BANK LIQUIDITY REGULATION AND LIQUIDITY RISK MANAGEMENT IN UZBEKISTAN

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Abstract

Liquidity provision is the prerequisite for stable functioning of not only an individual bank, but also entire banking system. Liquidity fail is seen as the most powerful factor, which leads to the bankruptcy by losing clients' and investors' confidence, as well as reputation in financial services market. Therefore, liquidity management is placed on the top of any bank's priority agenda. This paper studies the liquidity profile, its management and provision in Uzbekistan in space of "Aloqabank" Joint Stock Commercial Bank by modelling the liquidity-bearing factors. The conducted analysis suggested that risk-weighted assets' volume and inflation negatively affects the liquidity ratio, while deposit, lending and GDP volumes push the liquidity parameters forward.

Keywords: Bank liquidity, liquidity buffer, liquidity management, Uzbekistan

INTRODUCTION

Liquidity, or the ability to fund increases in assets and meet obligations as they come due, is crucial to the ongoing viability of any banking organization (BCBSC, 2000). Bank's play in the market depends on to what extent it is capable of meeting obligations, which is measured with liquidity indicators. Liquidity management has become a hard-to-tackle challenge for banks who regularly face failures lack of cash in meeting financial obligations in harsh market condition and a sever competitive environment. Especially in the last decade bank failures has become a regular occasion due to the newly shaping bases of global financial system, in which banks play

the central role as a vehicle of capital flows. The global financial crisis and its long-term consequences on banking sector revealed the truth, which obscured the wrong path of bank stability management in the most advanced economies. The consequent loss of effective liquidity tools in the banking system led to the absolute fall of giant banks.

Liquidity failures is often explained with two key assumptions: weak fundamental hypothesis and liquidity shortage hypothesis. The weak fundamentals hypothesis demises the bank's weak stability provision system, market access and safety practices. It takes roots from the bank stability criterions of Basel Committee on Banking Supervision. Liquidity shortage theory is built around the bank-client relationships, which is explained with the abnormal behavior of depositors when a bank faced solvency risk. According to this theory, in case of liquidity fail, current depositors try to withdraw all of their funds at the bank, potential decided not to keep their savings at a bank. As result, a bank goes to bankruptcy or least loses its share in the market.

Nowadays banks follow stricter rules and procedures when it comes to struggle for staying sound in financial services market. International financial institutions proposed several recommendations for ensuring favorable liquidity parameters for banks. Although all of their recommendations are not evenly applied by all central banks, some of them are successfully disseminated. Liquidity buffers have already become a widely used tool for minimizing liquidity risk by keeping particular amount of financial reserves at particular more stabile foreign or local banks with a condition of receiving back in case of liquidity failure.

Ensuring liquidity is a common unavoidable issue in the banking sector of any economy. Admittedly, several differences exist in liquidity management practices depending on the economic development status. As a rapidly developing economy, Uzbekistan has a progressively transforming banking sector, in which liquidity management is being modernized through monetary policy reforms. In the last three years Uzbek banking sector underwent core changes in liquidity and capital enhancement. At the initial stage of large-scale reforms, cash movement was smoothed by eliminating government-imposed barriers on cash payments. The next wave of reforms enabled economy to get rid of the absolutely ineffective and uncontrollable foreign exchange market, and to introduce a single exchange rate with equal and open access for both firms and individuals. These both reform phases played the key role in rescuing banks from the a long-lasted liquidity gap in the banking sector. This paper examines the effect of reforms on the liquidity of banking sector in the exemplary of "Aloqabank" Joint Stock Commercial Bank (hereinafter – "Aloqabank") and investigates the negatively affecting factors to enhance the effectiveness of monetary policy tools to manage liquidity in the banking sector.

LITERATURE REVIEW

Liquidity has always been the mostly debated topic not only since the global financial crisis, but the establishment of modern banking system in several centuries ago. Nowadays liquidity is placed in the policymakers, international financial institutions and academic rounds. Therefore, bank liquidity issues are one of the mostly investigated research area of economic studies at both micro and macro levels.

In her research, Bouwman (2013) studied the theoretical and empirical literature on bank liquidity creation in the context of traditional and shadow banking. She found that early historical evidence over liquidity and capital dates back to the 1800.

However, along with old-dated history in most literature bank liquidity is seen the secondary measure of bank stability due to the higher priority of capital adequacy and asset quality parameters. Jorda, Richter, Schularick and Taylor (2017) examined the role of higher capital ratios in tight financial circumstance in a bank. In their cross-country analysis, they reached the conclusion that the solvency parameters and capital ratios do not have a value, liquidity parameters such as the loan-to-deposit ratio and the share of non-deposit funding can make a signal financial downturn.

Bianchi and Bigio investigated the driving forces behind the decline in lending and liquidity hoarding by banks during the global financial crisis. Their analysis showed that an increase in lending calls for higher liquidity risk during disorders in the economy.

Valla, Saes-Escorbiac and Tiesset tested the new asset-based measures of bank liquidity which capture and quantify the dynamics of liquidity flows. Their studies suggested that under normal circumstances the crosschecking of liquidity ratios and liquidity flows could prove useful in designing a robust prudential approach to liquidity.

METHODOLOGY

The interconnectedness between liquidity and liquidity-creating parameters are always complicated due to the existence of diverse stability standards and requirements. Therefore, bank liquidity indicators take roots from several bank-specific parameters, included in bank's balance sheet. But it does not mean that bank's liquidity status is affected from changes in balance-sheet indicators. As argued in literature review, bank liquidity depends on off-balance sheet factors like financial system and macroeconomic stability at all.

In structuring the econometric model for liquidity of "Aloqabank" all bank-specific and macroeconomic parameters are included. In modelling, quarterly balance sheet and macroeconomic data for the period from 2014 to 2018 are examined.

The mathematical specification is built as follows:

$$LIQ_t = \alpha_0 + \beta_1 DEP_t + \beta_2 LEN_t + \beta_3 RWA_t + \beta_4 GDP_t + \beta_5 INF_t + \varepsilon_t$$

Here, LIQ_t – liquidity ratio of "Aloqabank" in t period, DEP_t – deposit volume of "Aloqabank" in t period, LEN_t – lending volume of "Aloqabank" in t period, RWA_t – risk-weighted assets of "Aloqabank" in t period, GDP_t – GDP volume of Uzbekistan in t period, INF_t – inflation rate in Uzbekistan in t period, ε – error term.

ANALYSIS AND RESULTS

At the initial stage data range is checked and preliminary data analysis is conducted through descriptive statistics (Table 1).

Table 1. Descriptive statistics

	LIQ	DEP	LEN	RWA	BSI	GDP	INF
Mean	0.525119	1.26E+09	1.60E+09	1.60E+09	0.183952	129097.2	5.090476
Median	0.533000	7.11E+08	1.05E+09	1.04E+09	0.179000	107397.3	4.300000
Maximum	0.599000	4.04E+09	4.78E+09	4.80E+09	0.282000	407514.5	14.40000
Minimum	0.434000	40624201	4.92E+08	5.06E+08	0.120000	25763.90	2.000000
Std. Dev.	0.061589	1.15E+09	1.32E+09	1.33E+09	0.043650	91524.35	3.616615
Skewness	-0.236978	1.210036	1.551840	1.552870	0.746225	1.399048	1.557223
Kurtosis	1.368054	3.203173	4.042220	4.041487	3.045493	5.098076	4.717871
Jarque-Bera	2.526895	5.160774	9.379169	9.389031	1.950791	10.70236	11.06950
Probability	0.282678	0.075745	0.009191	0.009145	0.377043	0.004743	0.003947
Sum	11.02750	2.64E+10	3.37E+10	3.36E+10	3.863000	2711041.	106.9000
SumSq. Dev.	0.075863	2.63E+19	3.49E+19	3.55E+19	0.038107	1.68E+11	261.5981
Observations	21	21	21	21	21	21	21

The results of descriptive statistics showed that data on each selected variable are normally distributed and are applicable for econometric modelling. Kurtosis, skewness and Jarque-Bera coefficients gained eligible units to continue the analysis.

The next stage comprises the most important step in econometric analysis. In consistent with data specifics, OLS test conducted through EVIEWS 9.0 econometric analysis package (Table 2).

Table 2. OLS test results for "Aloqabank"

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.644351	0.026390	24.41644	0.0000
DEP	3.01E-11	2.09E-11	1.439431	0.0720
LEN	6.84E-11	9.69E-11	0.705411	0.0921
RWA	-6.80E-11	9.20E-11	-0.738909	0.0722
BSI	0.873587	0.224989	6.989296	0.0000
GDP	9.13E-10	1.45E-07	0.186287	0.0951
INF	-0.000574	-0.003927	-0.146274	0.0858

R-squared	0.912488	Meandependentvar	0.525119
Adjusted R-squared	0.874983	S.D. dependentvar	0.061589
S.E. ofregression	0.021776	Akaikeinfocriterion	-4.554788
Sumsquaredresid	0.006639	Schwarzcriterion	-4.206613
Loglikelihood	54.82527	Hannan-Quinncriter.	-4.479225
F-statistic	24.32975	Durbin-Watsonstat	1.791117
Prob(F-statistic)	0.000001		

As shown in Table 2, deposit volume, lending volume, bank stability indicators, GDP had positive effect of liquidity of the selected bank. Especially, bank stability indicators are the most supportive factor for ensuring liquidity of "Aloqabank" by giving positive stimulus of 0.87 units. The other positively influencing variables had insignificant coefficients.Risk-weighted assets and inflation dynamics led to decrease liquidity ratio of the bank. However, both negative factors influenced sufficiently insignificant on liquidity despite probability coefficient is between confidence interval 10 %.

In the diagnostic part of the OLS test, Durbin-Watson statistics is between 0–2.0 interval, which shows the positive autocorrelation among times series. According to the rule of thumb, DW coefficient between 1.5-2.5 is normal for accepting no autocorrelation.

CONCLUSION AND RECOMMENDATIONS

The research over the influencing factors of liquidity ratio of "Aloqabank" showed that both bank-specific and macroeconomic hazards exists, even the bank manages to run a favorable lending and deposit policy. Risk-weighted assets keep a considerable riskiness over liquidity, as inflation also unavoidably evades bank's liquid assets. Considering the nature of "Aloqabank"'s

nature, specific aspects of domestic banking system and overall progressive macroeconomic reform phase in Uzbekistan, following recommendations are proposed:

1. Considering the existing risks and hazards for liquidity ratio as well as the profitability profile of the bank, create a liquidity buffer by keeping special rescue funds in condition of failing in liquidity provision.

2. Create liquidity risk monitoring framework for timely detecting the risky operations and trends in asset side of the balance sheet by applying distance-to-default approach.

3. Disseminate the early warning signal (EWS) systems for overall bank stability and including liquidity ratio in accordance with IMF and BIS recommendations.

Abovementioned proposals enable Uzbek banks to stay sound in case of severe liquidity hazards and fails in bank stability management. Moreover, obtained research results may help research rounds directing insight into Uzbek banking system and opens a way for further in-depth research and investigations in developing countries' banking system stability.

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