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STRESS TESTING OF LIQUIDITY RISK AS A TOOL FOR AN OPTIMAL BANK MANAGEMENT

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Creating a system of risk management is a vital necessity in the activities of any bank. The main objective of the commercial bank is a profit. However, all the efforts of the bank's achievements can be easily negated by the implementation of any types of risks accompanying banking activities. It may be the banks run the risk not only of the profits' size and their own survival. As a result, it suffers not only the bank, but also its customers and owners. Therefore, risk management is an important and integral part of any bank's strategy. The bank's high responsibility to its clients and owners, a clear understanding that the well-being of customers is the basis of his own well-being are the main motive of becoming a risk management system.

In recent years, the process of risk management system's formation in the banks is also stimulated by the requirements of the National Bank of the Republic of Kazakhstan, which apply equally to the issue of liquidity risk management, the development banks, the early warning systems and stress testing of this type of risk. Unfortunately, you cannot create an adequate management system of liquidity risk, which is guided by only one Instruction on normative values and methodology for calculation of prudential standards for second tier banks №358 approved by the Board of the Agency of the Republic of Kazakhstan on regulation and supervision of financial market and financial organizations on September 30, 2005 [1].

Liquidity, according to the statement of the International Monetary Fund, relates to the ability of the bank to make agreed upon payments in a timely fashion [2]. Thus, the bank's liquidity is measured and evaluated by determining actual values for compliance with liquidity ratios of mandatory normative values. It is known that there are four ratios: the instant liquidity, the current liquidity, the short-term liquidity and the ratio of highly liquid assets to total assets. Algorithms for calculating these indicators have a number of serious shortcomings:

1. The degree of asset liquidity is contingent upon the type of collateral. The presence of an asset's ensuring as a guarantee or a pledge doesn't increase its liquidity. In this case, the assessment of asset liquidity is replaced by assessing the reliability of its ensuring. Consequently, the asset could be problematic and illiquid.

2. The structure of liabilities for the calculating of instant and current liquidity is included bank's overdue obligations. The existence of such obligations automatically puts the bank in the category of illiquid. Such banks need to calculate recovery rates of liquidity, but not liquidity.

3. The short-term liquidity ratio is abstract and doesn't have any economic interpretation. The algorithm for calculating the indicator is cumbersome and unnecessarily complicated.

Figure 1 shows the scheme of regular stress testing of the banking sector in Kazakhstan.

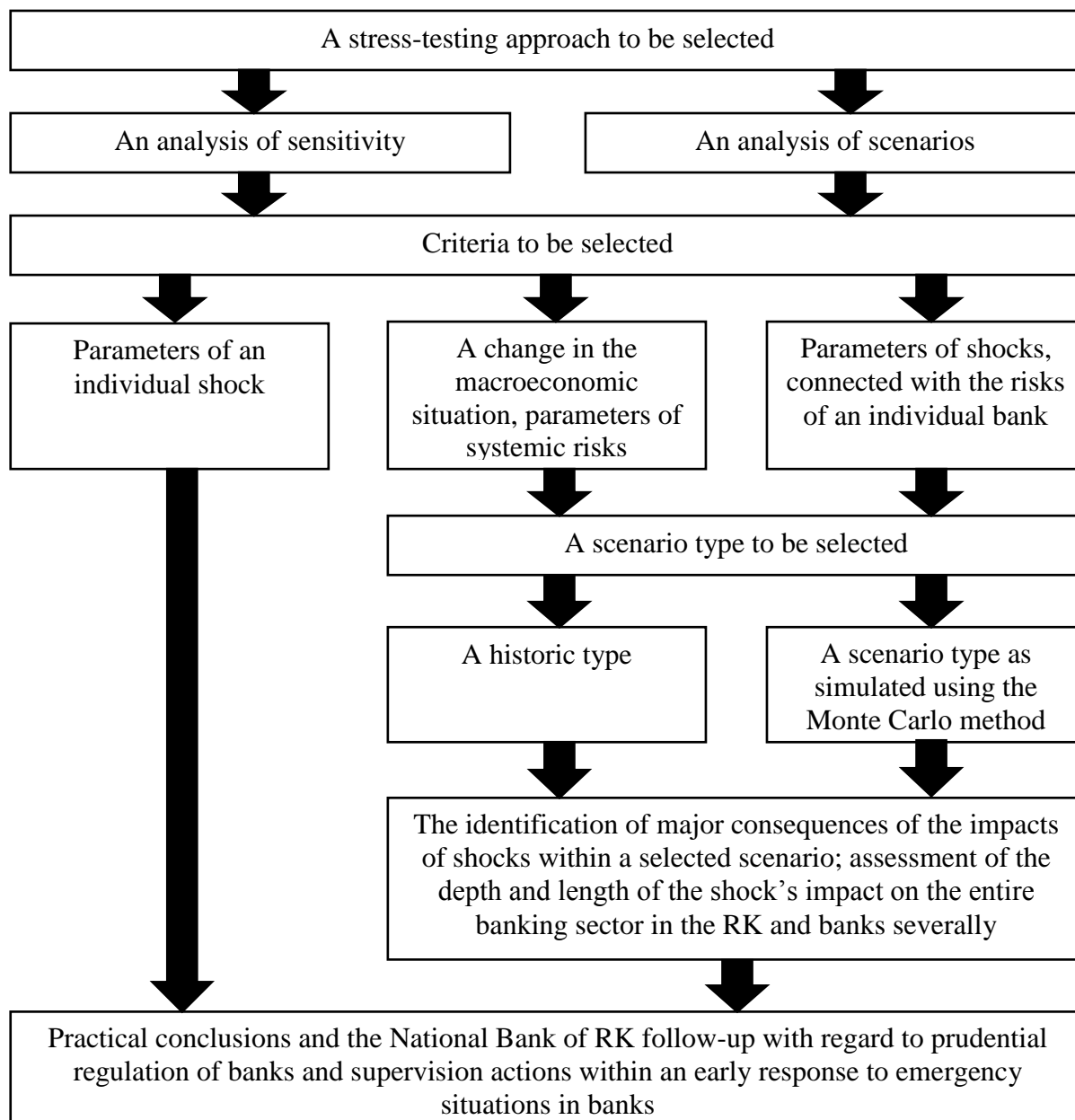


Figure 1. The scheme of the banking sector's regular stress testing in Kazakhstan [3].

During 2014 currency, dates and types of attracted banks' funding were exposed to structural changes as a result of a sequence of events:

- increase in the level of dollarization of bank deposits and a widening gap between assets and attracted funding;
- reducing the amount of deposits because of the spread of false information about the financial insolvency of three major banks, which demonstrated high volatility of individuals' deposits;

— establishment of the Single Accumulative Pension Fund, which became a new investor in tenge deposits with more than three years term. It has reduced the gap in maturities of assets and liabilities of banks in national currency.

As result of the liquidity problems of banks during the crisis in 2007, the Basel Committee on Banking Supervision has developed two standards, which are separate, but mutually reinforcing in the supervision of liquidity risk. Today, methodology of only one standard – Liquidity Coverage Ratio (LCR) – is fully developed and approved. LCR aims to ensure the sustainability of the bank’s liquidity risk in the short term.

Liquidity Coverage Ratio is calculated as the ratio between the value of high quality liquid assets (HQLA) and the amount of net cash outflows, calculated for a 30 calendar day liquidity stress scenario [4]:

$$\frac{\text{Stock of HQLA}}{\text{Total net cash outflows over the next 30 calendar days}} \geq 100\% \quad (1)$$

Specifically, the LCR was introduced as planned on 1 January 2015, but the minimum requirement will begin at 60%, rising in equal annual steps of 10 percentage points to reach 100% on 1 January 2019. This graduated approach is designed to ensure that the LCR can be introduced without disruption to the orderly strengthening of banking systems or the ongoing financing of economic activity [5].

The indicator is characterized by incorporation of various risk assessment model of liquidity within the 30-day stress scenario based on the analysis of the crisis in 2007, in particular:

- asset accounting only with a high degree of liquidity (to determine the criteria of high quality liquid assets and the application of discount);
- availability and reliability of the funding sources (to establish different levels of outflow for each type of commitment);
- limited access to income (to account income in assessing the liquidity to a limited extent, as well as different levels of inflows for each type of revenue).

HQLA consists of cash or assets that can be converted into cash at little or no loss of value in private markets to meet its liquidity needs for a 30 calendar day liquidity stress scenario. HQLA are comprised of Level 1 and Level 2 assets. Level 1 assets generally include cash, central bank reserves and certain marketable securities backed by sovereigns and central banks, among others. These assets are typically of the highest quality and the most liquid, and there is no limit on the extent to which a bank can hold these assets to meet the LCR. Level 2 assets are comprised of Level 2A and Level 2B assets. Level 2A assets include, for example, certain government securities, covered bonds and corporate debt securities. Level 2B assets include lower rated corporate bonds, residential mortgage backed securities and equities that meet certain conditions. Level 2 assets may not in aggregate account for more than 40% of a bank’s stock of HQLA. Level 2B assets may not account for more than 15% of a bank’s total stock of HQLA.

Table 1 provides information on the various HQLA classes in accordance with the requirements of the Basel III.

Table 1. The list of high quality liquid assets in accordance with the requirements of the Basel III standards.

The level of HQLA	The amount of discount
Level 1 assets:	
<ul style="list-style-type: none"> coins and banknotes; satisfying the requirements securities issued by states, central banks, public sector enterprises, development banks; satisfying the requirements reserves at the central bank; debt securities of the state or the central bank in the home jurisdiction of the bank for the countries with the level of risk more than zero. 	100%
Level 2 assets (maximum 40% of the HQLA's total amount)	
Level 2A assets: <ul style="list-style-type: none"> securities issued by states, central banks, public sector enterprises, development banks that satisfy the requirements for the risk level of 20%; corporate debt securities with a rating of AA- or higher, satisfying the requirements; secured bonds rated AA- or higher. 	85%
Level 2B assets (maximum 15% of the HQLA's total amount): <ul style="list-style-type: none"> mortgage debt securities; corporate debt securities with a rating of BBB- to A+; shares. 	75% 50% 50%
Source: <i>Financial Stability Report of Kazakhstan, December 2014</i> [6, p.72]	

Figure 2 is a graphical representation of LCR's calculation for commercial banks at January 1, 2015.

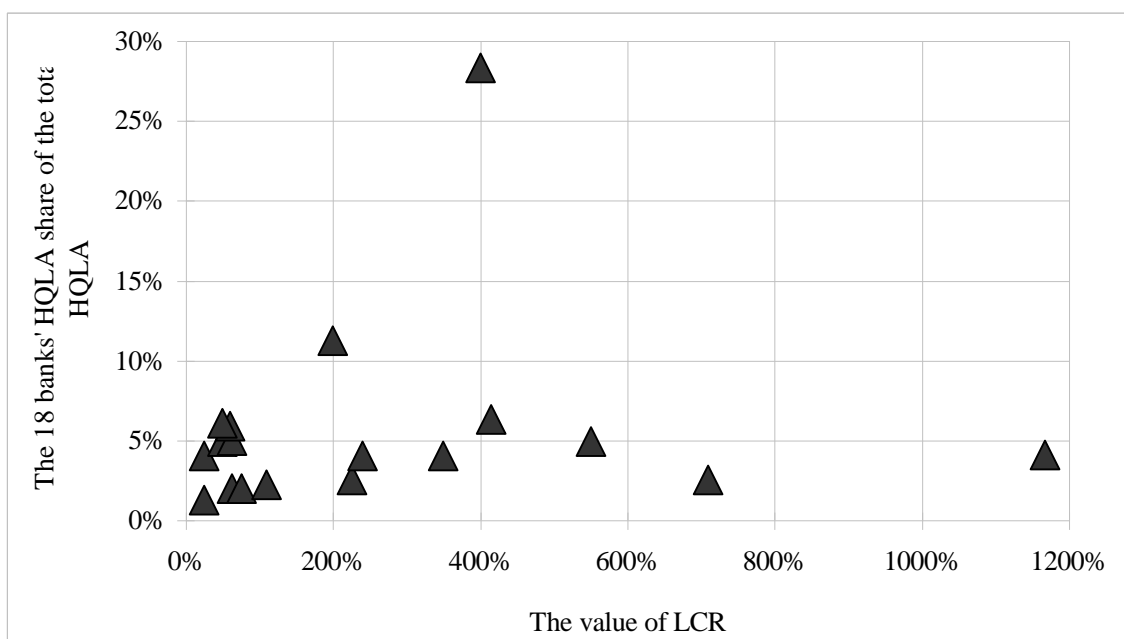


Figure 2. The value of bank LCR and the share of HQLA on January 1, 2015.
Source: calculated by the author, based on the NB of RK data [7].

LCR calculations were conducted for 18 banks, its total assets are more than 90% of the assets of the banking system. The basis of calculating the LCR was a conservative estimate, such as volume HQLA and the level of banks outflows.

As seen in Figure 2, on 01.01.2015, the weighted average of the total LCR for the 18 banks is 122%, in tenge is 91% (minimum value – 13%, maximum value – 5120%), in foreign currency is 162% (minimum value – 14%, maximum value – 1308%).

Due to the large disparities in the amounts of assets and liabilities by currency, positions of most banks in LCR by currency are not balanced. In addition, 10 out of 18 banks showed a decline in the value of LCR for 2014, especially banks, in which deposits of legal entities dominate the deposit base, since it installed on the highest churn rate. Inflows banks mainly comprise cash held in accounts with other banks, and operating income from loans to large corporate clients, small and medium businesses as well as individuals. Level 1 assets present almost all the HQLA. This fact demonstrates the conservative approach while maintaining the liquidity of banks, but it may be due to lack of other high-quality and highly liquid instruments with an acceptable yield.

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КОРПОРАТИВТІК ТАБЫС САЛЫҒЫНЫҢ НЕГІЗГІ ЕРЕКШЕЛІКТЕРІ

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Көптеген мемлекеттерде заңды тұлғалардың табысына салынатын салық (корпоративтік салық) компанияның таза табысынан үйлесімді салық мөлшерлемесімен алынады. Салық салынатын таза табыс жалпы түсім мен өндіріс үдерісі барысында жұмсалған шығындар арасындағы айырма негізінде анықталады. Ал компанияның табысы бөлінетін және бөлінбейтін деген екі бөліктен тұрады. Салық салу барысында бұл бөліктер өз алдына мынадай түрлерге топталады: