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BASEL III LIQUIDITY RISK AND KOSOVO BANKING SYSTEM

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Abstract: The financial crisis 2007-2009 prompted the Basel Committee on Banking Supervision (BCBS) to intensify its efforts to strengthen the principles and standards for capital, as well as for the measurement and management of liquidity risk. Risk management is very important in the financial system, especially in banks. Among various risks Banks face is a liquidity risk it's managing enables Banks to fulfil their obligations
Basel III consists of set of measures internally agreed. The implementation of Basel III will considerably increase the quality of banks' capital and significantly raise the required level of their capital. In addition, it will provide a "macro prudential overlay" to better deal with systemic risk.
Like all Basel Committee standards, Basel III standards are minimum requirements which apply to internationally active banks. Members are committed to implementing and applying standards in their jurisdictions within the time frame established by the Committee.
To ensure that banks have sufficient liquidity to survive potential liquidity shocks, as happened few years ago, the Basel Committee has issued two new globally revised minimum standards under the Basel III rules for the first time in the banking history: LCR – Liquidity Coverage Ratio and NSFR – Net Stable Funding Ratio that contain new requirements for bank capital, as well as standardized rules in the liquidity area.
Banks need to fully comply with LCR and NSFR rules by January 1, 2019, according to the Capital Requirements Directive & Capital Requirements Regulation (CRD IV & CRR) rules.
Basel III rules, in the European Union attain their applicable judicial form through REGULATION (EU) No 575/2013. The regulatory package is due to enter into force on January 1st, 2014, but some provisions will be implemented gradually between 2014 and 2019 and will fully come into force on January 1st, 2019. But these rules are likely to undergo some revisions due to a proposal by European Union (EU), so implementation horizon could go being beyond 2019.
Performance of the Kosovo banking sector continued to be positive, thus contributing in maintaining the financial and economic stability of the country. Kosovo's financial system continues to be characterized with sustainable increase in all its constituent sectors. The banking sector in Kosovo as most successful story is developed by many international institutions, characterized by a large presence of foreign capital, where 89. 2% of all assets are managed by foreign banks and development is based on international standards.
Banking sector continued to have good liquidity position, with the main liquidity indicators standing above the minimal level as a required by the regulation.
The implementation of Basel III rules in Kosovo related to liquidity depends on the local regulator and Basel III standards.
Keyword: Risk management, liquidity risk, banking risk, banking sector, Kosovo

INTRODUCTION

The financial crisis 2007-2009 prompted the Basel Committee on Banking Supervision (BCBS) to intensify its efforts to strengthen the principles and standards for capital, as well as for the measurement and management of liquidity risk. In December 2010, the BCBS issued the Basel III: "International framework for liquidity risk measurement, standards and monitoring'. Its objective was to improve the global banking sector's ability to absorb shocks arising from financial and economic stress and reduce the risk of spill- overs into the real economy.
Basel III was a more far-reaching response to the lessons of the crisis, requiring banks to hold more, higher quality capital and introducing new liquidity standards. While the original 8 percent capital adequacy limit from Basel I and II was retained, effectively the minimum capital requirement became 10.5 percent of risk-weighted assets through the introduction of the capital conservation buffer. In addition, other capital buffers can result in higher minimum requirements for the system overall, and for individual banks in a period of increasing risks.
Basel III introduced a Common Equity Tier 1 (CET1) capital requirement of 4.5 percent of risk-weighted assets, which is effectively 7 percent since the 2.5 percent capital conservation buffer must be met with CET1. This, plus the requirement for Tier 1 capital of at least 6 percent of risk-weighted assets, increased the minimum capital available to absorb losses on a going-concern basis. To ensure going concern loss absorption, instruments qualifying as Additional Tier 1 (AT1) capital must be subject to write-down or conversion to common equity. This meant that

some hybrid instruments previously qualifying at Tier 1 capital were no longer eligible, requiring banks to raise more high-quality capital (BCBS 2011).

REGULATORY CAPITAL

Capital represents a buffer between the value of banks' liabilities and assets, similar to the accounting definition of equity as the difference between the value of assets and liabilities. From a supervisory perspective, the purpose of capital is to absorb unexpected losses so that the providers of banks' liabilities—commonly depositors—will be repaid in full even if the providers of capital—owners and subordinated debt holders—incur losses.

Under Basel III, total regulatory capital is still the sum of Tier 1 plus Tier 2 capital, less adjustments; however, all regulatory adjustments are deducted from CET1. Basel III regulatory capital can be expressed as:

(CET 1 – adjustments) + AT 1 + Tier 2 capital

CET1 capital as per Basel III definition consists of the sum of common shares, retained earnings, accumulated other comprehensive income and other disclosed reserves, and common shares issued by subsidiaries of the bank that are consolidated with the bank and held by third parties that meet the criteria for inclusion in CET1, less regulatory adjustments.

AT1 capital consists of subordinated instruments with no maturity and neither secured nor covered by a guarantee of the issuer.

Tier 2 capital consists of the sum of: (1) unsecured subordinated debt with a minimum original maturity of at least five years and limited-life redeemable preference shares; (2) stock surplus resulting from the issuance of instruments included in Tier 2 capital; (3) instruments issued by subsidiaries that are consolidated with the bank and held by third parties that meet the criteria for inclusion in Tier 2 capital; (4) general provisions or loan-loss reserves held against future unidentified losses, not ascribed to particular assets or known liabilities;9 and (5) regulatory adjustments applied in the calculation of Tier 2 capital.

Basel III introduced a wider set of deductions to buttress the quality of the capital in times of stress. These deductions include: (1) goodwill; (2) deferred tax assets; (3) defined benefit pension plan deficits; (4) excess minority interest in subsidiaries; (5) profit revaluation of own debt; and (6) threshold deductions (other deferred taxes arising from timing differences, mortgage servicing rights, and investments in unconsolidated subsidiaries) taken as the excess over 10 percent of CET1 individually and the excess of 15 percent of CET1 when considered in aggregate. Application of these new deductions was phased in over a five-year period ending in 2019.

Table 1. Basel III Capital Ratios (percent of risk-weighted assets)

	CET 1	**Tier 1 Capital**	**Total Capital**
Minimum	4.5	6	8
Capital conservation buffer	2.5		
Minimum plus capital conservation buffer	7	8.5	10.5

Source: BCBS (2011).

RISK-WEIGHTED ASSETS

Basel II and Basel III have introduced more granular versions of the original Basel I approach to risk weighting, breaking the original four groupings of assets into an increasing number of categories in efforts to make these standardized approached more nuanced. Compilers requiring additional detail on the standardized approaches to risk weights and the treatment of risk-mitigates should refer to national supervisory standards and the relevant version of the Capital Accord.

UNDERSTANDING LIQUIDITY RISK AND LEVERAGE RATIO

Basel III introduced a non-risk-based leverage ratio to serve as a supplementary measure to the risk-based capital requirements. Banks were initially required only to disclose their leverage ratio as defined in the original 2010 Basel III text. The capital measure (numerator) is Tier 1 capital (Basel III definition), and the exposure measure (denominator) comprises all balance sheet assets, derivatives exposures, securities financing transaction exposures, and off-balance-sheet items. Exposure as defined in Basel III provides a more comprehensive measure of risk than on- and off-balance-sheet items by requiring the use of the accounting measure of exposure plus regulatory requirements with respect to derivatives, repurchase agreements and securities finance, committed credit facilities, direct credit substitutes, and other specified items.

LIQUIDITY STANDARDS

Basel III introduced two internationally harmonized global liquidity standards: (1) the liquidity coverage ratio (LCR); and (2) the net stable funding ratio (NSFR). These two ratios are calculated using prescribed stress-scenarios and agreed international definitions of High-Quality Liquid Assets (HQLA). National implementation may vary, and compilers should rely on national supervisory standards. Some jurisdictions may apply the LCR and NSFR requirements only to a sub-set of banks, for example, only large internationally active banks. At minimum, calculation of the LCR and NSFR requires banks to apply liquidity stress scenarios to their balances sheets and requires supervisory review of banks' application of these stress-tests.

Liquidity coverage ratio

Liquidity risk is the probability of loss arising from a situation where there will not be enough cash and/or cashequivalents to meet the needs of depositors and borrowers, and sale of illiquid assets will yield less than their face value, or Illiquid assets will not be sold within the desired time due to lack of buyers. The LCR is intended to promote resilience to potential liquidity disruptions over a 30-day horizon. The LCR standard is defined by dividing the stock of HQLA by net cash outflows over a 30-day time period under stressed conditions.

$$\textbf{LCR} = \frac{\text{Stock of high-quality liquid asset (HQLA)}}{\text{Total net cash outflows over the next 30 calendar days}} \geq 100\%$$

LCR is not a ratio of balance sheet items, but rather the result of a supervisor-prescribed stress scenario. Compilers will rely on supervisory data sources. HQLA are those assets that can be easily and immediately converted into cash at little or no loss of value. These assets should be unencumbered, liquid in markets during a time of stress and, ideally, eligible as collateral for the central bank standing liquidity facilities. Implementing the LCR will be challenging in many countries because of a lack of assets that would meet the Basel definition of HQLA. To ensure that banks can implement without disrupting their financing activities, the minimum LCR requirement has been staggered at 60% from 2015, rising in equal annual steps of 10 percentage points to 100% on January 1, 2019. This graduated approach, coupled with the revisions made to the 2010 publication of the liquidity standards, are designed to ensure that the LCR can be introduced without material disruption to the orderly strengthening of banking systems or the ongoing financing of economic activity.

	1 January 2015	1 January 2016	1 January 2017	1 January 2018	1 January 2019
Minimum LCR	60%	70%	80%	90%	100%

NET STABLE FUNDING RATIO

The NSFR was developed to achieve the second objective of the Basel III liquidity standards: promoting longer-term resilience by encouraging banks to fund their activities with more stable sources of funding. Thus, even in the face of financial stress, an accumulated stock of high-quality liquid assets will help banks to absorb liquidity shocks, enabling them to continue to meet their obligations and perform their intermediation role. This will help to reduce the impact of any liquidity shocks on the broader financial system and the real economy.

The NSFR is defined as the ratio of the available amount of stable funding relative to the amount of required stable funding over a one-year time horizon. The NSFR should be greater than 100 percent and complements the short-term horizon of the LCR. The NSFR, is expected to take effect as the minimum liquidity standard by January 1, 2019 (but the date is likely to be revised due to changes proposed in CRD V/CRR II rules), intends to address maturity mismatches in the balance sheet.

$$\text{NSFR} = \frac{\text{Available amount of stable funding}}{\text{Required amount of stable funding}} \geq 100\%$$

Table 2. Basel III Capital Ratios (percent of risk-weighted assets)

	CET 1	Tier 1 Capital	Total Capital
Minimum	4.5	6	8
Capital conservation buffer	2.5		
Minimum plus capital conservation buffer	7	8.5	10.5

Source: BCBS (2011).

RISKS OF THE BANKING SECTOR- KOSOVO

Main indicators of the banking risks stood at satisfactory level (table 2). The liquidity position of the banking sector remained sustainable, despite the accelerated increase of lending and the growth of transferable deposits, representing developments which had an impact on the decline of liquid assets indicator to short-term liabilities. However, this indicator continued to remain significantly above the minimal level of 25 percent as required by the regulation.

Table 3. Risk indicators of the banking sector

Description	2014	2015	2016	2017
Loan-to-deposit ratio	78.1%	77.9%	80.7%	82.8%
Liquid assets to total short-term liabilities ratio	43.7%	41.9%	41.5%	35.9%
Capital Adequacy Ratio (CAR)	17.4%	19.0%	18.7%	18.1%
Nonperforming loans to total loans ratio	8.2%	7.2%	5.3%	3.9%
NPL coverage w ith provisions	116.4%	119.3%	119.9%	136.6%
The value of total large exposures to Tier 1 capital ratio	124.0%	81.2%	61.9%	66.7%
Opened positions in foreign currency To tier 1 capital	2.6%	0.8%	1.8%	2.3%

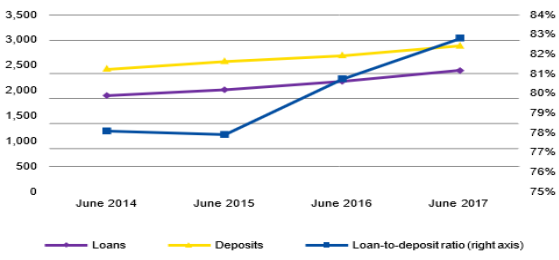
Source: CBK (2017)

Banks with foreign ownership, continued to dominate the structure of the banking sector in the country. In June 2017, foreign banks managed 88.3 percent of total assets and 91.0 percent of the banking sector capital.

LIQUIDITY RISK

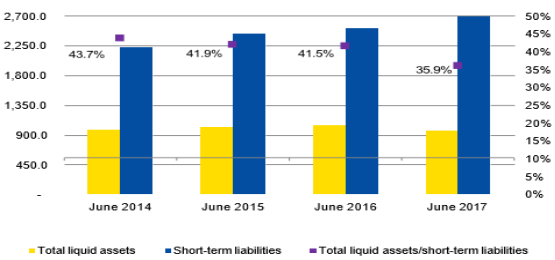
Banking sector continued to have good liquidity position, with the main liquidity indicators standing above the minimal level as a required by the regulation. However, compared to the previous year, liquidity indicators have marked a decline. Despite of the higher increase of deposits compared to the previous year, a more accelerated increase of loans had an impact on loans to deposits ratio to stand at 82.8 percent from 80.7 percent as it was in June 2016 (figure 68).

Figure 68. Loans and deposits of the banking sector, in millions of EUR



Source: CBK (2017)

Figure 69. Total liquid assets to short-term liabilities ratio



Source: CBK (2017)

The key liquidity indicator, liquid assets to short-term liabilities ratio decreased to 35.9 percent from 41.5 percent as it was in June 2016. The decline of the ratio is attributable to the higher increased rate of short-term liabilities with 6.9 percent, as a result of the shift from time deposits to transferable deposits, compared to the decline of 7.5 percent of liquid assets (figure 69).

Whereas, the increase of assets in other categories of maturity reflects an increase of long-term lending and a shift of investments in securities with longer term of maturities. Conversely, the increase of deposits with short-term maturity was the main factor that had an impact on the increase of liabilities with maturity of "1-7 days". The increase of deposits was marked also in maturities of '1-3 months", "3-6 months", "6-12 months" and "1-5 years", while all other categories of maturity marked a decline. This general shift of assets towards longer terms of maturities and the shift of liabilities towards shorter terms of maturities reflects the developments in interest rates.

These developments with a tendency of shifting deposits towards the maturity with short-term, may further expand the liquidity gap for a short-term period, hence may cause problems in managing liquidity with longer term maturity.

Stress-test analysis

Stress-test analysis present an important tool to assess the sustainability of the banking sector to possible shocks in credit portfolio and the position of liquidity, which may follow unfavorable macroeconomic developments and changes in market conditions. Through this analysis it is assessed the impact of these shocks in the quality of credit portfolio, on the level of capitalization and on the position of liquidity.

The analysis presented below is based on the data of the banking sector of Kosovo for 2017, which were used to assess the sustainability of the sector to credit risk, combined with the risk from interest rates and the risk from currency exchange rate (market risk). In the analysis it was tested also the ability of the sector to maintain the liquidity position under the hypothetic assumption of considerable deposits withdrawals (liquidity risk). The results of stress-test analysis continuously suggest satisfactory capability of banks to face "extreme situation" of the exposure to these risks.

RESULTS

The state of Kosovo's banking sector as regards to capitalization, until June 2017, was quite favorable, with the capital adequacy ratio standing at 18.1 percent[25] (table 8). The banking sector continued to stand at good position regarding the nonperforming loans to total loans ratio, with 3.9 percent of NPL rate, and the coverage rate of nonperforming loans with loan loss provisions which reached 136.6 percent.

Table 4. Summary of stress-test results: credit risk

Description	Number of banks 1/			CAR			NPL			Recapitalization 2/	
	CAR <0	CAR 0-8%	CAR 8-12%	Lower level	Higher level	Sector level	Lower level	Higher level	Sector level	In thousands EUR	As % to GDP
Current levels (prior to shocks) Results of macro scenarios	0	0	1	11.0%	74.0%	18.1%	0.6%	6.5%	3.9%		
Base scenario	0	2	0	9.4%	70.8%	18.1%	4.7%	11.1%	8.6%	€ 8,579.8	0.1%
	0	0	2							€ 7	
Combination of market risk	0	1	1	8.7%	70.1%	17.5%	4.7%	11.1%	8.6%	€ 10,985.1	0.1%
	1	0	1							€ 9	
Failure of three borrowers				1.4%	73.0%	17.3%	0.6%	33.8%	10.8%	27,994.50	0.4%
Failure of five borrowers				-2.1%	73.0%	16.5%	0.6%	42.9%	12.7%	37,101.10	0.5%

Note: 1/ out of ten banks considered in the stress-test analysis, the number of banks which falls under the required regulatory level, broken-down by sectors.

Note: 2/ In reporting the minimum and the maximum values of indicators on the level of banks, in some cases were excluded the high values of CAR and the NPL Value of 0 percent, with which are characterized banks in the beginning of their activity.
Source: CBK (2017)

SUSTAINABILITY ASSESSMENT OF THE BANKING SECTOR TO LIQUIDITY SHOCKS

Methodology

Baseline scenario: The analysis of the banking sector sustainability against the liquidity position is relied on baseline scenario of withdrawing a significant value of deposits from the banking sector, thus assessing the ability of the sector to face with such a shock. More specifically, it was considered an 8 percent withdrawal of deposits on daily basis, for five consecutive days, allocating 5 percent of remained deposits after each day for the purpose of banking operations in the following days.

The allocation of 5 percent of deposits for operational purposes, which under the assumed scenarios, the obligatory reserve of 10 percent would decrease for 50 percent. The scenario was also built under the assumption that during this period the possibility of converting liquid assets into cash would be 80 percent of total liquid assets, while the possibility of converting non-liquid assets in cash would only reach 1 percent of these assets within a day. The scenario in which this analysis is based is quite conservative also due to the fact that it was not taken into account the ability of banks to fulfill part of their liquidity needs through their external financing sources.

Results

Kosovo's banking sector was characterized with high liquidity level in 2017, where the key liquidity indicator (liquid assets to short-term liabilities ratio) stood at 35.9 percent. Therefore, as a result of the good liquidity position, the whole banking sector showed satisfactory ability of facing with assumed scenarios of deposit withdrawals.

Table 5. Summary of stress-test results: liquidity risk

Description	Number of banks 1/	Additional needed liquid assets (in thousands of EUR)	Loans/Deposits	Additional needed liquid assets as % to GDP
After the first day	0	€ -	89.0%	0.00 %
After second day	0	€ -	96.8%	0.00 %
After third day	0	€ -	105.2%	0.00 %
After fourth day	4	€ 22,910.86	114.3%	0.36 %
After fifth day	6	€ 76,293.46	124.3%	1.20 %

Note: 1/ Out of ten banks considered in the stress-test analysis, the number of banks which fall under the required regulatory level, broken-down by sectors
Source: CBK (2017)

The baseline scenario results of withdrawing 8 percent of deposits within a day, for five consecutive days, suggest that Kosovo's banking sector would begin to have needs for additional liquidity only in the fourth day, where two of the banks would lack an amount of EUR 22.9 million of liquid assets (table 9). Out of these four banks which would become not liquid, two of them are with overall systemic importance. At the end of the fifth day, problems would appear also in two other banks, which are not with overall systemic importance, thus increasing to six the number of banks which would have lack of liquid assets for facing with assumed deposit withdrawals. The scale of total deposit withdrawals in the fifth day would rise to 34.1 percent, and the amount of additional liquid assets needed for successfully overcoming liquidity problems would amount to EUR 76.3 million (1.20 percent of the GDP Nominal value in 2017).

CONCLUSIONS

International Framework for Liquidity Risk Measurement, Standards and Monitoring," published in December 2010 (BCBS 2010), represents a fundamental review of the risk-management practices of banks related to funding and liquidity to address the shortcomings. The Basel III rules for liquidity and funding are having an impact on several areas of the banking business. As a consequence, it is important to identify the key areas where they have the

biggest impact and define strategies, processes, and product treatments to tackle the upcoming challenges.Basel III introduced for the first time agreed international standards for liquidity. Reflecting that banks and their supervisors had paid insufficient attention to liquidity risk during the long period of benign market conditions preceding the crisis, the stress-scenario- based liquidity coverage ratio (LCR) and net stable funding ratio (NSFR) require banks not only to hold higher levels of high quality liquid assets (HQLA), but also require increased focus on liquidity risk management. At minimum, calculation of the LCR and NSFR requires banks to apply liquidity stress scenarios to their balances sheets and requires supervisory review of banks' application of these stress-tests. Risk management is an essential element of corporate governance necessary for balancing risk and reward, opportunities and threats as well as strategies and operations. Sustainable management of risk is the most perfect of risk management and banking industry, which has led to the creation of sustainable institutions in the strategic as well as in the operational aspect and thus creating investor confidence and safety of customers for commercial banks. Kosovo's banking sector was characterized with high liquidity level in 2017, where the key liquidity indicator (liquid assets to short-term liabilities ratio) stood at 35.9 percent. Therefore, as a result of the good liquidity position, the whole banking sector showed satisfactory ability of facing with assumed scenarios of deposit withdrawals. Stress-test analysis present the data of the banking sector of Kosovo for 2017, which were used to assess the sustainability of the sector to credit risk, combined with the risk from interest rates and the risk from currency exchange rate (market risk). In the analysis it was tested also the ability of the sector to maintain the liquidity position under the hypothetic assumption of considerable deposits withdrawals (liquidity risk). The results of stress-test analysis continuously suggest satisfactory capability of banks to face "extreme situation" of the exposure to these risks.

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