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Improving the Methodology of Liquidity of Commercial Banks in the Digital Economy

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ABSTRACT: This article discusses theoretical approaches to studying the nature of commercial bank liquidity. The article also discusses the essence of the Bank's economic content, liquidity and solvency. A comparative analysis of the liquidity management methods of a commercial bank is analyzed.

KEYWORDS: Economists, Bank's Liquidity, Deposit S, Loans, Investments, Liquidity, Solvency, Profitability, Credit, Currency, Market, Settlement, Leasing, Cash, Factoring.

INTRODUCTION

Despite the great interest of economists in the problem of managing a bank's liquidity and an increase in theoretical and practical developments in the field of methodology of bank financial analysis, there is a lack of a unified methodological and methodological base that allows one to assess one of the important indicators of a bank's financial stability - liquidity. Its results are necessary to substantiate the strategy and make management decisions by the bank in the field of maintaining a sufficient level of balance sheet liquidity, managing the risk of unbalanced liquidity of the bank and forming an organizational substructure for liquidity management.

The role of commercial banks as regulators of monetary circulation, centers of accumulation of monetary resources and their redistribution makes them responsible for making decisions in the field of financial management. "Stable banks can be considered those that slightly reduce their business activity in line with the decline in overall business activity." The stability of the bank, from our point of view, is directly related to such concepts as the stability and reliability of the bank. To maintain their reliability, stability at the highest level, banks formulate a policy for managing current, medium-term and long-term liquidity, maintaining an adequate level of equity capital, pursuing an effective credit and investment policy, managing the bank's solvency, focusing on the optimal level of profitability and professional management. The concept of "bank liquidity" is directly related to the concept of "banking management". Liquidity management, as a component of financial management, borders on the following sections: development of a policy for conducting bank operations (deposits, loans, investments); banking marketing; management of bank assets and liabilities; profitability management; solvency management; equity management; loan portfolio management; bank risk management.

The reliability of the bank is a guarantee that the bank in its activities, along with its own commercial interests, ensures the safety of funds of customers and investors, depositors, is guided by the principles of mutually beneficial partnerships and maintains liquidity and solvency at the proper level. The main components of the bank's reliability are: liquidity, solvency, profitability.

LITERATURE REVIEW

Some scholars identified the concept of "liquidity" of a bank with the concept of "solvency" of a bank - the ability of a bank to meet its obligations in due time and in full. But the bank's clients need from him not only to ensure the safety of invested funds and timely payments, but also to receive loans from the bank for the purpose of smoothly carrying out their business activities and expanding its scale. Therefore, the requirement for the bank to be considered liquid was eventually supplemented: a liquid bank, in addition to fulfilling its debt obligations, had to also provide loans to its customers at their request and take into account commercial bills.

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Economists of our country, in particular prof. Sh.Abdullaeva, prof. A.Omonov, doctor of economic sciences O.Sattarov doctor of economic sciences A.Abdullaev and other economists also expressed their views and opinions on the liquidity of banks, but in all of them the question of what the liquidity of banks in the digital economy is not considered as the main object [9].

Development of the classification of factors affecting the liquidity of the bank:

A bank is a complex dynamic system operating in a changing market environment, which must be considered from the point of view of a systematic approach. The most important requirement for such an integrated system is to ensure its liquidity and solvency, a state of stable equilibrium under the influence of internal and external factors.

Traditionally, external factors affecting liquidity include: the general economic conditions of banks, the state legal mechanism, the level of development of the legislative framework, the degree of regulatory and legal support of banking activities, the stability of the political situation, the state of monetary circulation, competition between banks, the degree of development of banking external infrastructure. Internal factors are divided into three groups: organizational factors - the state of bank management and internal control, the ability to innovate, the organizational structure of bank management, the effectiveness of the banking risk management system; technological factors - the level of technical equipment with automation and computer technology, focus on the development of modern banking technologies, market demand for new banking products; economic factors - quality of assets and liabilities, return on assets, liquidity of assets, return on assets, share of assets weighted by risk groups.

The novelty of the author's approach Ivanov V.V. consists in the additional inclusion of the state of the financial market, national and world economy, force majeure circumstances in the range of external factors affecting the liquidity of the bank. Among the new internal factors highlighted by the author, one can name the bank's liquidity strategy and its internal policy [10].

The likelihood of unfavorable influence of factors on the bank's liquidity is characterized by risks. It seems important to us to present the classification of internal risks affecting the bank's activities in the form of a diagram. Internal risks, by the nature of banking operations, can be divided into four groups:

1) Risks associated with assets are credit, currency, market, settlement, leasing, cash, factoring;

2) Risks associated with liabilities - this is the risk of deposit and other deposit operations, the risk of attracted interbank loans;

3) Risks associated with the quality of asset and liability management - this is interest rate, unbalanced liquidity, insolvency, capital structure, capital shortage, strategic;

4) Risks associated with the implementation of financial services - operational, technological, innovation, accounting, administrative, security.

The reason for the increase in liquidity risk may be not only the impossibility of promptly attracting funds in the interbank market, but also planning errors, incompetence of staff, low quality of the loan portfolio, that is, the threat of non-repayment of a large share of loans issued.

Interest rate risk arises when the timing of the return of funds provided and borrowed does not coincide, or when rates on assets and liabilities are set in different ways (fixing against variables). Interest rate risk includes the risks of non-receipt of interest on loans issued, unforeseen changes in interest rates on assets and liabilities due to mismatch of maturities. The level of interest rate risk depends on the dynamics of interest rates, changes in the structure of assets (the ratio of the size of loans and investments, assets with a fixed and floating rate), the dynamics of their prices in the market, changes in the structure of liabilities (the ratio of equity and borrowed funds, time and savings deposits, deposits up to demand). Thus, interest rate risk is closely related to liquidity risk. Accounting for interest rate risk is important when issuing medium-term and long-term loans, interest rate risk management is focused on matching attracted and allocated resources by their maturity and with a fluctuating rate, calculating "gaps"; risk insurance: swap transactions, options, interest rate futures.

Market risk is associated with possible depreciation of securities. It arises as a result of fluctuations in the rate of interest; changes in the profitability and financial well-being of issuing companies, inflationary depreciation of money. Foreign exchange risk is associated with the likelihood of cash losses as a result of changes in the market value of assets and liabilities and unpredictable fluctuations in foreign exchange rates. Political risk is determined by the stability and predictability of the political climate in the country, the level of confrontation between individual political forces, the possibility of a sharp change in the priorities and direction of the country's development, relations with countries-counterparties in the foreign economic activity of clients. The risk of changes in market conditions appears when sharp and unfavorable changes occur in certain segments of the financial market.

For a specialized bank, such a situation can significantly reduce its reliability, for universal banks, the loss of individual markets is less painful, but it can cause disruptions in their work. Country risk depends on the political and economic stability of client countries or counterparty countries, importers or exporters working with a given bank. The risk of force majeure depends

on the occurrence of force majeure circumstances arising from extraordinary events: natural disasters, wars, embargoes, currency restrictions, strikes.

It is necessary to highlight the strategic risk associated with errors in strategic analysis and planning due to incorrect formulation of the bank's goals, inadequate resource provision for their implementation, and an incorrectly chosen approach to risk management.

Larionova I.V. believes that the compliance of the bank's liquidity level with the established norms is complemented by an analysis of the factors that influenced their change, among which, he distinguishes: the need for liquidity in the past; current level of liquidity; availability of highly liquid assets; stability of funding sources: composition and stability of the deposit base, seasonal, cyclical factors that determine the level of deposits; the level, frequency and size of borrowing; assessment of future financing needs: seasonal, cyclical factors that determine the demand for credit resources; the size and data on the implementation of planned loans, the use of bank guarantees, unforeseen expenses; the cost of funds; termination of attracting additional capital: the possibility of selling other assets; the ability to borrow (including reserve lines of credit and the use of the bank's reputation); current asset quality and its forecasting: analysis of the state of the loan portfolio and securities portfolio; the ability to provide income now and in the future; current and future capital position; market forecasts; the overall effectiveness of the bank's internal policy.

When managing the liquidity of a bank's balance sheet, from our point of view, it is necessary to take into account the following factors:

a) The structure of the bank's assets. The greater the proportion of first-class liquid assets in the total assets, the higher the liquidity of the bank's balance sheet.
b) The degree of risk of individual active operations. The higher the share of high-risk assets in the balance sheet, the lower the bank's liquidity
c) The degree of creditworthiness of borrowers, affecting the timely repayment of loans. The greater the share of high-risk loans in the bank's loan portfolio, the lower its liquidity.
d) The structure of the balance sheet liabilities. For demand deposits, depositors have the right to demand money at any time, and term deposits are at the bank's disposal for a certain period. An increase in the share of demand deposits and a decrease in the share of time deposits reduce bank liquidity.
e) The structure of deposits and loans received from banks and other credit institutions and the degree of dependence on the interbank lending market.

To assess the stability of the direction of credit potential funds into assets, the analysis of the sources of these funds is of particular importance. According to the degree of stability, the funds of the bank's credit potential are divided into: completely stable - the bank's own funds; funds deposited for a certain period; interbank loans; stable - all deposited funds upon presentation of the bank's principal; unstable - deposited funds that appear periodically and the dynamics of which are difficult to foresee.

To determine the degree of liquidity of assets, they are divided into a number of groups:

- liquid assets, that is, those that are in immediate readiness to repay the bank's liabilities: the bank's cash desk, funds on correspondent accounts with other banks, currency, precious metals, government securities, first-class commercial bills;
- working assets - assets that can easily be converted into monetary resources (assets, the period of which is less than 30 days) - loans with a maturity of 30 days, other payments to the bank in the same terms, quick-selling securities;
- Difficultly liquid and illiquid assets: not overdue short-term loans, long-term loans, main buildings and structures, hopelessly overdue debt.

It should be borne in mind that liquidity is directly related to the profitability of the bank: achieving maximum profit requires placing funds in risky assets, which leads to a reduction in liquidity. The need to provide liquidity, on the contrary, forces banks to limit risky investments and reduces the possibility of obtaining high profits. Therefore, the goal of the bank's strategy in managing active and passive operations may be to maximize profits without going beyond liquidity.

Liquid banks with a large share of highly liquid assets are often less profitable and profitable than less liquid banks. An aggressive policy pursuing an increase in the return on assets is usually accompanied by a decrease in balance sheet liquidity and an increase in liquidity risk.

It seems appropriate to us, under the "liquidity risk" to understand the likelihood of losses for the bank due to the need to quickly convert financial assets into means of payment due to the lack of liquid resources at its disposal for the timely and full satisfaction of the requests of creditors and depositors. In an unfavorable combination of circumstances, clients

may simultaneously demand settlement with them for the bank's liabilities, and due to the mismatch in the timing and amount of repayment of debts on assets and liabilities, the bank may not have sufficient funds to meet these requirements.

When defining the essence of the concept of "liquidity risk", one should take into account the classification of its components given by S.A. Filin. The author has identified the following types of liquidity risk:

1) The risk of asset liquidity;
2) The risk of a shortage of cash or other highly liquid financial assets;
3) The risk of unbalanced liquidity or inconsistency of the resource structure in terms of terms and volumes;
4) Liquidity risk of individual financing objects;
5) Risk of liquidity of the investment portfolio;
6) Risk of liquidity of the financial market;
7) Prudential liquidity risk.

"Risk of asset liquidity means the likelihood of financial losses caused by a decrease in the level of liquidity of an asset due to the inability of the asset to be convertible into monetary form in the required amount in a sufficiently short period of time without losing its real market value if previously adopted financial decisions are changed and the need to reinvest financial assets due to a change in their valuation quality and use value in the current market environment. The risk of a shortage of cash or other highly liquid financial assets is the threat of a shortage of cash or other highly liquid financial assets to meet obligations to counterparties.

Comparative analysis of liquidity management methods of a commercial bank:

In the process of liquidity management, it is necessary to take into account two components: strategic and tactical. The main theories of liquidity management include: "the theory of commercial loans (the basic principle is the preference for short-term commercial loans over investments); the theory of movement (repeats the theory of commercial loans, but does not ignore short-term speculation in the securities market); the theory of expected income (the basis for setting the maturity of loans is tied to the timing of the borrower's income); the theory of liability management (increasing the share of stable liabilities) ".

Based on the analysis of classical theories, it is possible to determine alternative approaches to maintaining the bank's liquidity: to have the required amount of liquid assets in stock, or the ability to attract them at any time from the financial market. These alternatives determine the strategic component of the bank's liquidity management process, which corresponds to the asset management strategy, the liability management strategy and the asset and liability management strategy.

RESULTS AND DISCUSSION

In practice, it is necessary to use a comprehensive strategy, since it allows simultaneously taking into account the strengths of the asset management and liability management strategies, correcting their negative consequences, for example, a decrease in the level of profitability when creating excessive liquidity reserves, a high level of interest rate and insolvency risk when focusing on maintaining liquidity through the purchase of assets in the money market at the time of the formation of "liquidity gaps". It is important for the bank to determine the quantitative parameters of the ratio of accumulated liquidity (existing in the form of cash reserves or reserves of the second priority) and purchased liquidity (estimated as the total volume of credit limits open to the bank), and the calculation of the bank's total need for liquidity. In addition to the task of limiting the risk of unbalanced liquidity, an asset and liability management strategy is being developed to optimize performance through open positions in various financial market instruments (foreign exchange, interest rate positions). If a bank has a zero position in a certain financial instrument, this means that its claims and obligations to deliver this type of asset are equal and not affected by positional risk. Maintaining a complete balance between assets and liabilities corresponds to a "conservative strategy", which is advisable to apply when there are chaotic fluctuations in interest rates or their trend cannot be predicted.

An alternative is the "aggressive strategy", in which the bank uses the observed trends in interest rates, foreign exchange rates to generate additional profit. Achieving a permanent zero position on positional risk is difficult when it comes to currency and interest rate risk, so control over the gap is necessary, i.e. maintaining it at a level at which open positions will not bring significant losses. It is considered that if the gap (claims - liabilities for a given asset / claims for an asset) is within 10%, then the bank has a normal position, 10% -12% - a tactical position (a position for a short-term period when it is possible to predict changes in market conditions, and the bank will have time to quickly close the position in case of negative changes), over 12% - a strategic position (valid for a long-term period)".

1. Establishment of the share of allocated funds as a primary reserve. Primary reserves are the main source of liquidity and include those types of assets that can be immediately used to pay off withdrawn deposits and satisfy loan applications. The first priority reserves include mandatory reserves that serve as security for deposit commitments and cash balances.

In practice, the amount of the reserve is determined on the basis of the average for approximately the same banks, the ratio of cash assets to the amount of deposits or to the balance sheet currency.

2. Creation of "non-cash" liquid assets that generate income. The second priority reserves include highly liquid earning assets that can be converted into cash with minimal delay and insignificant risk of loss (a portfolio of securities, sometimes funds on loan accounts). The volume of secondary reserves is determined by the factors influencing the changes in deposits and loans.
3. Formation of a portfolio of loans.
4. Determination of the composition of the securities portfolio. The funds remaining after meeting the loan needs of customers can be invested in long-term first-class securities. The investment portfolio should generate income for the bank and serve as a supplement to the second priority reserve as the maturity of long-term securities approaches.
5. The essence of the asset conversion method is that resources are divided according to the criterion of their speed of movement. The method is used if there are several centers of liquidity and profitability within the bank. The advantage of the method is that a decrease in the share of liquid assets and the investment of additional funds in loans and investments leads to an increase in the rate of return. The increase in the rate of return is achieved by eliminating the surplus of liquid assets that oppose savings and time deposits and fixed capital. Disadvantages of the Asset Conversion Method:

In Western Europe, the United States and other countries, there are a number of causes and factors affecting the liquidity and financial instability of commercial banks, including macroeconomic instability, lack of effective and improved supervision, weak governance, and operational disruptions. etc. are among them.

Table 1 The world's leading commercial banks providing digital banking services in terms of the number of customers [7]

№	Bank name	Founding company	State	Number of customers (mln)
1	ING Diba	ING Group	Germany	8,5
2	CapitalOne 360	CapitalOneFinancial	United States	7,8
3	USAA Bank	USAA	United States	7,0
4	FNBO Direct	FirstNationalofNeberaska	United States	6,0
5	RakutenBank	Rakuten	Japan	5,0
6	TinkoffBank	-	Russia	5,0
7	TIAA Direct	TIAA-CREF TrustCompany	United States	3,9
8	DiscoverBank	DiscoverFinancialServices	United States	3,5
9	AliorBank	-	Poland	3,0
10	DKB AG	-	Germany	3,0

Table 1 shows the top 10 commercial banks in the world in terms of the number of customers, providing digital banking services in 2018. In Germany, ING Diba Bank issued 8.5 mln. 5 US commercial banks, including 7.8 mln. with the client CapitalOne 360 Bank, 7.0 mln with the client USAA Bank, 6.0 mln. FNBO Direct Bank with a customer, 3.9 mln TIAA Direct Bank and 3.5 mln Russia's TinkoffBank rank sixth among CIS countries in the top 10 with 5.0 million customers.

The banking system in China is seen as an important tool of policy. (Fungachova and Korhonen, 2011). Chinese banks are also making large-scale construction investments and helping to strengthen the privatization of state-owned enterprises.

With poor credit risk management (Li, 2009; Bonin & Huang, 2001), banks have accumulated large amounts of defaulted debt. At the same time, in recent years, banks have been facing a series of liquidity shortages. The People's Bank of China (PBOC) in 2013 even supported the liquidity of several banks.

Lack of a close relationship between the speed of circulation and fluctuations in the total amount of deposits of a particular group, while some customers withdraw money using checks, and others deposit money into the bank, the balances on demand deposits can fluctuate during the year as little as 10%.

The method assumes independence of the sources of funds from the ways of their use, which is rarely observed in practice. Banks seek to attract more deposits, as clients take loans from the same bank where the accounts are opened. Attracting new deposits means at the same time the obligation of the bank to satisfy part of the applications for loans from the depositors, that is, part of the new deposits is directed to lending to depositors.

CONCLUSION

Based on the study of the problems of managing the bank's liquidity and the risk of unbalanced liquidity, the main conclusions were drawn.

-Bank liquidity - its ability to fulfill its obligations to counterparties, customers and depositors on time and in full, to ensure balance sheet liquidity and minimize the risk of unbalanced liquidity, to maintain the volume of highly liquid and term assets at the required level.

-The liquidity of the balance sheet should be considered as maintaining the structure of the bank's assets and liabilities at a level that corresponds to the optimal ratio of accumulated and purchased liquidity.

-Liquidity of assets - a characteristic of their quality, the ability to turn this type of asset into a cash form (cash) within a short period of time and without significant loss of its value, and therefore, they are divided into highly liquid, liquid, long-term liquidity and illiquid.

The process of managing the risk of unbalanced liquidity consists in the implementation of the following stages: situational planning of the liquidity state; assessment and management of the liquidity position of the balance sheet; formation of a strategy for achieving balanced liquidity; creation of reserve sources of liquidity; ensuring the possibility of promptly raising funds, that is, using sources of purchased liquidity; assessment of potential outflows of funds.

The balance sheet liquidity management mechanism must be presented as a set of measures to manage the risks of instant and medium-term liquidity.

The purpose of the bank's liquidity management is concretized as the timely determination of the need for liquid funds necessary to maintain the dynamic ability to fully meet the expected and unplanned demand for funds for the bank to fulfill its contractual obligations, taking into account the minimization of costs, liquidity risk, and ensuring the profitability of operations.

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