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THE RELEVANCE OF STRESS TESTING IN THE MONITORING OF BANK RISKS

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Abstract: In today’s economic instability, risk assessment is an integral part of the activities of all organizations, especially commercial banks. Despite the active use of various methodological approaches in stress testing in foreign countries, the risk assessment system in Uzbekistan has not yet been properly developed. The article analyzes the main concepts, principles, approaches and features underlying the process of organizing and conducting stress tests in commercial banks. A methodological approach to the study of risks is proposed, which presents the top-down mechanism and its main stages.

Keywords: risk management, stress testing, banking sector, anti-risk policy, methodology, “top-down” approach

INTRODUCTION

In the meeting on June 6 President of Uzbekistan Sh.M.Mirziyoev mentioned about implementation of the strategy of reforming the banking system of the Republic of Uzbekistan for 2020-2025, aimed at increasing the share of the private sector in bank assets from 15% to 60%. Portfolio and project quality improvement were discussed. According to the results of stress tests, the share of problem loans may increase several times, which is a serious risk for the banking system.¹

It is typical for many of us to know, what is the meaning and economic significance of the stress test mentioned in this case.

Indeed, the most common method of risk analysis in financial institutions today is stress testing. Its essence is to understand what can happen to a bank in a crisis and what losses it will incur. Stress testing is also used to assess the entire financial system, its vulnerability to potential events.

The main advantage is that in the pre-crisis stages of the economy it is possible to predict possible changes in the system and prevent stressful situations, as well as to have an idea of how the system will react to this situation when they occur.

One of the main reasons for the emergence of stress tests was the global financial crisis of 2008-2009, the negative consequences of which for the global economy, aroused special interest in conducting stress tests in banks. Today, the crisis has become an indicator for the banking sector, which has made it necessary to focus on the weak positions of all economic activities. Based on this approach,

the following major international organizations are involved in the development and preparation of regulations:
- Financial Stability Board;
- Basel Committee on Banking Supervision;
- European Banking Supervision Committee;
- International Financial Institute.

The documents proposed by these organizations are of a recommendatory nature only. Therefore, credit institutions and other interested market participants can, based on the developed recommendations, independently choose the method of stress testing, as well as create custom test models that meet the specific characteristics of the business and the range of services provided.

LITERATURE REVIEW ON THE SUBJECT

In recent years, there have been many definitions of the relatively new term “stress test” in the scientific literature, periodicals, and the Internet. A review of the precise definitions used in world practice by various international organizations and researchers will provide a comprehensive analysis of the essence of this concept (Table 1).

Table 1
Conceptual basis of stress testing offered by international organizations

<table>
<thead>
<tr>
<th>Description of stress test</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stress testing is a method of assessing the sensitivity of a portfolio to significant changes in macroeconomic indicators or to specific but possible events [1]</td>
<td>International Monetary Fund</td>
</tr>
<tr>
<td>Stress testing is a term used to describe the various methods used by financial institutions to assess their vulnerabilities in emergent but possible events [2].</td>
<td>Bank for International Settlements</td>
</tr>
<tr>
<td>A thorough stress test should be performed to assess the capital adequacy of banks using the internal rating model [3]</td>
<td>Basel Committee on Banking Supervision</td>
</tr>
</tbody>
</table>

Source: Compiled by the author based on an analysis of the literature
Although the process of introducing stress tests in Uzbekistan dates back to 2015, no regulatory document on banking legislation defines stress tests. So the generalization of the definitions under consideration makes it possible to describe this term in the following way (Fig. 1).

<table>
<thead>
<tr>
<th>Risk is an important management tool</th>
<th>Assess the potential vulnerability of the bank's assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>The function of the Bank's anti-crisis policy</td>
<td>Strategic planning tool</td>
</tr>
</tbody>
</table>

**Figure 1. Brief description of the concept of "stress test"**

Timely introduction of stress tests into the practice of risk management will allow to effectively use the results of this innovation and to overcome the crisis faster and without losses.

According to the popular e-financial term Investopedia, a bank stress test is an analysis of hypothetically unfavorable economic scenarios, such as a deep recession or a financial market crisis, designed to determine whether a bank has sufficient capital to withstand the effects of adverse economic changes. The source also describes stress testing as a computer simulation method used to test the resilience of institutions and investment portfolios to future financial situations.²

In our view, stress tests are a program of specific measures developed by banks to provide liquidity in the short term in the event of unforeseen circumstances.

**RESEARCH METHODOLOGY**

The article uses stress testing methods that can protect the banking sector from adverse effects at the initial stage of risk identification. Also, the methodology of this article was analyzed and synthesized, scientific abstraction, deduction, classification, generalization, comparative, theoretical interpretation and analytical methods were used.

Furthermore, international normative documents, researches of scientists in scientific periodicals and data from the official websites of the Central Bank were used.

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ANALYSIS AND RESULTS

Although stress tests were developed decades ago, their prevalence and rapid development dates back to the global financial crisis and the years that followed, as noted above. The Great Recession situation that took place put many banks and financial institutions in a serious financial position, demonstrating their vulnerability to market crises and economic crises. As a result, the federal and financial authorities have significantly expanded regulatory reporting requirements to focus on capital adequacy and internal capital management strategies. It has become necessary for banks to constantly identify and document their solvency. Federal and international financial institutions began to require all banks of a certain size to conduct regular stress tests and report on the results. Banks that failed to pass the stress tests were required to strictly consider measures to maintain or form their own capital reserves.

In international practice, it is customary to conduct stress tests every year, and in developed countries on a quarterly basis. Due to the lack of clear procedures and criteria for conducting stress tests, this method has not become a widespread activity in our country.

The system of stress testing in commercial banks in the Republic of Uzbekistan dates back to 2015⁴, but it can not be said that the system is still fully operational. According to the adopted procedure, banks must undergo stress tests of their liquidity at least once a quarter. As a result, banks need to adjust their risk management strategies and develop plans to provide additional funding in the event of unexpected stress. Banks must provide the Central Bank with information on the results of stress tests and decisions made on contingency financing plans.

The significance of stress testing is also reflected in the strategy of reforming the banking system of the Republic of Uzbekistan for 2020-2025, approved by a recent Presidential Decree. According to this strategy, in order to revise the regulatory and regulatory framework through the introduction of internationally recognized minimum standards and requirements for banks, develop detailed requirements for stress testing in banks in 2021, including the use of stress test results in capital and liquidity planning marked. The strategy also includes the establishment of differentiated capital requirements by 2022 based on the internal processes of banks to assess capital adequacy (ICAAP), stress tests and risk characteristics.

Despite the fact that the regulatory framework for stress testing was adopted in 2015, to date, no clear procedure and criteria for this process have been developed.

Stress testing is characterized by qualitative and quantitative analyzes. The essence of these types of analysis is as follows:

³ Resolution of the President of the Republic of Uzbekistan dated May 6, 2015 No PP-2344 "On measures to further increase the financial stability of commercial banks and develop their resource base"

⁴
Quantitative analysis is aimed at measuring key macroeconomic indicators that change due to the impact of various stressors on them; Qualitative analysis allows modeling and predicting the probability of occurrence of a particular stress scenario, as well as identification. The main objectives of this qualitative analysis are to assess the adequacy of the credit institution's assets to cover potential losses and to take a set of measures to reduce risks and preserve capital [4].

Various methods of stress tests are widely used in international practice. They are further subdivided into two large, single-factor, and multi-factor stress-testing groups, which are divided into smaller types [5].

Conducting one-factor stress tests (sensitivity analysis) allows you to quickly consider the impact of individual factors on the assets of the credit institution.

Examples of these factors are:
- inflation rate;
- interest rate;
- exchange rate, etc.

Conduct multiple factorillist tests (scenario analysis). This analysis will primarily focus on assessing the strategic prospects of the credit institution. It assesses the potential impact of a number of risk factors on the activities of a credit institution in the event of a crisis.

The following are the pros and cons of one- and multi-factor stress tests (Table 2):

<table>
<thead>
<tr>
<th>Stress-testing group</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-factor</td>
<td>Opportunity to separately consider the impact of a risk factor on bank capital. Simplicity of calculation. Ease of implementation. Fast management decisions. Risk protection (hedging)</td>
<td>In the event of an emergency, all risk factors, including those that have not been previously analyzed, will change, which may cause the credit institution to be unprepared to prevent the risk from occurring.</td>
</tr>
<tr>
<td>multi-factor</td>
<td>Maximum losses is identified, which helps to avoid the risk of bankruptcy.</td>
<td>Relatively complex and time consuming calculations. Misinterpretation of a single factor in the set of factors can lead to misinterpretation</td>
</tr>
</tbody>
</table>
In international practice, there are two approaches to stress testing, "bottom-up" and "top-down". In the first case, banks are provided with developed scenario conditions, which independently calculate the stress test and submit the test results to the supervisory authority. In the second case, the regulator (mega-regulator - the Central Bank) performs calculations in accordance with a single adopted methodology.

Overall, in world practice, stress tests are effectively used in monitoring banking risks. However, the incomplete use of this system in Uzbekistan, the lack of understanding of the essence of stress tests in most banks and the lack of clear regulatory requirements and regulations for its application lead to a lack of attention to modern approaches to monitoring banking risks.

**CONCLUSIONS AND RECOMMENDATIONS**

Hence, the stress test system can become a functional tool in the activities of commercial banks. However, this mechanism has not yet been fully tested. To this end, it is important for banks to fulfill the task of adapting existing methods.

It should be noted that despite the high urgency of issues related to the identification of risks of economic activity, clear guidelines for the identification of uncertainty factors and algorithms for the prevention of undesirable consequences for businesses have not yet been developed.

In our opinion, the Republic of Uzbekistan, as a country gradually transitioning to a market economy, should not use the first approach, ie the "bottom-up" approach, and it is not effective enough. Therefore, it is recommended to apply the “top-down” approach, which includes the following key steps (Figure 3).
Figure 3. The main recommended stages of stress testing based on the top-down approach

During the high-level visit of the Uzbek delegation to New York on September 19, 2017, President of the Republic of Uzbekistan Sh. Mirziyoyev and IMF Managing Director K. During the bilateral meeting between Lagarde, an agreement was reached to provide technical assistance of the International Monetary Fund (IMF) to the ministries and departments of the Republic of Uzbekistan and to provide practical advice on reforming and analyzing the country's economic performance. One of the important areas of bilateral cooperation between the Republic of Uzbekistan and the International Monetary Fund is technical assistance missions, the main task of which is to increase the institutional capacity of business entities. In 2017-2018, 13 IMF technical assistance missions were sent to the Republic of Uzbekistan. The activities of IMF experts are mainly aimed at improving monetary and fiscal policies, improving the system of financial indicators. The implementation of the above-mentioned "top-down" approach under this agreement is one of the technical assistance missions between the Central Bank of the Republic of Uzbekistan and the International Monetary Fund. According to the mission, assistance in developing a stress-testing model will provide recommendations on the top-down model used by the Central Bank, as well as

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explore opportunities to improve it by including it in the modeling of macroeconomic indicators, which will be implemented in 2020-2021.

As a result of studying the international experience, the order of actions on the "top-down" approach to stress testing in commercial banks was presented. It is recommended that the proposed sequence of steps under this approach be used in the practical activities of commercial banks in the implementation of mandatory risk management policies.

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7. Decree of the President of the Republic of Uzbekistan No. PF-5992 of May 12, 2020 "On the strategy of reforming the banking system of the Republic of Uzbekistan for 2020-2025"
8. A meeting chaired by the President of the Republic of Uzbekistan Sh.M.Mirziyoev on June 6 this year to implement the strategy of reforming the banking system of the Republic of Uzbekistan for 2020-2025 and accelerate the transformation of commercial banks, aimed at increasing the share of private sector in bank assets from 15% to 60%. materials