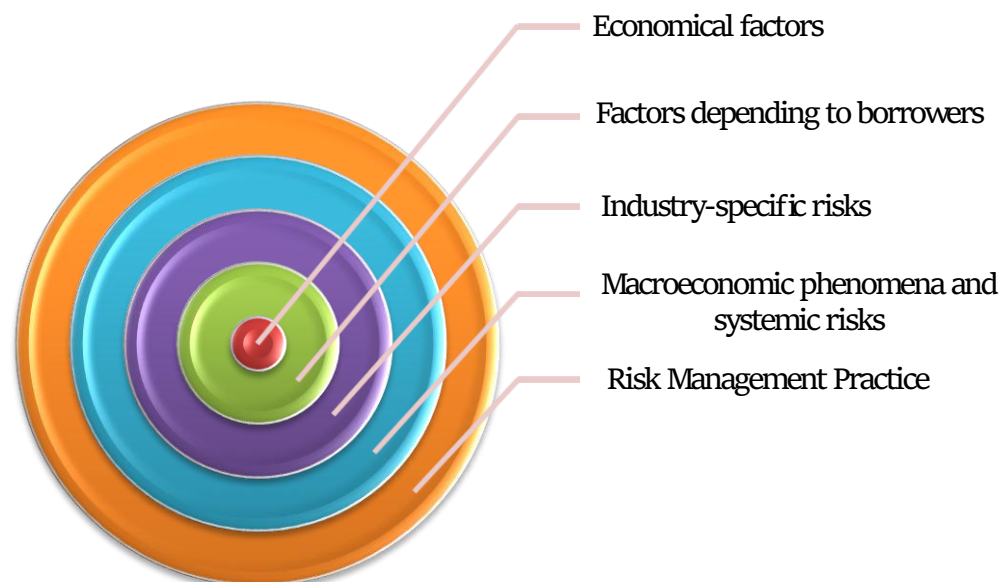
2. *Technological Advancements in Credit Risk Assessment:* Technological advancements have revolutionized the way financial institutions assess credit risk. Historically, credit risk assessment relied heavily on qualitative assessments and basic financial ratios. Today, sophisticated quantitative models, machine learning algorithms, and artificial intelligence (AI) techniques are used to analyze large volumes of data from multiple sources, providing a more comprehensive and accurate view of risk.

3. *Data Quality and Availability:* In many emerging markets, including Uzbekistan, one of the main challenges is the availability and quality of data. Reliable, comprehensive data on borrowers, especially SMEs and individuals, may be lacking or insufficient for the accurate application of advanced credit risk models. Furthermore, financial institutions may face difficulties accessing up-to-date information, particularly in rural or underserved areas where banking and credit histories are less common. In such environments, overreliance on automated systems may lead to incorrect assessments, such as underestimating or overestimating a borrower's creditworthiness. Therefore, a robust infrastructure for collecting and validating data is essential for the successful implementation of modern risk assessment methods.

4. *Bias and Transparency Issues:* Machine-learning algorithms, while powerful, are often seen as "black boxes" because they can be difficult to

<sup>1</sup> Prepared by the author as a result of research.

interpret. The risk of bias—whether from incomplete data, historical inequities, or algorithmic design—can skew outcomes and lead to unfair credit decisions. In markets like Uzbekistan, where economic inequalities may be pronounced, the potential for bias in credit assessments could exacerbate disparities in access to finance. Thus, financial institutions must ensure that their credit risk models are transparent, fair, and subject to regular audits to mitigate these risks. Ensuring that AI-driven models account for local economic realities, regulatory standards, and ethical considerations is vital to maintaining trust and credibility within the financial system.



**Figure 2. Generalized factors affecting credit risk<sup>2</sup>**

5. *Regulatory Compliance and Strategic Alignment:* In Uzbekistan, where the financial sector is undergoing structural changes to align with international standards, credit risk assessment tools must comply with national regulations. The Uzbekistan 2030 Strategy lays out a framework for financial stability, improved access to finance, and enhanced transparency, which requires a comprehensive approach to credit risk management.

6. *Aligning Risk Assessment with National Goals:* The 2030 Strategy aims to create a more diversified financial system that includes digital finance, microfinance, and support for SMEs. To achieve these goals, financial

<sup>2</sup> Prepared by the author as a result of research.



institutions must adopt risk assessment tools that balance innovation with caution. Ensuring that credit risk tools comply with regulatory standards is crucial for maintaining systemic stability. Additionally, compliance with global standards, such as those set by the Basel Committee on Banking Supervision (BCBS), is necessary to maintain Uzbekistan's competitiveness in the global financial market.

*7. Building Trust in the Financial System:* For Uzbekistan to build a financially inclusive system, where all segments of society have access to credit, the public must trust the institutions offering these services. Credit risk assessments that are perceived as fair and transparent are key to building this trust. Thus, any technological advancements in risk assessment must also prioritize clear communication, customer education, and regulatory oversight to prevent issues such as exclusionary lending practices.

### Conclusion

Credit risk assessment plays a critical role in modern financial risk management, ensuring the stability and resilience of financial institutions while fostering economic growth. In Uzbekistan, where the financial sector is undergoing significant reforms and aligning with national development goals outlined in the Uzbekistan 2030 Strategy, the need for effective credit risk management is paramount. This study has explored the evolving methods and tools of credit risk assessment, including both traditional qualitative methods and advanced quantitative techniques, such as machine learning and big data analytics, which are transforming the financial landscape worldwide. The integration of technological advancements, such as predictive analytics, AI, and machine learning, offers substantial benefits in improving the accuracy, speed, and efficiency of credit risk assessments. These technologies enable institutions to handle large volumes of data, identify patterns, and predict risks in real time. In the context of Uzbekistan, such tools are crucial for enhancing decision-making capabilities, particularly in a developing economy where data may be scarce and market conditions can shift rapidly.

However, the adoption of these technologies is not without challenges. The lack of comprehensive data infrastructure in Uzbekistan, the potential for algorithmic biases, and the high cost of implementing advanced risk

management systems are significant barriers. These challenges underscore the importance of combining technological tools with human expertise, ensuring that credit risk assessments are not solely data-driven but also account for local economic conditions, regulatory requirements, and borrower-specific factors. This balanced approach is essential to avoid overreliance on algorithms that may miss contextual nuances.

In alignment with the Uzbekistan 2030 Strategy, which aims to create a resilient and inclusive financial system, the findings of this thesis suggest that modernizing credit risk assessment practices will contribute to both financial stability and long-term sustainable growth. However, for these advancements to be effective, financial institutions in Uzbekistan must prioritize data quality, transparency, and compliance with international standards, while fostering a regulatory environment that encourages innovation without compromising stability. Ultimately, as Uzbekistan continues its economic transition, the careful integration of advanced credit risk assessment methods, along with traditional qualitative tools, will provide the foundation for a financial system that can adapt to new challenges, support economic growth, and contribute to the broader goals of financial inclusion and national development. Financial institutions that embrace a holistic and adaptive approach to credit risk management will be better positioned to mitigate risks, enhance profitability, and support the country's strategic economic goals in the coming decades.

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