

## ROMANIAN BANKS LIQUIDITY MANAGEMENT

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**Abstract.** During the early “liquidity phase” of the financial crisis that began in 2007, many banks – despite adequate capital levels – still experienced difficulties because they did not manage their liquidity in a prudent manner. The crisis drove home the importance of liquidity to the proper functioning of financial markets and the banking sector. Prior to the crisis, asset markets were buoyant and funding was readily available at low cost. The rapid reversal in market conditions illustrated how quickly liquidity can evaporate, and that illiquidity can last for an extended period of time. The banking system came under severe stress, which necessitated central bank action to support both the functioning of money markets and, in some cases, individual institutions. Most transactions or financial commitments have implications for a bank liquidity. Transactions are particularly vulnerable to liquidity problems at a specific institution. Therefore, one can deduce the importance of the correct calculation and liquidity indicator, not only for the bank concerned, but especially for NBR uses that bank risk management tool. That is why the authors took into consideration a sample of banks in Romania to show to what extent the banking crisis has influenced the development banks. The objective of this paper is to provide a global perspective of the liquidity risk from a banking societies’ viewpoint. Our paper belongs to the technical studies that analyze the concrete way in measuring the liquidity risk at the level of the banking societies from Romania. The study is structured on chapters that present the theoretical background in liquidity risk management, also, the paper contains a study cases part, which presents the actual stage and the challenges of the measuring the liquidity risk. The difficulties experienced by banks were due to lapses in basic principles of liquidity risk management. In response, as the foundation of its liquidity framework, the Basel Committee in 2008 published Principles for Sound Liquidity Risk Management and Supervision (“Sound Principles”).

**Keywords:** liquidity, risk assets, volatile equity

**JEL classification:** G21

## **1. Generally Introduction**

Banks need liquidity to offset expected and unexpected balance sheet fluctuations and to provide the necessary funds for development. Liquidity is the ability of banks to effectively deal with the withdrawal of deposits and other debts due and to cover additional borrowing, loan and investment portfolio. A bank has adequate liquidity potential when it is able to obtain the necessary funds (by increasing debt, securitization and sale of assets) immediately and at a reasonable cost. Price liquidity depends on market conditions and the market perception of the level of risk of the debtor institution.

Other distinguished professors believe that banks need liquidity of each bank depends on the situation expressed sheet.

To assess the state of liquidity, particular importance is how to classify bank assets and liabilities.

One of the most prestigious institution which supervisory banking risks - Bank for International Settlements (BIS) - issued by the Committee of the Basel Banking Supervision (the Committee) a set of principles that should underpin bank liquidity management organizations.

Liquidity risk is the probability that the bank will not be able to meet payments to customers due to diverting the proportion of long-term loans and short term loans and bank liabilities Gap structure.

Liquidity risk is considered a major risk, but it is subject to meanings such as extreme liquidity, "safety cushion" or the ability to raise capital at a normal cost.

Extreme liquidity situation involves the failure of banks and manifested by massive withdrawals of funds or credit lines customary closing other institutions, which generates a brutal liquidity crisis.

Liquidity risk refers to the situation where not seem sufficient liquid assets available to meet unexpected needs. In this case, liquidity is rather a "safety cushion" to deal with difficulties.

Also, liquidity risk expresses the event of difficulties, temporary or important to have access to sources of funding to meet the needs. In this case, liquidity shows bank's ability to raise capital at a "reasonable cost" at all times. This ability depends on two factors disjunction: market liquidity and liquidity institution. Market liquidity directly affects the ability to increase the capital of banks. Liquidity of banks is characterized by developments projected financing needs.

Liquidity risk management involves anticipating needs liquid amount to the bank, in conjunction with providing the necessary resources to meet these needs. But maintenance is costly investments in liquid form for the bank and for this reason it is necessary to achieve a more accurate cash flow.

## **2. Analysis method and resulting liquidity in banks**

Bank liquidity problems overlap covering the minimum reserve requirements used by the central bank to conduct monetary policy in light of economic developments conjecture. Thus, we considered a sample of banks in Romania to highlight the state of liquidity and liquidity risk during this period.

### **2.1. Bank liquidity analysis using financial ratios**

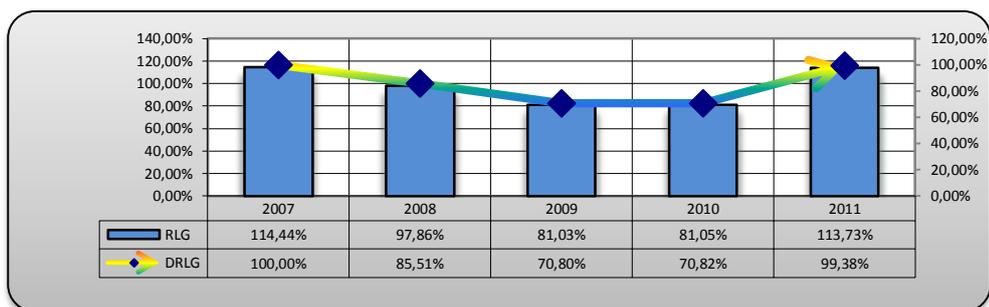
Banking system liquidity indicators, provided for central bank rules and calculated for Romanian banks are: overall liquidity, immediate liquidity, ratio of own funds and

resources permanent deposit coverage ratio, ratio of liquid assets; rate volatile assets, liquidity indicator.

*Ratio of liquid assets (RLG)* reflect the available capacity (deposits with the central bank, cash and cash equivalents, deposits with banks and other assets - AL) of the bank to cover its current liabilities (resources attracted in sight - DCR). General liquidity takes the form of general liquidity ratio as follows:

$$RLG = AL/DCR$$

It is estimated that the bank has a favorable liquidity when liquidity ratio is between 2 and 2.5. In the opinion of other specialists general liquidity ratio should be above 1.5. In the literature Anglo-American view that general liquidity ratio must be at least.

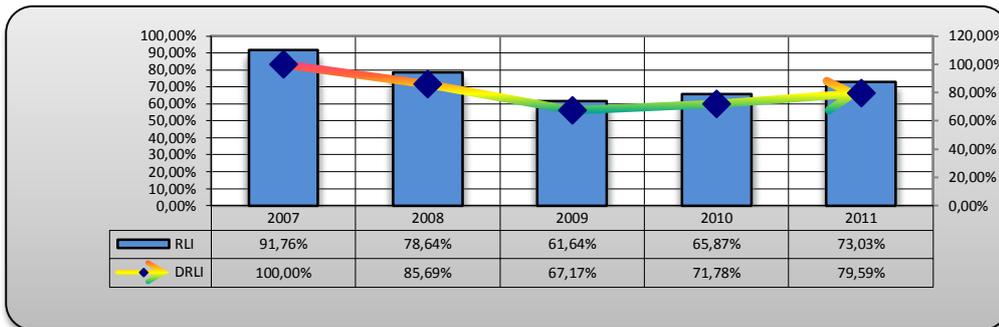


**Figure 1:** General liquidity ratio evolution in Romanian banks  
Source: The banks' own financial statements

In the analyzed banks of the indicator value analysis shows that overall, liquidity ratio recorded during the entire period analyzed values are below the threshold of 1.5. The highest value of liquidity occurred in the years 2007 and 2011 (1.14 and 1.13), but still well below the limit of 1.5. General liquidity developments over the reporting period is unfavorable, so that in the years 2009 and 2010 to reach a level of 81% of the indicator (0.81). In 2011 the situation improved reaching up to 1.13, but in these conditions, the indicator remains below 1.5.

*Immediate liquidity (RLE)* measures the degree to which liquid assets covering payments due in the short term. Immediate liquidity is calculated as a percentage ratio between liquid assets (cash, current account with the central bank and other central banks, short-term investments-TR) and accounts payable (at sight of customers, short-term loans-DCR), that:

$$RLE = TR / DCR$$



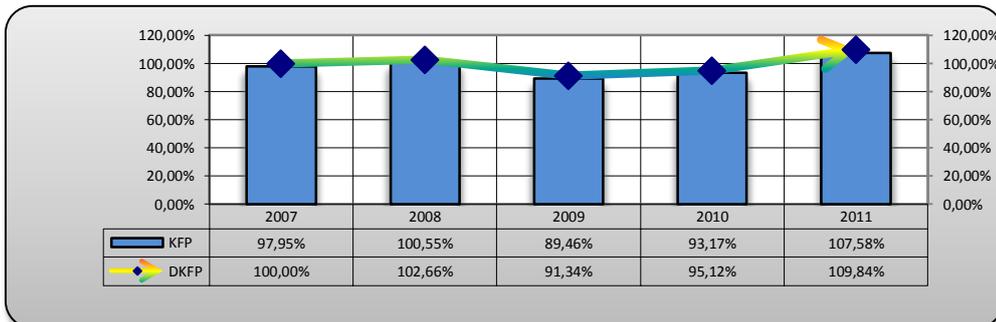
**Figure 2:** Immediate liquidity ratio evolution in Romania banks  
Source: The banks' own financial statements

Liquidity is favorable if it approaches 100%. According to other experts, the optimal level of the indicator is 20%, but financial security is still range between 50% and 100%.

As you can see immediate liquidity in case analyzed banks is maintained with continued entire period analyzed (2007-2011), the range safety. Although immediate liquidity following a downward trend, it remains at a good level. The highest value was recorded in 2007 (91.67%), and then decrease to 61.64% in 2009. From 2007 it began to grow, reaching in 2011 to record the value de73.03%.

*Ratio of own funds and permanent resources (KFP)* is determined as a percentage ratio between long-term bank resources (FTL) and Mon-term assets (ATL):

$$KFP = FTL / ATL * 100$$



**Figure 3:** Ratio of own funds and permanent resources evolution in Romania banks  
Source: The banks' own financial statements

Minimum ratio between long-term bank resources and long-term assets should be at 60%. Analyzing the values of this indicator can be seen that this value is above 60% throughout the period analyzed. The lowest value was recorded in 2008 (89.48%) and the highest was recorded in 2011 (107.56%). Regarding its evolution we see that the trend is sensitive constant DRB Significant indicator values do not fluctuate so in 2008 compared to 2007 it grew by only 3% in 2009 and then decrease

to the value of 89.46% and increase continued until 2010 when record value of 107.58%.

*Deposit coverage ratio (RAD)* is calculated as a ratio of total loans (CRA) and total deposits from customers (DA):

$$RAD = CRA / DA$$

The unit value of this ratio expresses a normal situation. A low rate and would be a nil excess liquidity and reduced profits. An over-unit rate would involve increased risks causing loss liquidation of assets, the need to cover the reimbursement of depositors.



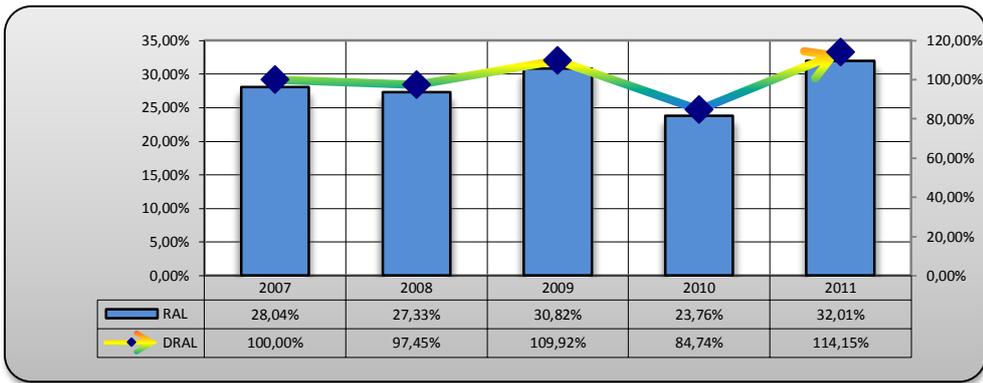
**Figure 4:** Deposit coverage ratio evolution in Romania banks  
Source: The banks' own financial statements

It can be seen that during the period analyzed indicator is below 1, which means that there was an excess of liquidity that means the volume of loans was less than the deposits. The fact that this report is one subunit shows that profit was diminished by the fact that, while in the case of bank loans has benefited from interest and fees related, in terms of bank deposits has to pay depositors interest on deposits. The highest value was recorded in 2007, when its value reached 93.56% and the lowest in 2009 when the indicator equaled 80.52%. Trend during the period under review, overall, is a descendent from 93.56% in 2007 and reached 70.67% in 2011.

*Ratio of liquid assets (RAL)* Ratio of liquid assets (RAL) is determined as the ratio of unemployed availability and marketable securities on the one hand (AL) and total bank assets (TA), ie:

$$RAL = AL / TA$$

This rate illustrates the dimensional size of liquid assets and liquid easily. An over-unit rate is favorable.



**Figure 5:** Ratio of liquid assets evolution in Romanian banks  
 Source: The banks' own financial statements

As you can see the indicator values are well below the considered normal. During the analyzed period the indicator value is somewhere at an average of 25%. Trend during the period considered is oscillating, so that the indicator is rising until 2009, followed by a decrease in 2010 and increase in 2011. The lowest value recorded in 2010, and the highest value that has indicator is 2011.

The share of liquid assets in total volatile resources (*RRV*) is determined as a ratio of volatile resources (*RV*) and liquid assets (*LA*), ie:

$$RRV = RV / LA$$

Volatile resources include deposits and other resources, which by their nature are short lived or downward changes unexpectedly and untimely. By natural or resources involves employing volatile liquidity. A nil rate is beneficial for bank management.



**Figure 6:** The share of liquid assets in total volatile resources evolution in Romanian Banks

Source: The banks' own financial statements

If the indicator analyzed banks are at a normal value only in 2007 (96.95%) and 2009 (88.47%). In the remainder of the indicator value is above that considered normal when reaching the maximum in 2009 stands at 122.04%. As you can see the indicator increases until 2009, and then to follow a downward trend until 2011.

*Liquidity indicator (RLI)* is calculated as the ratio between actual liquidity (LE) and liquidity necessary (LN):

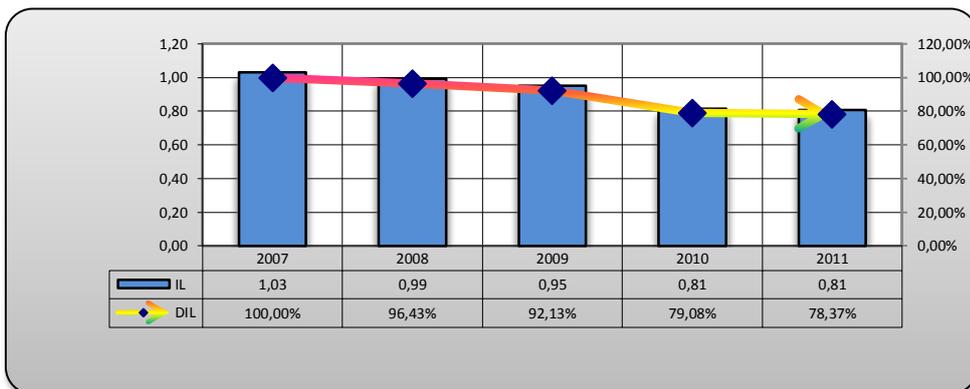
$$RLI = LE / LN$$

Actual liquidity is determined by summing, for each band, balance sheet assets and liabilities received and shown off balance. Necessary liquidity is determined by summing, for each band, the obligations and commitments data sheet and off-balance sheet highlighted.

Bands commitments received and given commitments are as follows: Under one month; between one and three months Three to six months Six to twelve months.

NBR rules provide that if a record surplus of liquidity in any of the bands maturity above, except for the last lane, it will add to the actual liquidity for the next maturity band.

Necessary liquidity destinations are: Setting reserve requirements, loan customer requests, customer requests for withdrawal of funds; Making interbank settlements, payment of other obligations of the bank (payment of dividends, taxes and so on). The main sources of liquidity (effective) are: Cash, Cash, demand deposits with the central bank or correspondent banks, Deposits, Loans from other banks or from the central bank.



**Figure 7:** Liquidity indicator evolution in Romanian banks

Source: The banks' own financial statements

Trend indicator, as can be seen from the chart above, is downward throughout the period analyzed. The only year in which there was excess liquidity was in 2007, when the indicator stood around 1.03, while the remainder of the indicator was positioned

below 1, indicating a lack of liquidity. The lowest value was recorded in 2010 (0.81), the maintaining and 2011.

## 2.2. General liquidity analysis using Eviews program

With EViews program we analyzed the relationship between general liquidity and volume current liabilities and liquid assets available for the period 2007-2011, the banks analyzed. The use EViews program we obtained the following result:

Dependent Variable: R\_GENERAL\_LIQUIDITY

Method: Least Squares

Date: 06/12/12 Time: 16:27

Sample: 2007 2011

Included observations: 5

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.091043	0.055651	19.60515	0.0026
Current_debts	-2.08E-10	2.68E-11	-7.751538	0.0162
Liquid_assets_available	1.90E-10	2.60E-11	7.298575	0.0183

R-squared	0.968132	Mean dependent var	0.976220
Adjusted R-squared	0.936264	S.D. dependent var	0.165249
S.E. of regression	0.041719	Akaike info criterion	-3.232025
Sum squared resid	0.003481	Schwarz criterion	-3.466362
Log likelihood	11.08006	F-statistic	30.37966
Durbin-Watson stat	2.609296	Prob(F-statistic)	0.031868

Source: The banks' own financial statements

It is noted that the t-test probability is below 5% In this case, the probability is less than relevant to that work, the null hypothesis is rejected and the coefficient is considered statistically significant. As a result, we can say that the evolution of general liquidity is influenced by the amount of current liabilities and liquid assets available.

Through F test is intended to measure the independent variables explain the dependent variable evolution. F test of the null hypothesis is that all regression coefficients are null. Whichever probabilities are two possibilities:

- "P" is the lower level of relevance in this case the null hypothesis is rejected, ie at least one of the regression coefficients is DRB Significant;
- "p" is superior levels of relevance, then the null hypothesis is accepted, that all the regression coefficients are significant.

F test results indicate a probability that is less than relevance (0.031) so that the null hypothesis is rejected, which means that at least one of the coefficients is significant. R<sup>2</sup> indicator, shows if new estimated regression is well specified. A regression is well specified if the value of this indicator is as near 1. If regression of overall liquidity, debt and liquid assets available, the value of this ratio is quite close to the value 1, so we can say that regression is well estimated. In other words, 96% of the total variance is due to the general liquidity available liquid assets and current liabilities. Wats Durbin statistic (DW) testing serial correlation of errors. If the value of DW is situated around 2, the errors are not correlated. Regarding the case treated me, the

value of DW stands at around 2, there is likelihood that errors are correlated to some extent.

### 3. Conclusions

Because banking risks are a source of extraordinary expenses, their proper management for revenue stabilization time acts as a shock absorber. If the bank risk management and overall management system is effective, then the bank will be successful. It is important for a bank to manage risks, as this enables them to predict to some extent the event risk and take the time necessary decisions to reduce the risk of potential adverse consequences.

Risk is considered to be one of the organic components of bank affairs. In the current economic environment, it is increasingly felt increasing banking competition, it is noted challenges faced by institutions in this field in the approach to business with a higher risk, but generates a substantial income. Some bankers may accept risk (including expected losses) as long as they can identify and manage uncertainty (unexpected loss). In terms of dynamic and volatile markets, the difference between the two types of losses fade, if not disappear.

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