FEATURES OF BANKS` LIQUIDITY MANAGEMENT IN THE CONTEXT OF THE INTRODUCTION OF THE LCR RATIO IN UKRAINE

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Abstract: The article considers the specifics of the introduction of the liquidity coverage ratio in the practice of commercial banks of Ukraine. The practice of liquidity regulation in crisis situations in the financial markets has shown that the old liquidity standards N4 and N5 do not fully meet the need to ensure the stability of commercial banks. At the same time, the application of the liquidity coverage ratio (LCR) to regulate liquidity, provides sufficient financial stability of banks by preventing and reducing liquidity risk. This requires additional research on the peculiarities of the transformation of approaches to bank liquidity management when changing mandatory liquidity standards. The peculiarities of changing the liquidity management tools under the application of the LCR standard are determined. At the same time, the introduction of the LCR standard not only contributes to the overall improvement of the bank's liquidity management efficiency, but also to the overall stability of the banking system.

Keywords: Banking system, LCR, Liquidity, Liquidity management, Liquidity standards.

1 Introduction

Bank liquidity is one of the most important systemic characteristics of banking, which requires study, analysis, and effective management. It should be noted that the issues of ensuring the effectiveness of liquidity management of commercial banks and the banking system, in general, are significant, as the task of balancing liquidity and efficient distribution of free funds of the bank are key to the management of banking institutions.

The main reason for this is that the low level of liquidity creates an additional burden on the interbank market and requires additional regulatory measures by central banks. Instead, the risk of excess liquidity negatively affects the level of profitability of banks, when financial resources are diverted from circulation, ensuring the proper level of liquidity of the bank, but do not bring it a profit, forcing the banking institution to increase interest rates and commissions on active operations loans.

The introduction by the Basel Committee on Banking Supervision in 2015 of the liquidity coverage ratio (LCR) posed a need for commercial banks to ensure a sufficient level of high-quality liquid assets with the overall goal of improving the short-term liquidity of banks.

The relevance of this indicator is of particular importance in Ukraine in terms of the orientation of the National Bank of Ukraine (NBU), which in Ukraine is the Central Regulatory Bank, to the wider implementation of standards of banking regulation, in line with the decisions of the Basel Committee and the provisions of the European Community. In addition, the introduction of new liquidity regulation standards is determined by plans to reform the banking supervision system and introduce new prudential requirements for liquidity in Ukraine.

Therefore, there is a practical need to study the transformation of approaches to the application of liquidity management tools of commercial banks of Ukraine after the implementation of the provisions of Basel III, in particular – the liquidity coverage ratio LCR.

2 Literature Review

Effective management of bank liquidity largely depends on understanding its essence and role in the overall mechanism to ensure the stable functioning of the bank in the market. However, approaches to understanding the nature of liquidity and the principles of its management are currently quite controversial and may be interpreted differently by different researchers.

However, it is necessary to note the significant contribution to the study of practical aspects of liquidity management of commercial banks, which was carried out by such scientists as O. Agres [1], O. Apostolyuk [2], I. Balaniuk [3], O. Binert [4], Y. Chaliuk [6], M. Dziamulych [7-14], V. Granaturov [15], L. Horoshkova [16], A. Hrebennikova [17], K. Kostetska [18], T. Kravchenko [19], O. Rudenok [24], G. Shamborovskyi [25], T. Shmatkovska [26-28], S. Shmitz [29], A. Skrypnyk [30], R. Sodoma [31-34], O. Stashchuk [35-37], I. Voronenko [40], I. Yakoviyk [41], I. Yanenkova [42], Ya. Yanyshyn [43], O. Yatsukh [44], I. Zhurakovska [45] and others.

It is necessary to note the study of the essence of the characteristics of the concept of “liquidity”, which is revealed in the works of O. Pavliuk. In particular, as a result of the analysis, he argues that the liquidity of a banking institution is the bank`s ability to ensure timely and full implementation of its financial obligations and to meet part of the economic system`s need for cash in an amount adequate to its resource potential [23]. In our opinion, this approach needs to be clarified in terms of determining the maturity of the bank, as short-term and long-term liabilities provide different approaches to the formation of liquid assets to repay them.

In general, agreeing with the proposed approach, we consider it necessary to note that to understand the specific meaning of the concept of “bank liquidity” must also take into account the fact that it is determined by the bank`s ability to meet the requirements of its creditors and borrowers. That is, liquidity is directly dependent on resources, in particular – financial constraints of banking, which directly affect its management policy.

We should also pay attention to the study of V. Tkachuk, who identified the liquidity of the bank as its ability to timely and least costly meet the requirements for repayment of obligations and be able to meet the needs of its customers in lending [39]. The relevance of this approach is due to the fact that not only the bank itself is interested in providing liquidity, but also its customers and the regulator bank. That is why maintaining the liquidity of each individual bank and its entirety is defined as a priority of the Central Banks.

In addition, it is worth noting the research of K. Larionova and V. Donchenko, who argue that the key to ensuring the stability of the financial institution is not only sufficient capital but also sufficient liquidity. The authors focus on the classical definition of bank liquidity, which is defined as the basis for the effective performance of individual functions of a bank [20].

In our opinion, this approach is debatable, as bank liquidity management is a rather complex process, which must include a number of successive stages of assessment, analysis, forecasting, control, and regulation.

Thus, we determine the need to update approaches to understanding the essence of bank liquidity management in the transformation of regulatory approaches to its provision in the implementation of Basel III.

3 Materials and Methods

For a long time, liquidity regulation of commercial banks was based on the requirements of regulatory banks to comply with mandatory liquidity ratios, which differed in terms and timing of liquid assets included in the calculation. Since the liquidity management of banks is done by forming a certain structure of their assets based on the definition of mandatory liquidity ratios, the difference in the order of their calculation makes it possible to conduct an analytical assessment of changes in approaches to liquidity management. At the same time in Ukraine, instantaneous and current liquidity were regulated by N4 and N5 standards, respectively.

The instantaneous liquidity ratio (N4) characterizes the minimum amount of highly liquid assets that a bank needs to meet its current obligations during one transaction day. The calculation of this standard is carried out by the following method:

$$N4 = \frac{A_{hi}}{L_c}$$

where: Ahl – highly liquid assets;
Lc – current liabilities of the bank.

The regulatory value of the coefficient N4 must be at least 20%, i.e. at any time 1/5 of all assets of the bank must be in the form of money and their equivalents to meet this requirement.

The current liquidity ratio (N5) characterizes the minimum required amount of the bank`s assets to ensure the fulfilment of the current amount of liabilities within one calendar month. Its calculation is as follows:

$$N5 = \frac{A_{31}}{L_{31}}$$

where: A_{31} – assets with a maturity of up to 31 days;
L_{31} – liabilities of the bank with a maturity of up to 31 days.

The normative value of the N5 coefficient should be at least 40% [21].

In accordance with the recommendations of the Basel Committee, the Association Agreement with the EU, and the NBU plans in accordance with the implementation of EU legislation in Ukraine, these standards in the liquidity management system are replaced by bank liquidity risk management using the LCR ratio. This process is based on the norms of Directive 2013/36 / EU (CRD IV), EU Regulation № 575/2013 (CRR), and EU Regulation №2015 / 61 and provides for increasing the resilience of Ukrainian banks to short-term and long-term liquidity shocks.

The calculation of the LCR coefficient is performed according to the following method [38]:

$$LCR = \frac{High\_quality\_liquid\_assets}{Net\_cash\_outflow\_within\_30\_days} \geq 100\%$$

In the process of calculation it is necessary to comply with the following requirements for high-quality liquid assets allocated in the structure of the bank`s assets:

- The assets must be unencumbered within 30 days, i.e. there are no legal/contractual/regulatory/tax or other obstacles to their transfer, sale, or other alienation;
- At any time the assets can be converted into cash without loss of value;
- Assets have a low level of risk, low volatility, their value is easy to determine with the appropriate level of reliability;
- Assets are not issued by the bank or its affiliates;
- For securities additionally – assets are objects of the active market and/or are accepted by the NBU as collateral for refinancing operations.

It should also be noted that according to the requirements of the NBU in Ukraine, the calculation of LCR is carried out in two positions: in all currencies and in foreign currencies in the hryvnia equivalent.

4 Results and Discussion

In practice, the bank`s liquidity management is implemented through a mechanism for the regulatory bank to establish regulatory restrictions in the field of forming a portfolio of assets of a commercial bank in order to ensure its solvency. The bank`s management forms an asset management policy based on established regulatory requirements, focusing on the fact that a certain part of the bank`s available resources will not be directly involved in active operations and will not make a profit, but will ensure compliance with the bank`s obligations to depositors.

For a long time, liquidity management was based on mandatory compliance with liquidity standards, which set specific requirements for various groups of assets, the presence of which to a certain extent was mandatory for the bank in a certain period of time. At the same time, the liquidity management mechanism of commercial banks is focused on solving problems with the fulfilment of their obligations mainly in the short and medium-term.

In general, it should be noted that liquidity ratios are not only mandatory standards but also play an important role for commercial banks themselves, ensuring an adequate level of confidence in them by depositors in times of financial instability in the markets. In addition, compliance with liquidity standards helps to increase confidence in the field of short-term interbank lending, in particular – on overnight loans.

In Ukraine, such standards included the liquidity standards set by the National Bank of Ukraine N4, N5, N6, compliance with which allowed the bank to meet its obligations within one day, one month, and one year [21]. However, this approach was based on the established relationship between the volume of assets and the volume of liabilities [5]. This approach has resulted in two key issues:

1. During periods of market growth, banks did not receive part of the profit from assets that were not involved in operating activities but remained in the bank`s accounts to ensure compliance with liquidity ratios.

2. During the crisis, banks suspended operations, accumulating a huge excess of liquidity. However, the extremely high values of liquidity ratios were no signs of the bank`s overall solvency, as liquidity did not affect the cash gaps in banks` balance sheets. All this distorted the NBU`s liquidity management mechanism for the banking system as a whole.

In addition, the N5 standard did not take into account the fact that not all deposits could potentially leave the bank and, in turn, not all loans will be repaid. Therefore, the specifics of this standard were to take into account the static balances of liquid assets, taking into account their maturity.

Therefore, from 2019, the NBU decided to change the liquidity management system, introducing the LCR and Net Stable Funding Ratio (NSFR) recommended by the Basel Committee on Banking Supervision as mandatory instead of liquidity standards. The LCR ratio was related to short-term liquidity and replaced the standards N4 and N5. The specificity of this indicator is also that the liquidity coverage ratio simulates the liquidity position of a commercial bank under realistic stress, and also operates the expected future cash flows of a banking institution, where different components have different weights depending on their liquidity [38].

If we talk about the liquidity coverage ratio (LCR), its introduction aims to promote the stability of the banking sector by providing the bank with a sufficient stock of unspent liquid

assets of high quality, which can be easily and quickly converted into cash. This principle differs from the one on which liquidity regulation was based by short-term standards N4 and N5. Consider the difference using the comparative characteristics of the old liquidity ratios with the liquidity ratio LCR (Table 1).

Table 1: Comparative characteristics of liquidity ratios N4, N5, and ratio LCR

Criterion	Ratios N4 i N5	Coefficient LCR
Time limits	N4 – 1 operating day; N5 – 1 month	1 month
Normative value	N4 – 20%; N5 – 40%	100%
Use of scenarios in calculating liquidity	The system of economic standards does not take into account possible scenarios and sets the minimum liquidity levels of the bank's balance sheet for certain time constraints	The position on the need to take into account possible scenarios is actively presented
Accounting for currency risk	Calculation of liquidity ratios of the NBU in UAH	Calculation of ratios for each major currency (depending on its share in the bank's balance sheet)
Operational regulation of liquidity	It is provided by monitoring the state of liquidity based on the results of the bank's compliance with the instant liquidity ratio	Operational control over the liquidity of banks is not provided at the macro level
Taking into account the level of liabilities components` risk and assets of the bank	Not provided	Provided

* Source: [21]

Thus, it can be argued that the Basel III standard LCR, to a greater extent than standards N4 and N5, is aimed at ensuring the financial sustainability of each individual bank and the banking system as a whole. The reasons for this are the following:

1. Liquidity of banks is assessed not “as a stock” but “as a flow”, which allows to predict and forecast liquidity risks taking into account future income and liquidity needs and thus ensure the financial stability of banks by preventing and reducing liquidity risk.
2. According to the LCR, banks will have to have liquid assets that would cover 100% of short-term liabilities for less than one month.
3. Basel III standards, to a greater extent than liquidity standards, provide for the possibility of ensuring the financial stability of banks by preventing and reducing their liquidity risk.

Thus, it can be concluded that the application of the LCR ratio to a greater extent than the liquidity ratios of banks, allows ensuring the proper financial stability of banks by preventing and reducing liquidity risk.

Therefore, given the overall higher efficiency of liquidity management using the LCR ratio, it is necessary to assess the level of adaptation of Ukrainian banks to the introduction of new requirements (Figure 1).

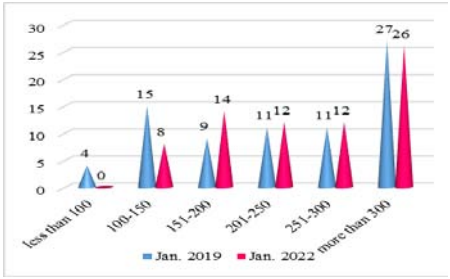

Figure 1 – Distribution of Ukrainian banks according to the level of LCR execution in all currencies at the beginning of 2019 and 2022

Source: calculated by the authors based on [22].

As you can see, in the three years since the introduction of the LCR, as mandatory for commercial banks in Ukraine, there are no banks that do not meet this requirement. At the same time, the share of banks with LCR values in excess of the permissible one increased by more than 50%. This is due to the application of new approaches to the formation of the structure of liquid assets. This was also facilitated by regulatory innovations of the NBU, which introduced a new instrument for emergency liquidity support of banks – Emergency liquidity assistance, which provides coverage of temporary liquidity shortages, provided that other sources of its support are exhausted. In addition, the NBU increased the capacity of banks by increasing the volume of foreign currency purchases on the interbank market from 0.5% to 1% of regulatory capital, which ultimately created the conditions for more effective management of foreign exchange liquidity of banks.

However, to assess the effectiveness of liquidity management with a new liquidity coverage ratio, it is necessary to assess its dynamics both in the banking system as a whole and for key system-forming and savings banks (Figure 2).

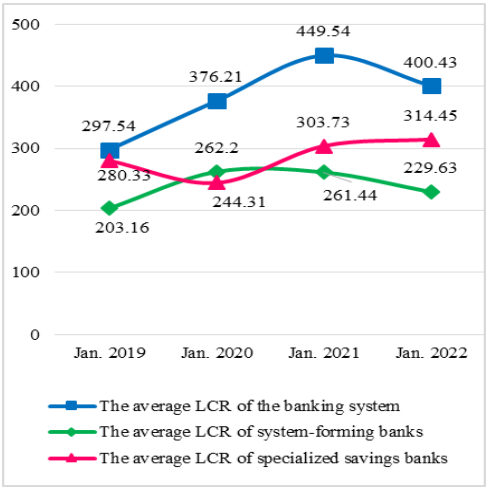

Figure 2 – Dynamics of the LCR ratio in all currencies in the banking system of Ukraine for 2019-2022

Source: calculated by the authors based on [22].

The results of the analysis show that in general, since the introduction of the LCR ratio in the practice of commercial banks of Ukraine, its average value in the banking system has increased by 102.89%. However, it is necessary to note the decline in this value as of January 1, 2022, compared to January 1, 2021. However, this trend is due to hypertrophied imbalances in financial markets resulting from the COVID-19 pandemic, which led to outflows from the banking system during 2021 and resulted in a general change in the structure of assets of commercial banks. An important criterion for the success of the application of the new indicator in the liquidity management system was the positive dynamics of the average value of LCR for systemically important banks in the banking system of Ukraine. In particular, during the analyzed period, the LCR indicator for this category of banking institutions managed to increase its average value to 314.45 percentage points, and the trend of its change is characterized by positive dynamics. Based on this, we can conclude about the stable financial condition of key banks in the country.

The dynamics of the LCR indicator for savings banks need to be assessed separately. As we can see, in the analyzed period it tended to decrease. This is due to the fact that the narrow specialization of savings banks to work with individuals` funds became a problem during the COVID-19 pandemic. These banks suffered the largest outflow of funds due to quarantine restrictions on the economic activity of the population, which forced them to withdraw funds from accounts to cover the

current expenditures of households. At the same time, the average value of the liquidity coverage ratio for savings banks is at a sufficient level and more than twice the minimum allowable value.

In general, it can be argued that the introduction of the LCR ratio resulted in the formation of sound management policies for unbalanced liquidity risk by commercial banks in Ukraine, which forced them to expand existing liquidity management tools and adapt them to dynamic changes in financial markets. All this has led to an increase in the overall level of their financial security and its individual components in particular.

In addition, the liquidity management of the bank in the implementation of the provisions of Basel III can be clarified in the sense that the qualitative and quantitative criteria for determining the level of risk and on which the liquidity of banking institutions is assessed can be expanded relative to the basic methodology of regulator.

5 Conclusion

The analysis showed that the introduction of the LCR liquidity ratio in Ukraine significantly contributed to the adaptation of banking regulation and supervision to European standards, and led to increased efficiency of the banking system of Ukraine as a whole by reducing the risk of liquidity loss due to new management methods. At the same time, stress testing took the leading place in the system of bank liquidity management tools, on the basis of which the current analysis of the bank`s sensitivity to liquidity fluctuations in different scenarios is conducted. Adherence to the normative value of LCR = 100% ensures the avoidance of negative scenarios in the short term.

At the same time, the achievement of positive effects from the application of the new liquidity ratio requires the implementation of a set of measures by both the regulator and commercial banks. In particular, the National Bank of Ukraine needs to differentiation the allowable targets for LCR and apply lower values for specialized banks, as well as for the entire banking system during periods of stable growth in order to reduce low-yield assets, which will stimulate business activity of commercial banks. In turn, to improve the efficiency of liquidity management of commercial banks, they need to review corporate governance models, liquidity strategies and tools for measuring liquidity risk through the introduction of internal stress testing and effective cash flow forecasting.

In general, to date, the standards introduced under the Basel III agreement are an important guideline that the National Bank of Ukraine should use in the process of improving and improving the efficiency of the banking system. However, it should be noted that in order to fully implement its main provisions, Ukraine`s financial sector must undergo a number of reforms, including reducing the shadow economy, stabilizing the foreign exchange market and removing problematic financial institutions, which provides grounds for further study of liquidity management trends in the new environment.

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Primary Paper Section: A

Secondary Paper Section: AE, AH