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# CREDIT RISKS AND FACTORS LEADING TO A DECREASE IN ASSET QUALITY: ANALYSIS BASED ON FOREIGN EXPERIENCE

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### Abstract

This article provides a comparative analysis of macroeconomic factors, institutional conditions, and prudential mechanisms that influence the dynamics of credit risks and non-performing loans (NPL). The study reveals the institutional interpretation of the differences between "lag effect," IFRS 9 and expected credit loss (ECL) reserves and NPL. The obtained results indicate the need to strengthen the structure of the loan portfolio and proactive risk monitoring in the banking system of Uzbekistan.

**Keywords:** Credit risk, asset quality, NPL, IFRS 9, ECL, macroeconomic factors, macroprudential policy, restructuring, latent risk, bank stability.

### INTRODUCTION

Credit risks are associated with the possibility of late and incomplete fulfillment of borrowers' financial obligations, the systemic intensification of which leads to an increase in the share of non-performing loans (NPL), a decrease in the adequacy of bank capital (CAR) and profitability (ROA). International banking practice shows that the loss of control over credit risks poses a serious threat to the stability of both individual banks and the entire banking system. Therefore, it is not enough to explain credit risks and the decline in asset quality only by internal factors of the bank; analyzing this process in close connection with the

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macroeconomic environment, credit cycles, prudential policy, and institutional conditions is a scientifically based approach.

This issue is of particular relevance in the context of reforming the banking system of Uzbekistan. President of the Republic of Uzbekistan Sh. MIRZIYOYEV M. Mirziyoyev emphasized the need to prioritize the qualitative factor over quantitative expansion in the banking system, noting that "it is not the volume of loans that matters, but their repayment and effective impact on the economy." This approach clearly demonstrates the decisive role of the quality of the loan portfolio and risk management mechanisms in bank stability.

The main scientific question of the article is formulated as follows: through which macroeconomic, institutional, and prudential mechanisms do credit risks in foreign banking systems lead to an increase in the share of NPLs, and to what extent are these mechanisms relevant in the banking system of Uzbekistan? The answer to this question creates an important scientific basis for identifying modern approaches to credit risk management and strengthening financial stability in the banking system.

### RELATED LITERATURE REVIEW

Foreign empirical studies show that credit risks often manifest not at the peak of economic growth, but in the form of non-performing loans (NPL) in subsequent periods of the lending cycle. This situation is interpreted in the scientific literature as a "late effect" (lag effect). In particular, **Horton and Metrick (2012)** and **Borio (2014)** substantiated the low assessment of risks during the period of credit boom and the sharp opening of credit risks in the bank's balance sheets when economic conditions worsen. **Klein (2022)** Empirical research on the banking systems of Central and Eastern Europe and developing countries confirms that the rapid expansion of lending will lead to a significant increase in the level of NPL in subsequent stages.

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This approach is also supported in the research of Uzbek scientists. In particular, **Akbarov (2021)** and **Bozorov (2019)** emphasize that there is a delayed correlation over time between the growth rates of the loan portfolio and the quality of assets in commercial banks, credit risks are often clearly manifested during periods of economic downturn. This situation indicates the need to use cyclical and proactive monitoring mechanisms rather than a static approach in assessing credit risks.

Also, the impact of macroeconomic factors on credit risks is not direct, but indirect through transmission channels. Louzis, Wooldis, and Metachas (2012) Using the example of the Greek banking system, they econometrically proved that GDP growth, interest rates, and unemployment have a significant and delayed impact on the dynamics of NPL. According to the research of Nkusu (2011) and Beck, Jakubik, and Piloiu (2015) , an increase in inflation leads to a decrease in real incomes, and the formation of high interest rates leads to an increase in the debt burden, weakening the solvency of borrowers. As a result, the combination of these factors contributes to an increase in the share of problem loans.

These conclusions are also confirmed by research conducted on the banking system of Uzbekistan. **Mirzayev (2022)** and **Kholmuradov (2023)** notes that the dynamics of inflation and interest rates in Uzbekistan are not directly, but indirectly related to the quality of the loan portfolio, especially under conditions of rapid lending expansion, these factors have a delayed impact on the level of NPL.

Therefore, the analysis of foreign and domestic literature scientifically substantiates the need for a comprehensive consideration of macroeconomic factors, credit cycles, and the institutional environment when explaining credit risks and a decrease in asset quality.

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### RESEARCH METHODOLOGY

A comparative-analytical methodology was applied in the article. The study was organized in three blocks:

- 1. IFRS 9-ECL-NPL block:** Comparative assessment of ECL reserves and NPL levels under the conditions of implementation of IFRS 9 (2018) in various banking systems (Table 1).
- 2. Macroeconomic block:** Harmony between GDP growth, inflation, interest rate, and NPL in 2020-2024 (Table 2).
- 3. Bank metrics block:** Identifying the "non-mechanical" relationship between credit growth, CAR, ROA, and NPL (Figure 3).

This analysis does not claim econometric proof of cause-and-effect relationships; the main goal is to draw practical conclusions for Uzbekistan through institutional and comparative assessment

### ANALYSIS AND RESULTS

Implementation of the international financial reporting standard IFRS 9 in the context of banking systems, reflecting the relationship between expected credit losses (ECL) reserves and the level of problem loans

**Table 1.3.1. Implementation of IFRS 9 across banking systems, comparative relationship between ECL reserves and non-performing loans (NPL).**

| Country       | year of implementation of IFRS 9 | ECL Reserves / Loans (%) | NPL (%) |
|---------------|----------------------------------|--------------------------|---------|
| Uzbekistan    | 2018                             | 3.2.                     | 3.9.    |
| Eurozone (EU) | 2018                             | 2.1.                     | 1.9.    |
| South Korea   | 2018                             | 0.9                      | 0.6     |
| Turkey        | 2018                             | 5.1.                     | 1.8.    |

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The ECL reserves and NPL indicators presented in Table 1.3.1 reflect the current state of banking systems after the implementation of IFRS 9. This table serves not for a comparative assessment of the dynamic impact of IFRS 9 implementation over time, but for a comparative assessment of how this standard works in different institutional environments. Therefore, the differences between ECL and NPL are explained by the level of development of risk management institutions, rather than the standard itself. As can be seen from the table, although the IFRS 9 standard was introduced in 2018 in all analyzed countries, there are significant differences between ECL reserves and the level of NPL.

In particular, in the South Korean banking system, ECL reserves amounted to 0.9% of loans, while the NPL level was around 0.6%. This situation indicates the early detection of credit risks, the widespread use of modern scoring and monitoring systems in the assessment of borrowers, and the effective functioning of proactive loan portfolio management mechanisms. This experience means that the requirements of IFRS 9 are integrated not only into accounting but also into real lending decisions.

In the Eurozone banking system, ECL reserves were 2.1 percent, and the NPL level was 1.9 percent, while credit risks remained relatively stable. This situation shows that the instruments of macroprudential policy play an important role in managing credit risks. In particular, strict capital adequacy requirements, regular stress tests, and mechanisms limiting the debt burden ensured systematic control over the quality of the loan portfolio.

In the banking system of Uzbekistan, ECL reserves are formed at the level of 3.2 percent, but the share of non-performing loans reaches 3.9 percent, which indicates insufficient integration of mechanisms for assessing and monitoring credit risks. This means that the presence of IFRS 9 and ECL mechanisms does not automatically guarantee an improvement in asset quality, but their real effectiveness depends on the level of development of risk management institutions in banks.

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Although ECL reserves in the Turkish banking system are formed at the highest level (5.1 percent), the relatively low level of NPL (1.8 percent) indicates not a real decrease in credit risks, but a statistically temporary limitation of problem loans through large-scale restructuring, refinancing, and government intervention. Although such an approach may seem to maintain the stability of the banking system in the short term, it can lead to the accumulation of latent credit risks in the long term.

The restructuring of loans, deferred payments, and the widespread use of state support measures can lead to the accumulation of problem loans in the balance sheet in a temporarily hidden (latent) form. Such risks manifest themselves in an open form when macroeconomic conditions are exacerbated or state support is reduced. Reflecting the relationship between macroeconomic factors and credit risks

Table 1.3.2 Macroeconomic factors and credit risks (2024).

| Year | Country                   | GDP growth (%) | Inflation (%) | Interest rate (%) | NPL (%) |
|------|---------------------------|----------------|---------------|-------------------|---------|
| 2020 | Uzbekistan                | 1.6%           | 11.1%         | 14.0%             | 2.1%    |
| 2020 | European Union (Eurozone) | -6.4%          | 0.3%          | 0.0%              | 2.6%    |
| 2020 | South Korea               | -0.7%          | 0.5%          | 0.5%              | 0.5%    |
| 2020 | Turkey                    | 1.9%           | 12.3%         | 17.0%             | 4.1%    |
| 2021 | Uzbekistan                | 7.4%           | 10.0%         | 14.0%             | 5.2%    |
| 2021 | European Union (Eurozone) | 5.3%           | 2.6%          | 0.0%              | 2.1%    |
| 2021 | South Korea               | 4.3%           | 2.5%          | 1.0%              | 0.4%    |
| 2021 | Turkey                    | 11.4%          | 19.6%         | 14.0%             | 3.2%    |
| 2022 | Uzbekistan                | 5.7%           | 12.3%         | 15.0%             | 3.6%    |
| 2022 | European Union (Eurozone) | 3.4%           | 8.4%          | 2.5%              | 1.8%    |
| 2022 | South Korea               | 2.6%           | 5.1%          | 3.25%             | 0.3%    |
| 2022 | Turkey                    | 5.5%           | 72.3%         | 9.0%              | 2.1%    |
| 2023 | Uzbekistan                | 6.3%           | 8.8%          | 14.0%             | 3.5%    |
| 2023 | European Union (Eurozone) | 0.5%           | 5.4%          | 4.5%              | 1.9%    |
| 2023 | South Korea               | 1.4%           | 3.6%          | 3.5%              | 0.4%    |
| 2023 | Turkey                    | 4.5%           | 53.9%         | 42.5%             | 1.6%    |
| 2024 | Uzbekistan                | 6.5%           | 9.8%          | 13.5%             | 3.3%    |
| 2024 | European Union (Eurozone) | 0.8%           | 2.3%          | 3.75%             | 1.9%    |
| 2024 | South Korea               | 2.4%           | 2.5%          | 3.25%             | 0.5%    |
| 2024 | Turkey                    | 3.1%           | 45.0%         | 50.0%             | 1.7%    |
| 2024 | USA                       | 2.6%           | 2.9%          | 5.0%              | 0.9%    |

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The data in Table 1.3.2 further reinforce these conclusions. Despite the negative GDP growth in the Eurozone and South Korea under the conditions of the COVID-19 pandemic in 2020, the level of NPL did not increase sharply, which is explained by credit moratoriums, the introduction of fiscal stimulus measures, and a soft monetary policy. However, in recent years, especially in 2021-2022, against the backdrop of the rapid expansion of lending, the increase in the level of NPL in some countries shows that the risks formed during the pandemic are manifested with a delay.

Despite high economic growth in Uzbekistan in 2021, the significant increase in the level of non-performing loans is explained by the rapid expansion of lending and the insufficient strength of risk assessment mechanisms. Although the increase in inflation and tightening of interest rates in 2022-2024 slowed lending rates and led to a relative stabilization of the NPL level, systemic problems related to the quality of the loan portfolio remain.

The influence of macroeconomic factors on credit risks is carried out not directly, but indirectly through transfer mechanisms. In particular, an increase in inflation leads to a decrease in real incomes, and high interest rates lead to an increase in the debt burden, weakening the solvency of borrowers. As a result, these processes lead to an increase in the share of non-performing loans.

Reflecting the relationship between credit dynamics, capitalization, and asset quality in leading banking systems

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**Table 1.3.3. Dynamics of credit, capitalization and asset quality in banking systems (2020-2024, year-end, %).**

| Year | Banking system | Credit growth (%) | CAR (%) | ROA (%) | NPL (%) |
|------|----------------|-------------------|---------|---------|---------|
| 2020 | Uzbekistan     | 31.2.             | 18.4.   | 1.7.    | 1.5.    |
| 2020 | Eurozone       | 4.2.              | 19.0    | 0.32    | 2.6.    |
| 2020 | South Korea    | 7.9.              | 15.8.   | 0.52    | 0.52    |
| 2020 | Turkey         | 36.0              | 18.4.   | 1.1     | 4.1.    |
| 2021 | Uzbekistan     | 30.0              | 18.1.   | 1.9.    | 2.1.    |
| 2021 | Eurozone       | 3.1.              | 19.7.   | 0.44    | 2.0     |
| 2021 | South Korea    | 6.5.              | 15.9.   | 0.61    | 0.44    |
| 2021 | Turkey         | 27.0              | 18.0    | 1.4.    | 3.2.    |
| 2022 | Uzbekistan     | 18.4.             | 17.6.   | 1.6.    | 3.6.    |
| 2022 | Eurozone       | 5.0               | 19.2.   | 0.55    | 1.8.    |
| 2022 | South Korea    | 9.6.              | 16.1.   | 0.57    | 0.41    |
| 2022 | Turkey         | 54.0              | 18.8.   | 2.0     | 2.4.    |
| 2023 | Uzbekistan     | 14.7.             | 17.2.   | 1.5.    | 3.7.    |
| 2023 | Eurozone       | 1.2.              | 20.0    | 0.7     | 1.9.    |
| 2023 | South Korea    | 8.7.              | 16.4.   | 0.46    | 0.65    |
| 2023 | Turkey         | 40.0              | 19.3.   | 2.5.    | 1.6.    |
| 2024 | Uzbekistan     | 13.0              | 17.0    | 1.4.    | 3.9.    |
| 2024 | Eurozone       | 2.0               | 20.2.   | 0.73    | 1.9.    |
| 2024 | South Korea    | 10.5              | 16.52.  | 0.42    | 0.6     |
| 2024 | Turkey         | 37.1.             | 19.7.   | 2.3.    | 1.8.    |

Table 1.3.3 shows that there is no direct mechanical relationship between credit growth and the level of non-performing loans. In some countries, despite high credit growth, the quality of assets remained stable, while in other countries, the slowdown in credit growth did not lead to a decrease in the level of non-performing loans. This confirms that credit risks are determined by the structure of the loan portfolio, the level of diversification, and the quality of risk management mechanisms, rather than the volume of loans.

Foreign experience shows that in banking systems where the loan portfolio is diversified by sectors and segments, and borrower assessment and monitoring systems are developed, the quality of assets remains relatively stable. On the contrary, in banking systems with a highly concentrated loan portfolio and a high

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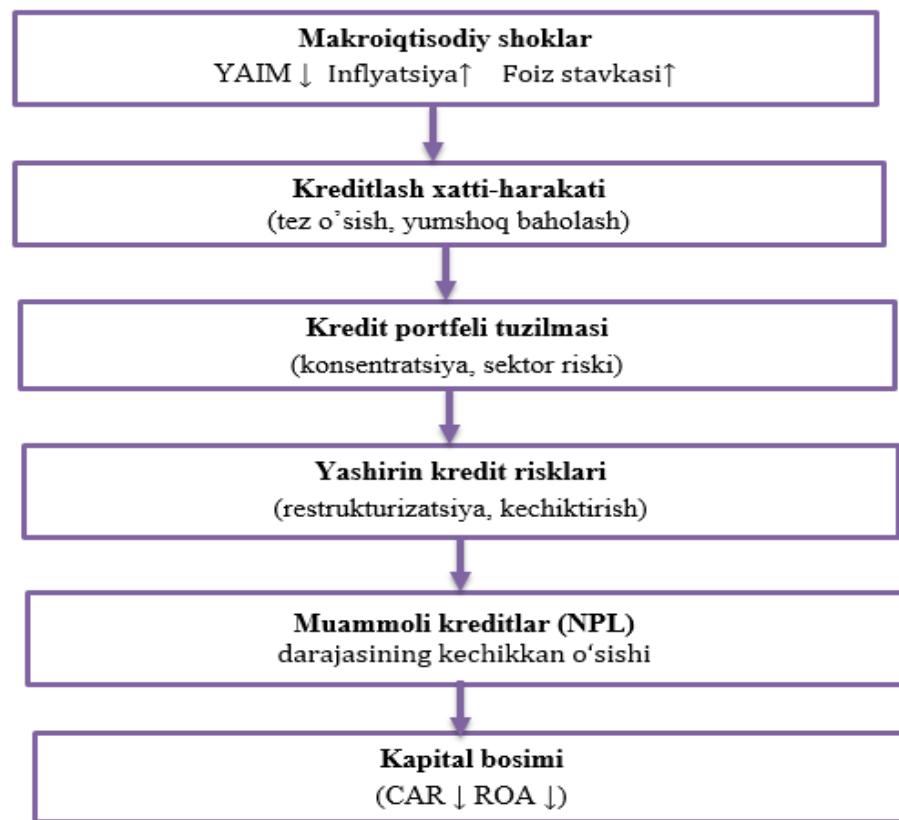
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share of targeted lending, credit risks become a systemic problem. From this point of view, the high share of state-owned banks in the banking system of Uzbekistan and the widespread practice of targeted lending lead to the incomplete functioning of market mechanisms in managing credit risks.



**Figure 1.3.1 Mechanism of the impact of macroeconomic shocks on the quality of the loan portfolio and bank capital (GIVEN IN UZBEK)**

As can be seen from the figure, credit risks are formed not as a direct result of the growth of loan volumes, but through changes in lending behavior against the background of macroeconomic shocks.

In particular, in the context of slowing economic growth, rising inflation, and tightening interest rates, the widespread use by banks of the practice of restructuring loans and deferring payments leads to the accumulation of credit

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risks in the balance sheet in a latent form. As a result, the level of non-performing loans may appear low in the short term, but when macroeconomic conditions worsen or government support decreases, these risks manifest themselves in a delayed, open form.

Analysis based on the experience of foreign banking systems shows that credit risks and a decrease in asset quality are determined not by an increase in lending volumes, but by the level of development of risk assessment and management institutions, the effectiveness of macroprudential policy, and the institutional environment. Although IFRS 9 and ECL mechanisms are a prerequisite for managing credit risks, their effectiveness is ensured only when these mechanisms are integrated into real management decisions.

### CONCLUSIONS AND PROPOSALS

The results of the analysis give the following conclusions:

1. IFRS 9 and ECL mechanisms are a prerequisite for managing credit risks, but do not automatically guarantee an improvement in asset quality; effectiveness depends on the integration of ECL into real management decisions.
2. ECL/NPL differences are often explained by institutional factors: risk management quality, restructuring practices, and macroprudential control discipline.
3. Macro factors (inflation, interest rate, GDP growth) affect NPL not directly, but indirectly through transmission channels and often with a "delayed effect."
4. Credit growth does not "mechanically" determine the NPL; the main determinants are the portfolio structure, concentration, diversification, and monitoring systems.
5. Priority tasks in the context of Uzbekistan: diversification of the loan portfolio by segment/industry, proactive monitoring (early warning indicators), transparency of restructuring practices, and strengthening risk culture.

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### Practical suggestions:

- In banks **ECL-scoring-monitoring** combining the chain into a single management loop (IFRS 9 should be a decision mechanism, not just an account).
- **Latent risk monitoring** for restructured loans : Separate monitoring of the indicators "re-restructuring," "recurrence of payment delays."
- Strengthening credit standards in sectors with a high portfolio concentration, introducing stress tests by segment.
- Early warning panel for macro shocks: linking changes in inflation-interest-income indices to the NPL forecast.

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