



Stress testing and scenario analysis as tools for loan portfolio monitoring

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Abstract. This paper examines stress testing and scenario analysis as modern tools for monitoring the quality of banks' loan portfolios. It demonstrates that these methods help identify vulnerabilities at an early stage, take into account the impact of macroeconomic shocks, and support the formation of more resilient credit policies. Based on the international experience of the EU, the US, and BIS recommendations, best practices of using these tools within risk management frameworks are highlighted. The paper also explores the prospects of introducing stress testing into Uzbekistan's banking sector, where the demand for such methods is driven by ongoing reforms, integration into global markets, and macroeconomic volatility. The conclusion emphasizes that the development of stress testing and scenario analysis could significantly enhance the resilience of domestic banks and strengthen investor confidence.

Keywords: loan portfolio, stress testing, scenario analysis, risk management, banking system, Uzbekistan, Basel III.

Introduction. The loan portfolio occupies a central place in the structure of a bank's assets and determines its financial stability. Effective loan quality monitoring requires the use of not only traditional analytical methods but also tools that take into account the impact of external factors and unpredictable shocks. These tools include stress testing and scenario analysis. They allow one to assess how the loan portfolio will change if adverse events occur and to prepare for potential losses in advance [1].

In recent years, regulators have been paying particular attention to the implementation of these methods, as the crises of 2008 and 2020 demonstrated that without stress testing, banks tend to underestimate systemic risks [2]. The use of such tools makes supervision more transparent and banks' lending policies more balanced.

Theoretical basis. Stress testing involves simulating extreme, yet plausible, conditions that a bank may face. For example, this could include a sharp decline in the national currency, an increase in interest rates, a crisis in a particular sector of the economy, or a decline in the solvency of the population. Scenario analysis is similar in essence, but involves constructing several complex scenarios, including both negative and relatively favorable ones [3].

The main difference is that stress tests typically rely on predetermined "shocks," while scenario analysis is based on probable macroeconomic forecasts [4]. When combined, these methods allow banks not only to assess the resilience of their current portfolio but also to plan measures to adapt it to a changing environment. In risk

management theory, they are considered a "bridge" between statistical analysis of the past and strategic management of the future [5].

International Practice. In the global banking system, stress testing has already become a mandatory part of supervision. In the European Union, the European Banking Authority (EBA) regularly conducts stress testing, publishing results for the largest banks and testing their resilience to economic shocks [6]. In the United States, the Federal Reserve also requires systemically important banks to undergo stress tests (CCAR), which strengthens investor and depositor confidence [7]. These practices demonstrate that this approach not only helps identify risks but also disciplines bankers, forcing them to take a more prudent approach to lending policy.

International organizations, including the Bank for International Settlements (BIS), view stress testing as a key element of the Basel Accords and recommend their regular implementation for all banks, not just systemically important ones [8]. In Asia and Latin America, stress testing is gradually being introduced as a tool for assessing macroprudential resilience, although it often faces the challenge of insufficient data and limited analytical resources [9].

Significance for Uzbekistan. In the context of reforms and modernization of the Uzbek banking system, the implementation of stress testing and scenario analysis is particularly important. Currently, most commercial banks limit themselves to regulatory controls and traditional portfolio quality metrics. However, the macroeconomic environment is subject to fluctuations: commodity prices, exchange rates, and inflation expectations directly impact borrowers' ability to service loans [10].

Regular use of stress tests would allow for an early assessment of the potential growth of problem debt and the development of measures to limit risk concentration. Scenario analysis, in turn, can be used not only to evaluate individual portfolios but also to develop a long-term strategy for diversifying credit assets. For example, a bank can calculate how its position will change with a slowdown in the construction sector or fluctuations in exports to neighboring countries [11]. This approach will help national banks increase resilience and reduce dependence on specific economic sectors.

Conclusion. Stress testing and scenario analysis have become important elements of modern risk management. Their implementation allows banks to go beyond traditional analysis and consider their loan portfolios with an eye on future risks and potential crises. For Uzbekistan, these tools offer the opportunity to move to a new level of monitoring, ensuring the early identification of problematic trends and the development of preventive measures [12].

Expanding the practice of stress testing and scenario analysis will increase the confidence of international investors and creditors in the national banking system. In the long term, this will also strengthen the country's financial stability and bring its regulation closer to international standards.

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