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IMPACT OF THE MONETARY POLICY OF THE CENTRAL BANK ON THE BANKING SYSTEM LIQUIDITY

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Abstract

This article is devoted to the research of the impact of the Central Bank's monetary policy on the the banking system liquidity. In addition, the article considers conditions of the impact of the assets and capital of commercial banks on their liquidity. In addition, the impact of commercial banks' quality of assets, deposits and their equity funds on the liquidity of the banking system has been analyzed with application of econometric methods. Moreover, with the application of econometric models, the article examines the impact of commercial banks' equity, the impact of economic performance benchmarks determined by the Central Bank and the instruments of the monetary policy implemented by the Central Bank on the liquidity of the banking system as a whole.

Keywords: commercial banks, liquidity, banking system liquidity, commercial bank liquidity, solvency, financial stability, deposits, liabilities, bank reliability, liquidity risk, reserve requirements, refinancing, monetary policy.

1. Introduction

During the years of independence, Uzbekistan has developed a two-tier banking system which is typical for the market economy, and currently this system is being improved. It should be noted, that there is always a market element called "competition" in the market economy. Under conditions of the economic competition, the top-target objective of banks is their ability to meet the requirements of their customers and counterparties, as well as perform appropriate obligations.

In compliance with the Decree of the President of the Republic of Uzbekistan № 3270 "On measures for further development and raising sustainability of the banking system of the republic" as of September 12, 2017, the issues of raising capitalization level, stability and liquidity of commercial banks have been determined as crucially important areas. During recent years, great efforts have been made to enhance the capitalization level of commercial banks of the republic, further strengthening public confidence in banks, as well as ensuring liquidity, solvency and stability of commercial banks.

Liquidity of the banking system implies ensuring timely, full and uninterrupted fulfillment of all monetary obligations of the banking system of the country, its reliability and adequacy of resources in accordance with the needs of the economic development.

In general, stability of the monetary system and the liquidity of the banking system to the great extent depends on the liquidity of the banks participating in the system. In case of the

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liquidity deterioration or bankruptcy of one of the participating banks, this situation may cause liquidation and insolvency of other participating banks. This implies the importance of the role of central banks in regulation of the banks' performance in the field of liquidity.

The concept "liquidity of the banking system" means timely fulfillment of obligations to depositors, creditors and shareholders of the banks-participants of the banking system, ability of legal entities and individuals to attract free funds, invest in lending and development of the national economy. In particular, this aim can be achieved through redistribution of funds between banks via the money market.

To fulfill their obligations banks should possess a trustworthy image among their customers. This confidence is based on the banks' liquidity. Under conditions of the economic modernization, commercial banks need to pay a particular attention to liquidity, solvency and profitability in order to ensure the sustainability of their performance. This justifies the topicality of the problem of liquidity in commercial banks and requires a comprehensive scientific analysis of ways to enhance the liquidity of banks.

As it has been stated in the Decree of the President of the Republic of Uzbekistan № 3270 "On measures for further development and raising sustainability of the banking system of the republic" as of September 12, 2017, "The results of stress tests of commercial banks conducted by the Central Bank of the Republic of Uzbekistan on the subject of their stability and adaptability within the framework of liberalization of the domestic foreign exchange market revealed a number of deficiencies that negatively affect the financial condition and currency position of banks, the consequences of which adversely affect bank liquidity". To overcome these negative factors, the Central Bank of the Republic of Uzbekistan was assigned the task of ensuring compliance with capital adequacy, liquidity and stability of commercial banks in the framework of the requirements of international principles of the banking supervision.

In this regard, according to the requirements of Basel III of the Basel Committee on the bank supervision, a particular attention shall be paid to the liquidity of the banking system, in particular, liquidity of commercial banks. In accordance with the recommendations of the International Basel Committee, new regulatory indicators for the assessment of commercial banks' liquidity have been introduced. In particular, in addition to the current liquidity and leverage indicators, commercial banks have introduced instant liquidity rates, regulatory liquidity ratios and net stabilization ratios. The Central Bank will be able to control the liquidity of the banking system at the established level by ensuring that commercial banks comply with these standards. The Central Bank may also influence the liquidity of the banking system through monetary policy instruments - refinancing policies, open market operations and obligatory reserve requirements. In addition, it will have a positive impact on the liquidity of the banking system by raising the public share in the authorized capital of state-owned banks.

Stability of the banking system's liquidity will enhance the trust of the population and small businesses to the banking system and thereby raise the flow of financial resources in the banking system. In the event of unstable liquidity of the banking system, the population and small businesses' confidence in the banks will decrease and they will withdraw their funds from banks. This, in turn, will lead to an increase in non-banking turnover in the economy. It is obvious that the liquidity of the banking system currently is one of the most pressing issues.

For this purpose it is necessary to study the factors influencing the liquidity of the banking system. It is necessary to carry out a detailed analysis of the extent to which each factor has an impact on the liquidity of the banking system and what advantages can be best achieved in this regard.

2. Literature review

So far the economic literature provides less information on the liquidity of the banking system as a whole than the liquidity of commercial banks. Liquidity of the banking system implies ensuring timely, full and smooth fulfillment of all monetary obligations of the banking system of the country, determines its reliability and sufficient resources to meet the needs of economic development. In general, stability of the monetary system and the liquidity of the banking system depend on the liquidity of the banks participating in the system. In case of the liquidity deterioration or bankruptcy of any of the participating banks, this situation may result in the liquidation and insolvency of other participating banks. This means that the liquidity of the banking system can be ensured by providing the liquidity of commercial banks.

The economists express almost similar views on the liquidity in various literary sources. In particular, (Kravtsova, 2010) considers the banking system liquidity as the ability to timely fulfill its obligations to depositors, lenders and shareholders of member banks, the ability of legal entities and individuals to attract free funds, lend and invest in the development of the national economy. This will be achieved, in particular, through the redistribution of funds between banks through the money market.

As mentioned above, the liquidity of the banking system is largely dependent on the liquidity of the participating banks.

Internal and external factors can influence efficient management of commercial banks' liquidity.

Internal factors are the following:

- reliable capital base of the bank, including charter capital;
- quality of the bank assets;
- quality of deposits;
- degree of dependence on external sources;
- compliance with the maturity of assets and liabilities;
- bank image;
- quality of the bank management.

As it has been stated above, the financial condition of the commercial banks is related not to only internal, but external factors as well. The most important external factors are the following:

- general economic and political situation in the country;
- development of the securities market and the interbank market;
- level of organization of the central bank refinancing system;

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- efficiency of the supervisory function of the central bank.

In addition, there were some researches in the field of the bank management. In particular, in the opinion of Kokh (Kokh 2003), the bank liquidity is defined as the ability of the bank to raise cash from representative banks and the Federal Reserve System, including the ability to purchase potential liquid assets, federal funds, new deposit certificates, shares, Euros, and debt instruments.

In the researches devoted to the bank management and financial services rendered by commercial banks (Rose, 2003), the bank liquidity is the ability to find liquid assets at reasonable cost, required amount and at the due time.

Russian scientists have also researched the liquidity problems of the Russian banking system. In this regard we should mention the research of Ivanov (Ivanov, 2003), who studied liquidity problems, factors influencing them and ways of solving liquidity problems. In addition, he defined the bank liquidity as the ability of the bank to meet its liabilities and creditworthiness of customers on time and at minimal cost.

Zakharova (Zakharova, 2006) studied the ways how to restore liquidity at banks. In her research, she examined the factors affecting bank liquidity both internally and externally, and described the bank liquidity as the bank's ability to meet its debt, financial and off-balance sheet commitments with a broader approach to bank liquidity.

J. Sinki (Sinki, 1994) in his research, devoted to the financial management at the commercial banks, determined the significance of the bank liquidity as far as liquidity is necessary for banks mainly in order to be ready to withdraw deposits and satisfy the demand for loans. Unexpected changes in flows create liquidity problems for banks.

The Russian scientist-economist Lavrushin (Lavrushin, 2008) in his research paid a particular attention to the liquidity of the bank assets. He determines the bank liquidity as the bank's ability to ensure timely fulfillment of its obligations, which is determined by the balance of assets and liabilities of the bank's balance sheet. In other words, liquidity is a generalized qualitative characteristic of the bank's activity, reflecting its reliability. Summarizing the above, it should be concluded that it is possible to consider liquidity as the ability of the bank in a timely manner and in full, as well as without loss to fulfill its obligations to its customers.

In the educational aid developed by (Beloglazova and Krolivetskaya, 2009), which is devoted to the banking and organizational issues of commercial banks, it is stated that "liquidity is the indicator of the bank's soundness, as well as the occurrence of liquidity problems, is the first symptom of the bank's soundness violation".

The variety of these definitions of the bank liquidity is explained by the wide range of banking services provided by banks.

Bank liquidity is an important factor for timely fulfillment by the bank of its current and future obligations and payments, as well as of customers' requirements for getting a loan.

As for the research and theories on bank liquidity management, there are also theories and concepts developed by foreign and domestic scientists on this matter.

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As a result of recurrent financial crises in the economy, banks are challenging increased liquidity risk, which in turn will not adversely affect the banks' performance. At the same time, liquidity risk in banks, liquidity balance or negative liquidity management process can be prevented by the accurate and reasonable decision-making on the liquidity situation (Acharya, et al, 2009).

The Russian expert Shatalov in his article (Shatalov, 2004), devoted to the problems of the financial management of the bank, highlighted the current applicable strategy of the bank liquidity management. In his opinion, it is necessary to maintain an optimal balance between liquidity and profitability, as well as to ensure a balance between the timing of investments in assets and liabilities. With regard to current liquidity, the bank should have an adequate supply of liquid assets and limit investment in low liquid assets.

Furthermore, Savostyanov in his scientific paper on the liquidity management at commercial banks (Savostyanov, 2001) has developed some instruments how to overcome the liquidity problem when it occurs. He proposes liquidity management through assets management. In its pure form, this strategy requires accumulation of liquid assets in the form of liquid assets - mainly cash and quick-sale securities. When there is a need for liquid funds, selected assets are sold until the demand for cash is satisfied. This liquidity management strategy is often referred to as asset transformation, since liquidity comes from turning non-cash assets into cash.

Generally, this liquidity management strategy is called asset transformation because liquid assets are generated through the conversion of non-monetary assets into cash.

In the opinion of Gerasimenko (Gerasimenko, 2015) high liquidity (money supply available in the country) ensures smooth functioning of the payment system, general oversight by the central bank, as well as stability of macroeconomic indicators (inflation rate, GDP growth and national currency rate).

In his research, the researcher examined the impact of key indicators of commercial banks on the liquidity of the banking system. In particular, the issues how deposits and loans of commercial banks, interbank deposits and their interest rates, as well as targeted allocations of the central banks can impact the liquidity of the banking system have been studied on the basis of correlation-regression analysis. Based on the results, the author has developed his conclusions and recommendations on improving the liquidity of the banking system.

In particular, within the framework of the analyzed problem the author made a conclusion that "liquidity of the banking system depends on the commercial banks' business policies and the central banks' supervision over commercial banks. However, refinancing rate is considered to be a key factor. At the same time, the liquidity ratios set by the central bank to commercial banks cannot provide a comprehensive evaluation of the situation".

The efficiency of banks' performance is determined by the timely execution of its obligations to customers. As far as we know from the history (Abdullaeva, 2003), when money-changers were unable to pay their debts or obligations or fail to fulfill their obligations, justify

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their trust or irresponsibility, and their tables were broken and they were declared “banco rotto”, i.e.

Liquidity is considered to be one of the key concepts in the activities of commercial banks. Liquidity is the basis of the reliability and stability of commercial banks and promotes their solvency. The bank liquidity is considered to be a necessary category for ensuring solvency and reliability of banks.

There are several factors that can raise the risk of the bank liquidity, which require a particular attention to the bank liquidity and constant monitoring of bank liquidity risk. That is why banks are forced to maintain liquidity, even if they lose their profits.

In turn, if resources are used to maximize banks’ profitability, this will have an impact on the liquidity of banks as well. Consequently, banks’ liquidity and profitability are inversely proportional.

When we speak about the reliability of banks, we consider how they can fulfill their obligations to their customers as soon as possible when required. To gain reliability, banks must possess the ability of solvency and liquidity.

Liquidity refers to the ability of material assets to become cash in a short period of time without any loss. To consider any material asset to be liquid it must comply with the following requirements:

- its own constantly operating secondary market;
- reasonable price;
- high speed of circulation.

Intangible assets with these properties should be sold and converted into cash at any time, at a fair price, and at no cost. The balanced valuation of these material assets maintains a constant demand for them.

When managing the bank liquidity (Abdullaeva, 2003), four basic theories are distinguished: first, loans of commercial banks, second, theory of displacement, third, theory of expected revenue, fourth, liabilities management theory. Moreover, there are 2 approaches to manage liquidity position. The first is that the bank has a policy of constant reserves control to prevent the increase in non-profitable assets. The second is the policy of maintaining reserves at the same level.

In the opinion of Abdullaev (Abdullaev, et al, 2010), the bank liquidity is the ability to meet current financial obligations by using their assets as cash or a quick conversion to cash at their nominal value.

Moreover, Abdullaev (Abdullaev, et al, 2010) supposes that the policy of reserve requirements is considered to be a traditional instrument of the monetary policy of the central bank. At present, obligatory policy of reserve requirements has become an important, efficient tool for regulating money supply in circulation, influence of the central bank on liquidity of the national banking system.

It should be noted that the liquidity of the banking system as a whole and the factors influencing it haven’t been thoroughly researched by scientist and economists. Providing liquidity of the banking system will raise the public confidence in the banking system of the country and thereby meet the needs of the real sector of the economy. The liquidity of each participating commercial bank is affected by the liquidity of the entire banking system.

There are both internal and external factors which ensure liquidity of commercial banks. Internal factors, as mentioned above, are represented by the level of capitalization of the commercial bank, the quality of assets and the quality of deposits. External factors are the development of the securities market (open market operations) and the interbank market, the level of the refinancing system established by the central banks and efficiency of the central bank's supervisory functions.

Thus it is possible to make a conclusion that liquidity of the banking system is influenced by the liquidity of commercial banks, the level of use of monetary policy instruments by the central bank and efficiency of the central bank's supervisory functions.

The central banks play an important role in ensuring the liquidity of commercial banks and, thus, the liquidity of the banking system as a whole. They can impact the banks' liquidity through their monetary instruments, establish liquidity norms for commercial banks, and monitor their implementation.

3. Research methodology

The information required in this article is basically obtained from the open data of the Central Bank of the Republic of Uzbekistan, the rating agency "Ahbor-Reyting" and commercial banks.

The article represents analysis of the performance indicators of 10 major commercial banks of the republic (National Bank for Foreign Economic Activity of the Republic of Uzbekistan, "Asaka Bank" JSCB, "Uzbekistan Industrial and Construction Bank" JSCB, "Ipoteka Bank" JSCB, "Qishloq Qurilish Bank" JSCB, "Hamkorbank" JSCB, "Halkbank" JSCB, "Agrobank" JSCB, "Uz KDB" JSCB and "Kapitalbank" JSCB). The total assets of the above-mentioned commercial banks account for over 80% of the overall assets of the banking system. We believe that these results can be used to ensure the liquidity of the banking system. However, it should be noted, that the majority of the above-mentioned commercial banks are state-owned banks.

In the economic literature, the impact of commercial banks on the quality of assets, deposits and equity of the banking system is hasn't been comprehensively with the application of econometric methods. In the process of our research we have formulated a number of research questions:

– What is the impact of the commercial banks' equity on the liquidity of banks?

– How can economic standard indicators determined by the Central Bank impact the liquidity of the banking system?

– How can monetary policy instruments of the Central Bank influence the liquidity of the banking system?

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In order to answer the above questions, we used mainly quantitative methods because mainly this article is mainly devoted to the analysis of the basic performance indicators, assets, capital, liquid assets of 10 major commercial banks with over 80% of assets of the entire banking system.

The research included a 5-year analysis of key indicators of the banking system. All data have been collected and analyzed on a quarterly basis. We use secondary data in our research and the information required has been collected from “Ahbor Reyting” agency and commercial banks.

Moreover, the article analyzes the dynamics of research problem change through several years of data sampling as a unit of analysis using the Longitudinal Research Methodology as an analytical study. To provide more comprehensive view of the data in the descriptive statistics by Lovie (1986, 165 p.), we have presented all relevant information in the generalized form of tables, charts, line-graphs.

In our article we have widely used such research methods as bivariate analysis – analysis with two variables, Bar charts, Pie charts, multiple bar charts. In addition, we used regression-correlation analysis to determine interdependence of the share of liquid assets in the overall assets of the banking system, the share of non-performing assets in the overall assets, the share of depists in the overall liabilities, the share of equity in the overall liabilities. Furthermore, we applied the least square method to analyze the fact how the increase of the share of income-generating assets, deposit and equity makes an impact on the share of liquid assets of the banking system.

4. Analysis and discussion

As it has been mentioned earlier, the liquidity of the banking system is mainly dependent on the liquidity of the participating banks. Bank liquidity is the overall ability of the bank to attract liquid assets at the right time and in the right amount, without any loss, for the purpose of timely fulfillment of its current and future obligations and payments as well as meeting the requirements of its customers.

The central banks play an important role in ensuring the liquidity of commercial banks and, thus, the liquidity of the banking system. They influence the banks’ liquidity through their monetary policy instruments, establish liquidity standard indicators for commercial banks, and monitor their implementation.

In this section of the article will analyze the main indicators of the banking system of the Republic and examine the impact of these indicators on the liquidity of the banking system. Moreover, we examine the impact of commercial banks on asset quality, equity and deposits on the liquidity of commercial banks.

It should be noted that the Central Bank plays a significant role in ensuring liquidity of commercial banks in our republic in reliance upon its appropriate legal bases. In this regard Section 5 of the Law of the Republic of Uzbekistan as of November 11, 2019 represents the legal base for all monetary operations of the Central Bank, in particular, bases for monetary

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instruments. Article 31 clarifies the issues related to provision and withdrawal of liquidity in the money market, article 34 provides the information on the open market operations, in particular, purchase of government securities and debt obligations and their further sale in the open markets. It should be noted that the majority of securities markets in the developed countries widely apply monetary policy instruments for providing liquidity of commercial banks. However, due to insufficient development of securities in our country and low volume of liquid securities in circulation this market is not so widely used in our country.

Article 30 of this Law determines general requirements for obligatory reserve requirements. Without limitation, the Central Bank approves the amount of reserve requirements, composition of the banks' obligations put to deposit, procedure of settlements and creating reserves, and also confirms the average reserve ratio. The amount of reserve requirements is the same for all banks in each category of attracted funds and deposits.

In addition, the refinancing policy of the Central Bank makes an impact on the liquidity of the banking system as a whole. In particular, in case of liquidity problems in the banking system, the Central Bank will raise the refinancing rate. At the same time, the attracted funds of commercial banks increase the interest rate, forcing commercial banks to raise their interest rates. This will reduce the demand of customers for bank loans and decrease the commercial banks' liquidity, thus ensuring the liquidity of the banking system.

In particular, raising the refinancing rate to 16 percent by the Central Bank enabled to achieve effective banking supervision and stabilize interest rates and money supply in the economy in the shortest possible term.

Introduction of liquidity transactions for commercial banks since the second half of 2017 was one of the first practical steps in the active phase of the monetary policy. This, in turn, enabled to create an efficiently-operating channel of refinancing rate increase in interest rates on interbank money market and deposit and credit operations of commercial banks.

The rapid growth in lending volumes and cash in circulation resulted in the decrease in the liquidity of the banking system as compared to the beginning of the year.

In this regard, the refinancing rate of the Central Bank was increased from 14% to 16% per annum since September 25, 2018 to curb inflation and limit the growth of money supply and optimize the volume of loans to the economy. At the same time, the Central Bank has set strict requirements for commercial banks to fully comply with the economic criteria for the formation of a loan portfolio, preventing unjustified growth of the loan portfolio of the banking system.

One of the most important priorities of reforms in the banking system of the country is to raise the level of capitalization and capital adequacy of commercial banks. The Basel Committee on Banking Supervision has developed new standards and recommendations (Basel III standards) that provide for further improvement of regulatory requirements for commercial banks, including new capital adequacy and liquidity ratios.

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In this regard it is expected to provide gradual implementation of the standards and recommendations of Basel III on the Bank Supervision by the Central Bank of the Republic of Uzbekistan. Currently, the banking system of the country sets the norms that are required by commercial banks. The following table shows the performance of liquidity indicators in the national banking system:

Name of Indicators	January 1, 2017	January 1, 2018	January 1, 2019
Ratio of high liquidity assets to the total assets, in percent	22,1	22,7	9,4
Current liquidity standard *(minimum requirement - 30%)*	64,4	56,1	81,5
Liquidity coverage ratio *(minimum requirement - 90%)*	177,2	225,2	170,7
Net stable financing standard *(minimum requirement -100%)*	102,6	110,6	107,9
Instant liquidity standard *(minimum requirement - 15%)*	-	40,1	30,9

source: www.cbu.uz

From the statements provided above, it is obvious that the Central Bank is trying to supervise and influence the liquidity of the banking system through monetary policy instruments - refinancing rate and policy of reserve requirements. In this way the Central Bank monitors the liquidity of commercial banks and, thus, the liquidity of the banking system through economic standards set for commercial banks.

We analyze the key performance indicators of the 10 commercial banks and examine the impact of these indicators on the liquidity of commercial banks. With the aim of studying the liquidity of the banking system, we have obtained relevant data from 10 major banks. The total assets of the above-mentioned commercial banks account for over 80% of the overall assets of the banking system. The outcome received by the key performance indicators of these banks can constitute the basis for drawing a conclusion on the condition of the banking system of the republic. Consequently, the impact of these banks' quality of assets, deposits and equity changes on the share of liquid assets of commercial banks constitutes the basis for the impact of these indicators on the banking system.

We carry out correlation-regression analysis of the following indicators to determine their interrelation of the share of income-generating assets in the total balance (X1), the share of non-performing assets in the total balance (X2), the share of deposits in the total balance (X3), the share of equity in the total balance (X4) with the share of liquid assets in the total balance (Y).

Regression analysis	
Manifold R	0,983773
R-square	0,967809
Standardized R-square	0,967178
Standard error	0,040235
Observations	209

From this table it is obvious that the number of observations accounted for 209, and in this case R2 = 0.9678. This means that it is high-precision aproximation and that this model fully describes the process

Dispersion analysis					
	df	*SS*	*MS*	*F*	*Significance*
Regression	*4*	9,928456	2,482114	1533,28316	6,1373E-151
Residual	*204*	0,33024	0,001619		
Total	*208*	10,2587			

The aspect which deserves attention in the dispersion process is F (Fisher coefficient) test. A coefficient is the indicator which implies analysis and demonstrates interdependence of variables. If this coefficient is less than 0,05, this indicator implies analysis. In our research this coefficient is much smaller than 0,05. This demonstrates significance of our analysis

	Coefficients	*Standard error*	*t-statistics*	*"P" Significance*	*Low 95%*	*High 95%*	*Low 95,0%*	*High 95,0%*
Variable Y	1,022343	0,021319	47,9556	4,91E-113	0,98031	1,064376	0,98030995	1,064375769
0,6264	-0,97697	0,019105	-51,136	2,73E-118	-1,014639	-0,939301	-1,01463868	-0,9393005
0,073999	-0,97175	0,044484	-21,845	2,581E-55	-1,059456	-0,88404	-1,05945634	-0,88404007
0,314294	-0,0051	0,021441	-0,2377	0,8123137	-0,047371	0,037176	-0,04737113	0,037176119
0,101861	-0,45917	0,104332	-4,401	1,736E-05	-0,664875	-0,253461	-0,66487502	-0,25346149

In this table, "P-significance" is the indicator which deserves paying a particular attention. If this indicator if less than 0,05, then it is efficient to consider the impact of independent variables analyzed and dependent variables. In our research there is very small impact of the independent variable «X3» on the variable «Y», or even there is no impact at all.

Based on the results of the regression, we construct our own model, where:

$$Y=1,022-0,98X1-0,97X2-0,46X4.$$

From this model it is obvious that there is inverse dependence between dependent variable and independent variable. Thus:

– the change of the share of the income-generating assets in the total assets by 1 unit results in the change of liquid assets in the total assets by 0,98 unit;
– the change of the share of the non-performing assets in the total assets by 1 unit results in the change of liquid assets in the total assets by 0,97;
– the change of the capital in the overall liabilities by 1 unit results in the change of liquid assets in the overall assets by 0,64 unit.

Now, we will analyze the key performance indicators of the 10 commercial banks and consider the impact of these indicators on the liquidity of commercial banks.

Table 2

Data on the comparative indicators of commercial banks

Indicators	Jan 1, 13	Jan 1, 14	Jan 1, 15	Jan 1, 16	Jan 1, 17	Jan 1, 18	Jan 1, 19
Ratio of assets to liabilities, %	**112,0%**	**11,5%**	**112,1%**	**111,6%**	**110,9%**	**113,0%**	**114,0%**
Assets, billion UZS	29 081,2	37 306,0	43 812,1	55 157,7	70 661,5	166 631,8	214 419,6
Liabilities, billion UZS	25 974,5	33 459,0	39 084,6	49 411,0	63 703,5	145 955,7	187 740,7
Ratio of credit placements to the deposits, %	**120,3%**	**129,1%**	**142,1%**	**140,1%**	**152,9%**	**185,6%**	**239,1%**
Loans, billion UZS	16 011,7	22 047,3	27 384,2	33 732,5	44 666,9	110 572,1	167 390,6
Deposits, billion UZS	13 313,6	17 071,4	19 275,1	24 078,1	29 222,6	59 578,7	70 001,4

As can be seen from the table, deposits of commercial banks did not grow in the same proportion as credit placements. In particular, in the previous year credit placements of commercial banks increased by 1,51 times, deposits of commercial banks as its source rose by 1,17 times. The sources for the rapid growth of the bank’s credit placements are represented by the funds from the Public Targeted Funds, charter funds of the state-financed banks, as well as the funds from international financial institutions.

The composition of the liabilities of the analyzed banks has been examined in terms of attracted loans and leasing, overall deposits and the composition of deposits. If the assets of commercial banks increased by 7,4 times, the gowth of deposits constituted just 5,2 times. It is not bank deposits which constitute the source for the growth of commercial bank assets, but the funds attracted from the international financial institutions and local targeted funds.

It should be noted, that demand deposits can make a great impact on the liquidity of commercial banks. In this regard we have studied the share of the demand deposits in overall liabilities, obligations and deposits. The reduction of the share of overall depoits in the overall liabilities during the analyzed period (from 45,8% to 32,6%) has resulted in the decrease of the share of the demand deposits in the overall liabilities (from 30,6% to 16,9%) and decrease of the share of the demand deposits in the overall obligations (from 34,3% to 19,3%).

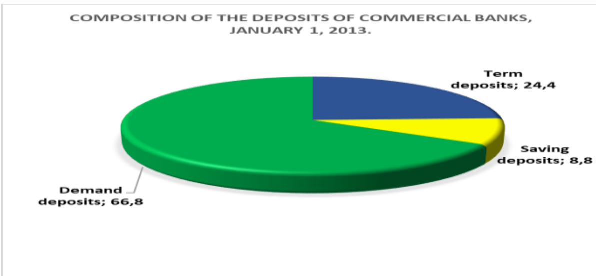
Table 3

Analysis of the separate indicators of commercial banks

billion UZS

Indicators	Jan 1, 13	Jan 1, 14	Jan 1, 15	Jan 1, 16	Jan 1, 17	Jan 1, 18	Jan 1, 19
Total assets	29 081,2	37 306,0	43 812,1	55 157,7	70 661,5	166 631,8	214 419,6
Total liabilities	25 974,5	33 459,0	39 084,6	49 411,0	63 703,5	145 955,7	187 740,7
Demand deposits and leasing	8 217,1	11 823,5	14 524,5	18 780,0	25 972,5	72 819,3	104 378,8
The share of attracted loans and leasing in the liabilities	28,3%	31,7%	33,2%	34,0%	36,8%	43,7%	48,7
The share of attracted loans and leasing in the obligations	31,6%	35,3%	37,2%	38,0%	40,8%	49,98%	55,6%
Total deposits	13 313,6	17 071,4	19 275,1	24 078,1	29 222,6	59 578,7	70 001,4
Demand deposits	8 897,0	10 900,4	11 866,9	14 644,4	17 583,6	38 535,1	36 236,0
Share of demand deposits in the total liabilities	30,6%	29,2%	27,1%	26,5%	24,9%	23,1%	16,9%
Share of demand deposits in the total obligations	34,3%	32,6%	30,4%	29,6%	27,6%	26,4%	19,3%
Share of demand deposits in the total deposits	66,8%	63,9%	61,6%	60,8%	60,2%	64,4%	51,8%
Share of overall deposits in total liabilities	45,8%	45,8%	44,0%	43,7%	41,4%	35,7%	32,6%

However, the share of demand deposits in total deposits constitutes not less than 50% during the analyzed period. This justifies the fact that commercial banks do not undertake reasonable efforts to attract free funds of the population and economic entities for long-term deposits. This is the problem challenged by the banking system over the last years.



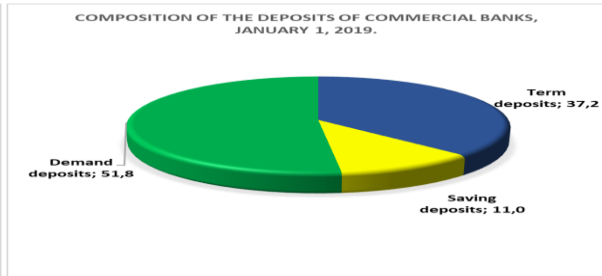


Figure 1. Dynamics of composition of the deposits of commercial banks

The data, illustrated above, shows that the composition of bank deposits remains almost unchanged during the analysis period. If the share of demand deposits in the total deposit accounted for 66,8%, at the end of the analyzed period this indicator reduced to 51,8%.

Below we examine the share of the indicators which can make an impact on the liquidity of commercial banks – income-generating assets, non-performing assets and overall capital in the total assets of commercial banks.

Table 4

Financial stability indicators of the banking system of the Republic of Uzbekistan

billion UZS

Indicators	Jan 1, 13	Jan 1, 14	Jan 1, 15	Jan 1, 16	Jan 1, 17	Jan 1, 18	Jan 1, 19
Liquid assets/total assets	**31,2%**	**29,3%**	**26,3%**	**27,3 %**	**27,4%**	**23,6%**	**13,6%**
Liquid assets	9 064,8	10 939,6	11 526,3	15 044,7	19 336,4	39 374,9	29 252,6
Total assets	29 081,2	37 306,0	43 812,1	55 157,7	70 661,5	166 631,8	214 319,6
Total capital/total assets	**10,7%**	**10,3%**	**10,8%**	**10,4%**	**9,8%**	**12,4%**	**12,4%**
Total capital	3 106,7	3 847,1	4 727,5	5 746,7	6 958,1	20 676,1	26 578,9
Total assets	29 081,2	37 306,0	43 812,1	55 157,7	70 661,5	166 631,8	214 319,6
Income-generating assets /Total assets	**59,7%**	**63,8%**	**66,3%**	**63,9%**	**64,9%**	**67,7%**	**69,3%**
Income-generating assets	17 347,0	23 789,9	29 029,1	35 220,1	45 884,4	112 809,7	148 522,4
Total assets	29 081,2	37 306,0	43 812,1	55 157,7	70 661,5	166 631,8	214 319,6
Non-performing assets/Total assets	**7,8%**	**6,0%**	**5,8%**	**6,0%**	**6,1%**	**5,4%**	**5,7%**
Non-performing assets	2 276,9	2 223,8	2 527,6	3 334,2	4 311,6	8 998,1	12 216,2
Total assets	29 081,2	37 306,0	43 812,1	55 157,7	70 661,5	166 631,8	214 319,6

As can be seen from the table, even there is an increase of the bank equity and liquid assets in relation to residual, the growth rate of commercial banks' equity in total assets is relatively high. During the analyzed period, the share of banks' liquid assets in total assets decreased by 17,6% (from 31,2% to 13,6%), while the share of total capital in total assets increased by 1,7% (from 10,7% to 12,4%).

We can observe that the share of commercial banks' income-generating assets in the total assets, the share of non-performing assets in the total assets have inverse correlation with the share of liquid assets of the bank in the total assets. This, in turn, results in the increase in the share of income-generating and non-performing assets, reducing the share of commercial banks' liquid assets in total assets. Such situation may negatively affect the liquidity of the banking system.

Non-performing assets of commercial banks consist of fixed assets, accrued but not withdrawn revenues, other private property and other assets. Taking this situation into account, commercial banks seek to reduce non-performing assets, including troubled assets in the structure of their total assets. Moreover, the Central Bank has some requirements to prevent the growth of non-performing assets in the structure of commercial banks. In particular, the investment of commercial banks in real estate and fixed assets should not exceed the amount of the 1-tier bank capital.

In this regard, when classifying commercial banks' assets by risk level for the purposes of assessing capital adequacy ratios, non-performing assets are classified at the rate of 150%. As a result of these requirements of the Central Bank, commercial banks are encouraged to reduce non-performing assets in total their assets and thus seek to raise their liquidity.

Income-generating assets of commercial banks include investment in securities, as well as lending and leasing operations. Given that the primary objective of commercial banks is to make profits, banks will direct available resources to income-generating assets to raise their profitability. This negatively affects the commercial banks' liquidity and, eventually, the liquidity of the banking system.

The Central Bank monitors the share of income-generating assets in total assets by setting the requirements for commercial banks for securities transactions, as well as lending and leasing operations. In this regard, the liquidity requirements of commercial banks also limit the commercial banks' ability to channel available assets into income-generating assets.

In addition, the Central Bank will be able to influence the liquidity of the banking system through the refinancing rate. In particular, an increase in refinancing rates will lead to the price growth of the loans extended by commercial banks and a reduction in lending and leasing operations performed by commercial banks.

According to the decision of the Executive Board of the Central Bank of the Republic of Uzbekistan dated September 25, 2018, the refinancing rate increased from 14% to 16%. This measure enabled to optimize the growth rates of the lending volume to the economy by

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commercial banks and the growth rates of the money supply. When we analyze the share of income-generating assets of commercial banks in total assets by each quarter of 2018, in fact, in the first half of 2018 there was an increase in the share of income-generating assets, but in the second half this indicator reduced.

During recent years, based on the recommendations of the International Basel Committee, there has been an increase in the liquidity requirements set by the Central Bank for commercial banks. Commercial banks meet the requirements of the Central Bank, reducing their profitability. Below we examine the profitability indicators of the commercial banks which performance we are researching.

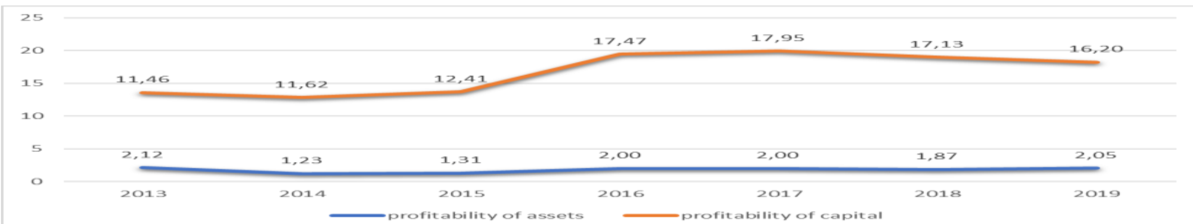

Figure 2. Profitability indicators of the banking system

As it is obvious from the line-graph, there has been a decline in assets and capital yields over the past period due to increased liquidity requirements by the Central Bank. Moreover, the Central Bank's open market operations with government securities provide return on liquid assets of commercial banks as well. This fact encourages commercial banks to buy government securities in order to maintain their liquidity and profitability.

5. Conclusion

In reliance upon the research results it is possible to draw a conclusion that liquidity of the banking system implies timely, complete and uninterrupted fulfillment of all monetary obligations of the banking system of the country, its reliability and sufficient resources to meet the needs of the economic development.

In general, the stability of the monetary system and the liquidity of the banking system largely depend on the liquidity of the banks participating in the system. In case of deterioration or the liquidity of banks and bankruptcy of any of the participating banks, this fact may result in the liquidation and insolvency of other participating banks. This envisages the importance of regulation over the banks' activities in the area of liquidity by the central banks.

The Central Bank plays an important role in improving and ensuring the liquidity in the banking system. When the Central Bank directly affects the liquidity of the banking system through monetary policy instruments, it controls the liquidity of the banking system by ensuring that commercial banks comply with the established economic standards. Each commercial bank participating in the banking system contributes to the liquidity of the banking system by complying with the economic performance indicators established by the Central Bank.

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As a result of the research, we have examined the factors that can make an impact on the liquidity and enhancement of the liquidity of the banking system. Changes in the share of commercial banks' income-generating assets and non-performing assets in total assets will result in changes in the share of commercial banks' liquid assets in total assets. It should be noted that the income-generating assets and non-performing assets can make a great impact on the liquidity of commercial banks. The Central Bank can influence the share of commercial banks' income-generating and non-performing assets through monetary policy instruments and economic performance indicators, thus raising the liquidity of the banking system as a whole.

Based on the above analysis and data, we can make the following conclusions and recommendations aimed at improving the liquidity of the banking system:

1. Management of the liquidity of the banking system through the refinancing rate of the Central Bank. Meanwhile, in case of liquidity problems of the banking system, the Central Bank must undertake all possible efforts to increase the refinancing rate and try to stabilize the growth rate of loans and money supply of commercial banks. If there is a surplus of liquid assets of the banking system, it will impact money supply and liquidity of the banking system by lowering the refinancing rate and encouraging the population and businesses to obtain loans.

2. High refinancing rates will result in the use of the national currency as a savings tool. This can attract commercial banks' free resources from the population into bank deposits and, thus, ensuring smooth money circulation. Herewith it is advisable to attract these free funds into long-term deposits of commercial banks and this factor will raise the liquidity of the banking system.

3. The Central Bank influences the liquidity of commercial banks through the obligatory policy of reserve requirements and, thus, ensures the liquidity of the banking system. In the event of a lack of liquidity in the banking system, the Central Bank may reduce obligatory reserve requirements and may direct these funds to the liquidity of commercial banks. On the contrary, the banking system accumulates excess liquidity in the banking system by raising obligatory reserve requirements in the event of liquidity surplus.

4. The Central Bank impacts the liquidity of the banking system through open market operation. At the same time, the Central Bank ensures that commercial bank assets are both profitable and liquid due to the sale of government securities to commercial banks. In this way, commercial banks are encouraged to maintain an adequate amount of liquid assets in their total assets. In particular, it can direct funds from "NOSTRO" accounts of commercial banks to the purchase of government securities. This measure will raise profitability of commercial banks as well.

5. The Central Bank monitors the commercial banks' liquidity and, thus, the liquidity of the banking system by ensuring that the commercial banks comply with the economic performance indicators. The Central Bank encourages commercial banks to raise their liquid assets by limiting the share of income-generating and non-performing assets in total the assets of commercial banks through the requirements for commercial banks' 'liquidity, relations with debtors and real estate transactions.

6. In order to ensure the liquidity of the banking system and further increase the monetization ratio, the Central Bank should actively introduce refinancing loans to commercial banks, such as overdraft, overnight, lombard loans.

The application of the above scientific proposals and practical recommendations in practice of commercial banks management will enable ensure their liquidity.

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