



# CERTAIN ASPECTS OF THE CAPITAL AND LIQUIDITY OF BANKS IN BOSNIA AND HERZEGOVINA

**Radomir Šalić**

“Sinergija” University, Bijeljina, Republika Srpska, Bosnia and Herzegovina

© MESTE NGO

JEL category: **G21, G33**

## **Abstract**

*The latest standards in banking, as proposed by way of the regulations of the Third Basel Accord, aim to support banks in their tendency to absorb the shock waves produced by financial and economic stresses, no matter what their point of origin is. This document's standards require banks to increase their capital, improve its structure, and thus improve the liquidity risk coverage. Regulators all over the world tend to impose and accelerate the implementation of these common regulations. However, many countries have not even started the process. This group of countries includes the banking system of Bosnia and Herzegovina, which has done very little to implement the process, as seen from the level of its banks' capital and the model of establishing liquidity. The reason for such a state of affairs lies primarily with the regulators in Bosnia and Herzegovina, who have neither drawn up such regulations nor adopted them. An examination of the official data from commercial banks has shown that the banking system of Bosnia and Herzegovina can and should meet the suggested standards, despite the fact that the new model of establishing banks' liquidity is broader and more encompassing than the present one devised by the Banking Agency, because it takes into consideration more balance positions, both within a bank's assets and liabilities, but also includes all the significant off-balance positions of a bank, which have not been previously included. Our final conclusion is that the banks in Bosnia and Herzegovina should adopt and implement the standards of The Second Basel Accord, and then proceed towards the application of the more advanced standards contained in the Third Basel Accord. This means that the banks in Bosnia and Herzegovina should first increase their capital, which will enable them to increase the deposits, and the increased deposits will, in turn, enable the required level of liquidity.*

**Keywords:** capital, liquidity coverage ratio, risk, Bosnia and Herzegovina.

Address of the author:

**Radomir Šalić**

✉ [salic\\_radomir@yahoo.com](mailto:salic_radomir@yahoo.com)

## **1 INTRODUCTION**

This paper has come about as a result of the directives and conclusions published by the Basel Committee on Banking Supervision as the regulations of the Basel III standards, which



address the details of new global capital and liquidity standards, supported by the leaders of the G-20 at the 2010 Seoul summit. To give a specific example of a medium-sized bank, a test was conducted in which the liquidity ratio was calculated according to Basel III and according to the existing regulations (decisions) passed by the regulatory organs of Bosnia and Herzegovina, and the results obtained were then compared and their effect was established. Besides, all the countries which are members of the Basel Committee are obligated to introduce the Basel III standards as national regulations by the end of 2013, and their implementation should be carried out in phases by 2019. The banking system of Bosnia and Herzegovina should act in the same or a similar manner, because it has accepted the previous accords as well, but the dynamics and deadlines of implementation should be determined by the regulatory organs of Bosnia and Herzegovina, and they should not differ significantly from those established in other countries.

## 2 THE BASICS OF THE THIRD BASEL ACCORD

Basel III represents a global regulatory framework for stable banks, which consists of a set of reform measures aimed at providing support to the basic concept, i.e. the ability of banks to absorb the shock waves produced by financial and economic stresses, no matter what their point of origin is, or Basel III is an initiative for internationally coordinated regulatory change that is designed to offer a response to some of the inadequacies of the regulatory framework as it stood before the financial crisis of 2007-2011 (Gual, 2011). This is, in fact, a further, continual effort on the part of the Basel Committee to try to strengthen the regulatory framework of banks, supervision and the risk management function. The regulatory framework refers to the level of capital required to

function as a shield against a bank's bankruptcy, generating increased confidence among the bank's clients and ensuring the bank's growth in the long term (Đukić, 2007). A higher level of capital, combined with a new way of establishing a bank's liquidity, should decrease the probability and severity of banking crises in the future. More precisely, the Basel III standards in banking establish a higher and better-quality level of capital in banks, a better and higher-quality coverage of the liquidity risk, and better measures for more successfully overcoming stress periods in banking, which include:

- a micro approach to a bank's safety, and
- a macro approach to the safety of a bank and the banking system as a whole.

Basel III's micro approach to safety tends to help increase the resistance of each individual bank in stress periods, because it establishes:

- a minimum common equity from 2 to 4.5% and a minimum Tier 1<sup>1</sup> equity from 4 to 6%. The minimum total equity (including both Tier 1 and Tier 2 equities) as a percentage of risk-weighted assets remains the same, i.e. 8%,
- various capital regulation instruments which have to meet stricter criteria, so that innovative/hybrid capital with incentives to purchase, which can currently be calculated according to Tier 1 may be abandoned over time, while the capital instruments of Tier 2<sup>2</sup> are coordinated. Tier 3 capital, previously available for covering market risks, will be eliminated, with a significantly more energetic supervision, risk management, and disclosure standards.

Through its macro approach, Basel III is introducing completely new elements into the global regulatory framework, such as:

- capital conservation buffers as additional capital, which may help protect banks from credit losses, and which can be activated in a

<sup>1</sup> Common Tier 1 capital consists of the sum total of the following elements: 1. common stock issued by banks which meet the classification criteria as common stock for regulatory purposes; 2. stock surplus resulting from the issue of instruments included in Tier 1; 3. retained earnings; 4. accumulated other comprehensive income and other disclosed reserves.

<sup>2</sup> Common Tier 2 capital consists of the sum total of the following elements: 1. instruments issued by banks

that meet the criteria for inclusion in Tier 2 capital (and are not included in Tier 1 capital); 2. stock surplus (share premium) resulting from the issue of instruments included in Tier 2 capital; 3. instruments issued by consolidated subsidiaries of a bank, held on behalf of third parties that meet the criteria for inclusion in Tier 2 capital and are not included in Tier 1 capital.

- period of stress. The buffer value is 2.5% of common equity. Also provided are counter-cyclical buffers, which may be disclosed during a crisis, and may be an extension of capital buffers;
- a minimum leverage ratio will be introduced for systemically important banks, which should act as a preventive measure against further exposure to risk;
  - greater capital requirements for commerce and securitization activities have been announced. Commerce reforms should initiate an introduction of new risk-weighting in order to manage the risks in commerce portfolios better;
  - Basel III increases capital requirements and risk management standards for contracting parties exposed to credit risks stemming from derivatives, securities and repo-financing transactions. The goal is to decrease the risk of transferring shocks between banks, and the measures include, for instance, the use of stress inputs in order to determine capital requirements for contracting parties exposed to credit risk and market losses stemming from a deterioration of the creditworthiness of contracting parties;
  - Basel III also contains measures pertaining to the use of external credit ratings within the capital framework. Among other things, Basel III incorporates elements of The International Organization of Securities Commission (IOSCO) into the Code of the Basic Credit Ratings Agency, and will require banks to conduct internal estimates of the outer securitization exposures, and
  - introduces a new way of measuring liquidity by way of the minimum Liquidity Coverage Ratio (LCR) and the minimum Net Stable Funding Ratio (NSFR). Although a long adjustment period is allowed, markets are likely to anticipate the required changes and penalize banks that fall substantially short of the LCR and NSFR liquidity requirements. Thus banks need to increase the liquidity of their assets and reduce the liquidity of their liabilities. and reduce the liquidity of their liabilities (Allen, 2012).

For many banks, the implementation of the Third Basel Accord represents a complex process which takes a certain time to be applied, i.e. for establishing the national regulations on the basis of it, so that it is implemented in stages (phases) which, according to the Basel Committee, should unfold as follows:<sup>3</sup>

Table 1 The projected phases of the implementation of the Third Basel Accord

Phases	2013	2014	2015	2016	2017	2018	2019
<b>C</b> Minimum Common Equity Capital Ratio	3.50%	4%	4.50%	4.50%	4.50%	4.50%	4.50%
<b>A</b> Capital Conservation Buffer				0.625%	1.25%	1.875%	2.50%
<b>P</b> Minimum common equity + <b>I</b> capital conservation buffer	3.50%	4%	4.50%	5.125%	5.75%	6.375%	7.0%
<b>T</b> Phase-in of deductions		20%	40%	60%	80%	100%	100%
<b>A</b> Minimum Tier 1 Capital	4.50%	5.5%	6.0%	6.0%	6.0%	6.0%	6.0%
<b>L</b> Minimum total assets		8%	8%	8%	8%	8%	8%
Minimum total assets + conservation buffer		8%	8%	8.625%	9.25%	9.88%	10.50%
<b>L</b> Liquidity coverage ratio – <b>I</b> minimum requirement			60%	70%	80%	90%	100%
<b>Q</b> Net stable funding ratio						Min std.	

<sup>3</sup> Cf. <http://www.bis.org>.

Many global banks have already commenced increasing their capital even without the formal rules, with 100 largest world banks having already made a significant progress in that area. However, it cannot be said that the implementation of Basel III is on a satisfactory level, which is understandable, taking into consideration that the final deadline for its definitive implementation is 2019.

### 3 CRITIQUE OF THE BASEL ACCORDS REGULATIONS

Today, there already are theorists, as well as professionals, who criticize the regulations and requirements of the Third Basel Accord, especially in relation to the level of capital and the method of calculating it, and also in relation to the new model of calculating a bank's liquidity level. Some are of the opinion that increasing the level of capital is not good at all, especially if new investors appear, for infusion of capital from the outside will affect control over banks, especially when new investors decide to cash their investments in a bank (Berk, 2011). Otherwise, banks tend to hold significantly more capital than required by regulators because regulatory requirements are not the only determining factor of actual capital levels (Slovik, P., & Cournede, B, 2011). Regulators from the EU have on various occasions criticized the USA for its slow implementation of the Basel Accords regulations in general, and on account of the fact that its banks have fallen behind in that respect, because they have not managed to make any significant progress in relation to the level of the banks' capital in the past. Regulators from some countries are still working on their own regulations in that respect,<sup>4</sup> so that, for instance, banks in the USA, apart from the regulations of the Basel Accord (capital adequacy ratio), also use the rule of financial leverage or the model of the capital-total bank capital ratio when establishing the criterion of the necessary level of capital in banks. According to the existing Basel regulations, a well-capitalized American bank is one having the total assets-risk-weighted assets ratio of at least 10%, and the primary (basic equity, Tier 1) capital-risk-weighted assets ratio of at least 6%, while simultaneously, according to the indicator of the

financial leverage comprising the primary capital (Tier 1)-total bank assets ratio, the capital of a well-capitalized bank should be 5.5%. As opposed a well-capitalized one, a well undercapitalized American bank achieves the capital adequacy ratio of less than 6%, and the primary capital-risk-weighted assets ratio is under 3%, just as the financial leverage indicator is under 3% (Rose, 2003).

In such a situation, critics of the Basel regulations in the USA favor the financial leverage indicator, because they consider it to be more realistic, since it encompasses all the assets in a bank's balance, and not only the risk-weighted ones. Thus, for instance, FDIC<sup>5</sup> Vice-President Mr. Hoeing thinks that, through the Third Basel Accord, international regulators have agreed to require of banks to have a larger number of buffers intended to remediate bank losses until they achieve their minimum goal, which is actually an illusion of precision in defining insufficiently adequate capital. In his opinion, all Basel Accords on capital, including the projected Basel III, are looking backward and trying to assign risk-weights in the future, which is not logical and cannot work out, for bank managers adjust their balances by disclosing their risk-weighted assets as being at a much lower level than their total assets. Instead, he suggests that regulators should focus on another capital-related criterion, one which more accurately reflects the capital position of a bank, i.e. the capital-total assets ratio, or the financial leverage, because it enables a simpler and more direct insight into the amount of loss a bank's capital may absorb. Why is that so? Because the world financial crisis of 2008 showed that the financial leverage ratio of at least 3% (as proposed by Basel III) was too low, and that it was found out too late that less than 3 cents of primary capital per dollar of balanced assets was not sufficient to absorb even the smallest financial losses, let alone great shocks (Hoeing, 2013).

Adjustment of capital requirements is the main political problem for both regulators and governments worldwide, as well as one of the key factors to be reviewed when assessing the security and the soundness of a bank's operations

<sup>4</sup>The USA, Great Britain, Germany.

<sup>5</sup>FDIC – Federal Deposit Insurance Corporation, founded by the US Congress for the purpose of

maintaining the stability of and public trust in the national banking system.

(van Greuning, 2006). Basel III certainly shows that banks should use more of their own capital for financing their own assets than according to prior rules. However, this is a clear warning that there may be an increase of some bank expenditures, whose measurement requires a careful consideration of a wide array of questions. It is required, therefore, to calculate expenses created by an increased employment of capital, with a lesser debt. Without making such a calculation, there can be no estimate of the precise expenses or of the optimum level of bank capital, and the conclusions about the required level of capital will probably not be realistic (Miles, 2012).

Presumably, we can accept both of the above views. However, we are left with the impression that the critics of the proposed solution have directed their ire more toward the regulation complexity than toward the level of capital that will be required from banks. In any case, bank capital carries both advantages and expenditures. The advantages are felt by bank owners, for their investments become safer, reducing the possibility of going bankrupt, but bank capital is expensive, for the higher the amount of capital, the lower the returns (Mishkin, 2010). As for the banking system of Bosnia and Herzegovina, the implementation of the Third Basel Accord is not brought into question. However, considering that the regulatory organs of Bosnia and Herzegovina have neither proposed nor adopted the banking standards of Basel II yet it is not logical to implement the derived regulations before the basic ones, from which the former have been derived<sup>6</sup>. In fact, it is impossible and illogical to implement the rules of Basel III if we have not applied those from Basel II yet. Now, the banking agencies is still only on the adopted strategy of capital measurement and capital standards under the Basel II agreement and nothing more (Agencija za bankarstvo Republike Srpske, 2009).

#### 4 LIQUIDITY AND LIQUIDITY RISK

A special segment of the Third Basel Accord deals with liquidity measurement in commercial banks. Liquidity and insolvency are terms and

phenomena that have always attracted the attention of both theorists and researchers, and also of those who deal with them on a daily basis, i.e. individuals and decision-makers, which means the management of both small and big economic and non-economic legal entities. So, all the aforementioned forms of social organization are in either one or the other state, i.e. either solvent or insolvent. However, economists use the term liquidity (solvency) mostly to describe the ease with which an asset may be transformed into a medium of exchange (Mankiw, 2005), and they express it through ratios (Lat. *rationalis*), which express in numerical terms the interdependence of two or more phenomena (Peterson, 1994). However, if an individual or a company does not have or cannot establish a balance between payment obligations and their affordability, which is to say, if payment obligations are higher than the funds available for their payment, there appears a problem, or the state of illiquidity (insolvency). Thus, insolvency can be defined as a hiatus in asset circulation in the process of a company's reproduction (business insolvency), or the impossibility of a free flow of the essential factors of the business process and their transformation from monetary into material forms, and vice versa, whereas liquidity presupposes unconditional fulfilment of due payment obligations over a particular period of time, or the ability of a corporation to meet its short-term financial obligations in a timely manner (Šalić, 2013) or, it is a relationship of dependency and a combination of short-term forms of capital and assets in which the short-term money engaged (Tintor, 2009).

Basel III defines liquidity as the ability of banks to finance an increase in assets and fulfill their liability obligations on due date without making unnecessary losses, while the liquidity position presupposes a solvent assets-obligations ratio, or the expected cash inflow and outflow, over a certain period of time (Basel, 2010). Otherwise, the resulting liquidity risk which may be said to represent a current or future threat to profit or capital, stemming from a bank's inability to fulfill its obligations on due date (Šalić, 2012). Some

pertaining to the implementation of the Second Basel Accord.

---

<sup>6</sup> In Bosnia and Herzegovina, work still goes on, with the help of USAID and within the framework of the PARE program (Partnership for the Advancing Reforms in the Economy), on drawing up and adopting the regulations

authors think that the liquidity risk represents a “derivative” form of risk, and that it is actually a consequence of a bank’s exposure to other risks, on account of which banks tend to marginalize it. Namely, a research has shown that up to 67% of risk managers in American banks think that the liquidity risk in their banks is not pronounced at all, and therefore they do not review it. The importance of liquidity is reflected and clearly visible only in crisis situations (Turner, 2002).

According to Matz, there are three basic forms of liquidity risk. These are: uncoordinated liquidity risk, increased liquidity risk and market liquidity risk. An uncoordinated liquidity risk occurs due to a lack of coordination between the assets and the liabilities of a bank, when the bank should manage the liquidity risk through a policy of balancing the due date balance structure and a regular monitoring of the dynamics of due dates of deposits and investments, and also by monitoring, analyzing and reporting on the state of obligations and receivables on a daily basis. An increased liquidity risk is a risk which appears due to a need for higher amounts of liquid funds which banks could encounter in the future. A market liquidity risk appears due to a potentially weaker liquidity of the financial market, which has as its consequence the impossibility of selling or purchasing liquid assets (Matz, 2001).

The degree of liquidity risk depends on the concrete position of a bank on the financial market, so that the same liquidity position of a bank may be satisfactory in one situation and inadequate in another. For this reason, a bank has to examine the influence of potentially stressful situations on its liquidity (deposit outflow, illiquidity of great debtors, etc.). The Third Basel Accord prescribes the standards which banks should observe when dealing with liquidity and liquidity risk, as well as the contents and form of the model of calculation and reporting on the liquidity ratio, all for the purpose of measuring and monitoring a bank’s liquidity position. According to this agreement, there are two chief requirements: qualitative and quantitative ones.

#### 4.1 Qualitative requirements

Qualitative requirements are listed in “The Principles of Liquidity Risk Management”, dating from September 2008, published by the Basel Committee for Banking Supervision as guidelines

for establishing a common framework for liquidity risk management on the international level (Basel Committee for Banking Supervision, 2008). According to this document, banks should establish a robust framework for liquidity risk management in order to secure the maintenance of a satisfactory level of liquidity, including the reserves of unrestricted high-quality liquid assets, so that they could withstand a series of stressful events, including a loss or damage of both secured and unsecured funding sources.

Apart from the prescribed standards and tools, this framework should also include:

- the Supervisory Board criteria pertaining to a clearly specified level of liquidity risk tolerance (limits and minimums), in accordance with an appropriate business strategy and the role of a bank in the financial system,
- creating a strategy, policy and practice for a bank’s liquidity risk management, in accordance with the established risk tolerance, i.e. this framework should define:
  - a financial strategy which will enable an effective diversification of the financial sources of a bank and their financing deadlines,
  - an algorithm of strategy implementation, with a constant presence on selected financial markets, and maintaining strong relations with the fund sources for the purpose of their diversification,
  - an algorithm of regular measurement of one’s own financial potential, for the purpose of quick fundraising from all sources,
  - an algorithm of identifying the main factors influencing a bank’s ability to acquire new sources of funds for the purpose of securing their validity and success,
- data review and regular reports submitted by a bank’s management to its supervisory board,
- control and approval of the strategy, policies, and practice pertaining to liquidity management, at least once a year by a bank’s Supervisory Board,
- calculation of the expenses, compensations and liquidity risks of a bank, and their inclusion in the internal pricing and output measurement for the purpose of approving

- placement of new products for all significant business activities,
- all quality procedures of identification, monitoring and control of the liquidity risk, with a projection of the corresponding, all-inclusive framework of cash flows originating, from the balance and out-of-balance positions over a period of time,
  - active monitoring and control of a bank's exposure to the liquidity risk, and of the need for fund sources among legal entities and financial institutions, taking into consideration the legal, regulatory and operative limitations of the possible transferability of liquidity,
  - active management of the positions and liquidity risks of a bank during a single day, for the purpose of settling its obligations by due dates in all situations (both normal and stressful), so that it could contribute to an unimpeded functioning of the payment operations system,
  - management of a bank's collateral positions by making a classification of encumbered and unencumbered assets,
  - timely monitoring of the physical locations of legal entities with a collateral on offer,
  - regular testing of a bank for stress situations, with short-term and long-term possible scenarios together, identifying sources of potential liquidity deformations, and also for the purpose of securing that the existing level of a bank's exposure to risk remains in keeping with the established internal level of liquidity risk tolerance,
  - use of stress testing results for the purpose of constant readjustment of a bank's strategy of liquidity risk management, as well as designing efficient plans for dealing with unforeseen situations, having an official plan for financing unforeseen situations, with a clearly defined strategy for dealing with liquidity shortage in critical situations,
  - maintenance of bank reserves unencumbered with high-quality assets, which will be held as insurance against a number of liquidity-related stress scenarios, including those pertaining to loss or damage of unsecured and normally available secured fund sources, and that there

should be no legal, regulatory or operative obstacle to using these assets for the purpose of obtaining funds,

- that a bank should publicly and regularly publish information about the validity of its liquidity risk management framework and liquidity position.

## 4.2 QUANTITATIVE REQUIREMENTS<sup>7</sup>

The basic role of quantitative liquidity requirements is an attempt to surpass and eliminate the drawbacks identified during the last economic crisis in the financial sectors of many countries (2007-2008), for the purpose of harmonizing the measurement model and liquidity risk management. What this is all about is, actually, an accounting-based assessment of the risks of liquidity and failure to fulfil financial obligations on due date (Damodaran, 2007).

According to this request, banks should periodically:

- determine their liquidity positions according to the methodology prescribed for each ratio and monitoring tool. The basic prescribed liquidity ratios are:
  - LCR – the Liquidity Coverage Ratio,
  - NSFR – the Net Stability Financial Ratio
- measure and monitor their liquidity positions by employing the following methods:
  - analysis of contractual maturity mismatch,
  - analysis of concentration of funds,
  - analysis of available unencumbered assets,
  - analysis of liquidity coverage ratios in all relevant currencies,
  - analysis of stress tests
- adopt minimum requirements for risk management, as well as additional standards and tools for determining and managing the liquidity risk which are suitable for the scope and complexity of their activities,
- design, adopt, and maintain models for planning and maintaining an adequate level of liquidity, which should be consistent with the

---

<sup>7</sup> The quantitative requirements are prescribed in Basel III: The International Framework for Liquidity Risk

Management, Standards and Monitoring, published by the Basel Committee on Banking Supervision in December 2010.

internationally established principles, guidelines, and standards,

- adopt acts for a regulation of quantitative and monitoring measures which have to be implemented according to the adopted methodology, and
- adopt acts for prescribing qualitative standards for identification, measurement, monitoring, and liquidity risk management,

through their policies and procedures for liquidity risk management.

#### 4.2.1 The liquidity coverage ratio (LCR)

The liquidity coverage ratio (LCR) is calculated as a quotient of highly liquid assets and the total of projected net cash outflow during a period of thirty calendar days (Basel Committee for banking Supervision, 2010).

$$\text{LCR} = \frac{\text{Highly liquid assets}}{\text{Total of projected net cash outflows a period of 30 days}} \geq 100\% \quad (1)$$

When determining LCR, each bank must: determine its short-term liquidity position by way of calculations which should secure that the bank maintains an adequate level of unencumbered, high-quality assets that can be converted into cash to meet the liquidity requirements within a period of thirty days; the ratio value cannot be less than 100%, and it must be met continually on a consolidated basis; identify mismatches within the span of thirty days and secure fund sources sufficient for filling the gaps within that period; determine the ratios on a daily basis and report the results in a prescribed way. LCR constitutes high-quality assets which every bank should have, and which should cover the total net cash outflow during a thirty-day period according to the prescribed stress scenario. In order to be qualified as high-quality, those assets have to be liquid<sup>8</sup> during the stress period. They are classified into Level 1 Assets and Level 2 Assets, according to their characteristics.

*Level 1 Assets* should comprise: cash, central bank reserves which can be withdrawn in a stress situation, marketable securities (issued by states and central banks) whose credit risk is assigned the weight of “0%” according to the Standardized Approach of Basel II Standard (Bazelski odbor za nadzor banaka, 2004), marketable debtors’ securities whose weight is higher than “0%” if issued by the state or the central bank in a country in which there is a reaction to liquidity risk, and marketable debtors’ securities whose weight is higher than “0%” if issued by the state or the central bank in a foreign currency.

*Level 2 Assets* should be diversified according to several criteria (issuers, participants, types), and cannot exceed 40% of the total value of high-quality assets after a discount rate of at least 15% has been taken off the current market value; what it boils down to are marketable securities and corporate bonds.

Marketable securities are receivables due to the state, or securities that the state guarantees for, as well as receivables due from central banks, on the condition that they are assigned the weight risk of 20% according to the Standardized Approach of the Basel II standards for credit risk, that they can be traded on big and active repo or cash markets with a low level of concentration, that there exist attested records testifying that those securities are a reliable source of liquidity on the market and under stressful conditions on the market during a period of thirty days, that those securities are not a liability of the bank selling them or of any of its related sections.

Corporate and covered bonds have to meet the following requirements: that they were not issued by a bank or any of its related sections; that they were not issued by any financial institution or any of its related sections; that these assets have a credit rating attested to by a reputable external institution dealing with credit estimates (the rating must be at least AA), or that it does not have a credit appraisal attested by a reputable agency, but is internally ranked in such a way that it is comparable with the aforementioned rating system; that these securities are used to trade on large and deep cash markets with a low level of

<sup>8</sup>This means that it can easily and quickly be sold or bought, cashed in or marketed on the financial market.

concentration, and that there are attested records testifying that those securities are a reliable source of liquidity on the markets and under stressful conditions on the market during a period of thirty days.

The total outflow of net monetary funds is the sum total of expected outflow, reduced by the sum total of expected inflow of those funds in a stress scenario, for the next thirty days, and it is calculated by multiplying its liability balance by the rates or assigned weights according to which they are expected to expire or be withdrawn during the stress period. The total expected inflow of monetary funds is calculated by multiplying the remaining assets balance or contracted receivables by the rates or weights according to which they are expected to become due, according to the scenario of the aggregate amount of 75% out of the total expected cash outflow.

#### 4.2.2 The net stability financial ratio (NSFR)

The net stability financial ratio (NSFR) represents a supplement to LCR and a promoter of structural changes in banks' risk liquidity profiles, from short-term financial discrepancies toward a more stable, long-term financing of assets and business activities. It is calculated by dividing the available stable funds by the value required for stable financing over a period of one year. This ratio has to be greater than 100%, i.e. the available stable funds have to be higher at all times than the required stable funds, and it is every bank's obligation to calculate it at least once a month and report the results to the supervisors, which is to say:

$$NSFR = \frac{\text{Available stable funds}}{\text{Required stable funds}} > 100\% \quad (2)$$

Stable sources of funding are made up of the stockholders' capital and those obligations which are supposed to be reliable sources of funds over a one-year period under the conditions of prolonged stress. The required stable funds comprise cash unencumbered as a collateral, as well as unencumbered short-term securities, repo instruments, loans given to banks and other financial institutions with maturity periods of less than a year, securities with residual maturity periods of one year or exceeding one year (in the case of claims from governments and central banks), corporate bonds with the AA rating, other securities with a credit weight of 20%, gold, etc.

### 4.3 Liquidity risk monitoring tools

Monitoring tools, or monitoring procedures, constitute models and forms of measurement and monitoring liquidity risks which every bank should employ to manage its liquidity positions in accordance with them. Those forms of measurement and liquidity risk monitoring can be expressed through analyses of: contractual maturity mismatch, the concentration of funds, the available unencumbered assets, liquidity coverage ratios and through stress tests.

The purpose of analyzing contractual maturity mismatch is to identify the gaps between the contracted inflow and outflow of liquidity over specific time intervals, by way of which it is learned how many additional fund sources a bank needs to have in each of these intervals, in case the funds outflow happens in the earliest possible way. This analysis is conducted for all currencies in which a bank has a significant exposure. An analysis of the concentration of funds should indicate the way in which a diversification of depositors and other external fund sources should be made in order to reduce dependence on a single source or a small group of sources for those funds. The concentration of funds is considered to be the amount of funds in the domicile currency from any single source or a group of related sources which includes more than 1% of the total balance sheet of a bank, while that value for a foreign currency amounts to 5%. The goal of this type of analysis is to identify any significant reliance on funds that would create problems for a bank's liquidity if they were withdrawn.

The available unencumbered assets are those which are marketable as a collateral on secondary markets, and are used for settling a potential lack of liquidity in the immediate future. These assets must not be deposited, but must be freed from all restrictions concerning their use by a bank.

An LCR analysis is an analysis for each currency in which a bank has such a level of exposure that one could identify a potential currency mismatch which may not be evident while calculating its global LCR.

In the process of planning for unexpected situations, banks should prepare for liquidity management in stressful situations. The methodology for calculating LCR and NSFR is based on a stress scenario for the purpose of

harmonizing the liquidity risk measurements according to international practice. Creating alternate scenarios is an obligation of each bank and primarily depends upon a bank's own profile of liquidity risk. In that sense, banks should periodically test alternate scenarios and estimate their influence on the cash flow by using reasonable assumptions related to market liquidity factors and internal financing factors. It is a bank's obligation to present the results of stress tests to supervisors and get an opinion from them, especially in a situation when there is a liquidity-related problem, as the responsibility for a bank's liquidity lies primarily with the bank's management, because the management governs the bank and has the obligation to keep it safe from stresses, by which it also protects, first of all, the bank's depositors, as well as the stockholders.

## 5 DETERMINING LCR IN A BANK IN BOSNIA AND HERZEGOVINA

Regardless of the fact that the banking system of Bosnia and Herzegovina at present is nowhere near to adopting the regulations of the Third Basel Accord, due to its great significance and frequent use, an LCR test was conducted for a commercial bank in Bosnia and Herzegovina, over different time periods and according to different calculation models, i.e. according to the Basel III standards and according to the regulations of the regulatory organs of Bosnia and Herzegovina. Before arriving at the precise value of LCR, it is necessary to determine its harmonized values, which are calculated by multiplying the corresponding balance sheet positions by weights, whose minimum values are set by regulations, and regulatory organs may increase or decrease these minimum values in keeping with their safety estimate and according to the degree of probability of its happening.

Tables 2, 3, 4 and 5 show what happens with LCR when the results of a single bank are observed over two different periods of time. These are accounting values which, "looking backward", represent indicators of value based on previous formation and spending of assets (Brealey, 2009). From Table 1, it is evident that the balance of high-

quality cash of the bank under observation is significantly lower in the second period observed, and that this reduction was particularly due to a decrease of that bank's reserves in the Central Bank. The aforementioned data were deliberately taken from the middle of one and almost from the middle of another business year (30<sup>th</sup> June 2011 and 31<sup>st</sup> August 2012 respectively)<sup>9</sup>, so that there should not be any doubt concerning the validity of the data, because if the data had been taken from the middle of one and the end of another year, they would not have been comparable. Why is that so?

Because each bank pursues different credit and liquidity policies during these periods: the accounts are settled at the end of a year, when most banks tend to get rid of their cash, transforming it mostly into loans and partly into securities, thus increasing their income, so that the final financial report should be as good as possible and the profitability rates (ROE; ROA) realized at the highest level possible. It is also evident that, in our circumstances, there are no Level 2 Assets and that the sum total of highly-liquid assets is actually Level 1 Assets. But regardless of the lower balance of assets from the second year in comparison to the first one, the funds outflow is almost the same in the second year, or merely 2% higher than in the previous year (Table 2). This means that the bank's funds outflow is the more uniform, constant, obligatory and certain portion of its total monetary flow, and that practically the value of the liquidity ratio depends more on the inflow than on the outflow. Why is that so? Because all deposits, except a vista deposits, have their own maturity periods, i.e. deadlines by which they must be repaid, or in stock, or in the clients' accounts on a precisely stipulated date. The very fact that the inflow balance is lower, and that the outflow balance remained virtually the same, shows that the liquidity ratio will also be lower in the second than in the first period. However, it is first necessary to establish another element of determining liquidity according to the Thirds Basel Accord, and that is determining the inflow of the other side.

<sup>9</sup> Data from the analytical records of a medium-sized B&H bank and a report from The Banking Agency of Bosnia and Herzegovina.

Table 2: Determining high-quality liquid assets according to Basel III

<b>A DETERMINING HIGH-QUALITY ASSETS (in 000 KM)</b>								
No.	DESCRIPTION	30.06.2011.			31.07.2012.			Index 12/11
		Weight	BS	Result	Weight	BS	Result	
<b>I LEVEL 1 ASSETS</b>								
1	Cash	100	51.867	51.867	100	42.948	42.948	83
2	Marketable securities	100	160	160	100	1.308	1.308	818
3	Reserves in CB	100	107.206	107.206	100	36.975	36.975	34
4	Claims from the government and CB	100			100			
5	Claims from the government in foreign currency	100			100			
6	Other	100	153	153	100	52	52	34
<b>TOTAL LEVEL 1</b>			<b>159.386</b>	<b>159.386</b>		<b>81.283</b>	<b>81.283</b>	<b>51</b>
<b>II LEVEL 2 ASSETS</b>								
1	Claims from the government and public Co, with p= 20% SA Basel II	85	-	-	85			
2	Corporative bonds AA and >	85	-	-	85			
3	Co covered bonds AA and >	85	-	-	85			
<b>TOTAL LEVEL 2</b>			<b>-</b>	<b>-</b>				
<b>III TOTAL LIQUID ASSETS</b>			<b>159.386</b>	<b>159.386</b>		<b>81.283</b>	<b>81.283</b>	<b>51</b>
IV	40% Liquid assets	40	63.754	63.754	40	32.513	32.513	51

Table 3: Determining fund outflow according to Basel III

<b>B DETERMINING LIABILITY OUTFLOWS (in 000 KM)</b>								
No.	DESCRIPTION	30.06.2011.			31.07.2012.			Index 12/11
		Weight	BS	Result	Weight	BS	Result	
<b>I RETAIL DEPOSITS</b>								
			160.21 <sub>3</sub>	5.277		179.240	6.203	118
1	Deposits up to 30 days		95.288	5.277		112.394	6.203	118
1.1	Secured transactional accounts	5	78.36 <sub>6</sub>	3.918	15	94.224	4.711	120
1.2	Deposits up to 35.000 KM	5	6.671	333	100	6.491	323	97
1.3	other, foreign currency – time deposit	10	3.437	344	0	3.385	339	98
1.4	Unsecured transactional accounts	10	6.814	682	0	8.294	830	122
2	Time deposits > 30 days	0	64.92 <sub>5</sub>	-	0	66.846	-	-
<b>II UNSECURED FUNDS</b>			<b>132.037</b>	<b>117.25<sub>9</sub></b>		<b>154.27<sub>7</sub></b>	<b>119.25<sub>1</sub></b>	<b>102</b>
1	Stable small clients	5	5.000	250	50	4.651	232	93
2	Less stable small clients	10			50			

<b>B</b>		<b>DETERMINING LIABILITY OUTFLOWS</b>					<b>(in 000 KM)</b>		
3	Legal entities with operative relations	25			100				
4	A portion of previously insured	5			100				
5	Corporate banks' deposits	25	4.000	1.000	25	29.370	7.343	734	
6	Deposits by the state, CB, public companies	75	24.410	18.307	75	34.303	25.727	141	
7	Deposits by the state, CB time deposits	75	3.300	2.475	75	16	12	0	
8	Other legal entities	100	91.063	100	100	84.434	84.434	93	
9	Other legal entities – time deposits	100	4.264	4.264	100	1.502	1.503	35	
<b>III SECURED FINANCING</b>									
1	Legally secured deposits	0							
2	Level secured deposits	15							
3	State deposits of the weight 20%	25							
	All other insured deposits	100							
<b>IV ADDITIONAL REQUESTS</b>									
1	Net liquid assets derivatives								
2	Derivatives – market changes								
3	Derivatives – changes - without N1								
4	Securities up to 30 days								
5	Commercial securities								
6	Other contracted outflow								
<b>V</b>	<b>TOTAL OUTFLOW</b>		292.250	122.636		333.518	125.455	102	

Therefore, it is a matter of determining inflow on the basis of repo transactions and other inflow from a partner side (Table 3), which acts as a correction of the already established outflow from the previous table. Actually, it is a matter of

offsetting the outflow against the inflow of the other side, thus arriving at the category of net outflow, which represents a position with which the inflow from the periods observed is compared.

Table 4: Inflow of the other side according to Basel III

<b>C</b>		<b>DETERMINING INFLOW FROM THE OTHER SIDE</b>					<b>(in 000 KM)</b>		
No.	O P I S	Weight	30.06.2011.		31.07.2012.		Index 12/11		
			BS	Result	Weight	BS		Result	
I	Inverse repo transactions								
1	Level 1 Assets	0			0				
2	Level 2 Assets	15			15				
3	All other assets	100			100				
4	Credit /liquidity instruments	0			0				
5	Deposits in other financial institutions	0			0				
6	Deposits in the Central Bank	0			0				

<b>C</b>		<b>DETERMINING INFLOW FROM THE OTHER SIDE</b>				<b>(in 000 KM)</b>		
II	Other partner's inflow	23.739	11.869	70.450	35.225	297		
1	Claims from retail	50	6.875	3.437	50	8.538	4.269	124
2	Claims from others (apart from those already listed)	50	16.865	8.433	50	61.912	30.956	367
3	Claims from other financial institutions	100			100			
4	Net derivative claims	100			100			
III	Total cash inflow	23.739	11.869	70.450	35.225	297		

Table 5: Net outflow according to Basel III

<b>D</b>		<b>DETERMINING NET OUTFLOW</b>				<b>(in 000 KM)</b>		
No.	DESCRIPTION	30.06.2011.			31.07.2012.			Index
		Weight	BS	Result	Weight	BS	Result	
I	Net cash outflow (B-C)			110.767			90.229	81

Table 6: the Liquidity Coverage Ratio according to Basel III – LCR

<b>E</b>		<b>DETERMINING LCR</b>						
No.	DESCRIPTION	30.06.2011.			31.07.2012.			Index
		Weight	BS	Result	Weight	BS	Result	
I	LCR = A / D			144%			90%	62,5

Finally, LCR is determined by relating the highly liquid inflow from Table A to the net outflow from Table D, for the periods observed:

The liquidity coverage ratio (LCR) was significantly higher in the earlier period observed than in the later one (Table 6); more precisely, in the second period (August 31<sup>st</sup>, 2012) it was lower by 37.5% and therefore negative, which means that the bank was illiquid in the second liquidity measurement thirty-day period. This means that it is not or will not be able to settle all its short-term obligations, i.e. that the bank will not be able to fully cover its obligations pertaining either to the

citizens' deposits of up to 30 days, or the unsecured obligations, secured financing, or some additional requirements which constitute obligations on the basis of: derivatives, credit instruments, guarantees and letters of credit.

## 6 ANALYSIS OF SIMILARITIES AND DIFFERENCES IN MEASURING THE LIQUIDITY RATIO

Measuring liquidity up to 30 days according to the regulations passed by the Banking Agency of Bosnia and Herzegovina, we find in our example that the bank is liquid in both periods (Table 7).

Table 7: The liquidity coverage ratio according to the Banking Agency

No.	<b>DETERMINING BANK LIQUIDITY ACCORDING TO BANKING AGENCY</b>	30.06.2011.	30.7.2012.	Index 12/11
		1-30 days	1-30days	
1.	FINANCIAL ASSETS IN BS 000KM			
1.1.	Monetary funds and deposits with other banks	159.219	79.975	50
1.2.	Securities until maturity			
1.3.	Loans given to other banks			
1.4.	Credits, other claims	23.611	64.611	274
1.5.	Trading assets	50		
1.6.	Other financial assets	1.920	5.520	288
	TOTAL:	184.800	150.106	81

DETERMINING BANK LIQUIDITY ACCORDING TO BANKING AGENCY		30.06.2011.	30.7.2012.	Index 12/11
2.	FINANCIAL OBLIGATIONS IN BS	1-30 days	1-30days	
2.1.	Deposits and still undue unsettled obligations	167.819	145.702	87
2.2.	Loans taken from other banks			
2.3.	Obligations toward the government			
2.4.	Obligations pertaining to taken credits and other loans	275	534	51
2.5.	Subordinated debts and bonds			
2.6.	Other financial obligations	4.922	5.576	113
	TOTAL:	173.016	151.812	88
3.	DIFFERENCE	1-30 days	1-30days	
a)	AMOUNT = BIGGER FINANCIAL ASSETS = (1 – 2)	11.784		
b)	AMOUNT=BIGGER FINANCIAL OBLIGATIONS = (2–1)		1.706	
	OBLIGATION SETTLEMENT	1-30 days	1-30days	
I	Achieved % = (1) TOTAL / (2) TOTAL x 100	106,81	98.88	
II	Prescribed minimum %	85	85	100
III	More than the prescribed minimum (I-II) in %	22	14	63.62
IV	Less than the prescribed minimum (II-I) in %	-	-	

Table 8: Similarities and differences between the models for establishing liquidity

CRITERIA	AGENCY	BASEL III
Assets coverage	lower	higher
Assets weight-risk	lower	higher
Liability coverage	lower	higher
Liability weight-risk	lower and higher	lower and higher
Out-balance coverage	-	higher

By up to 22% in the first and 14% in the other period observed, the bank had more short-term assets than short-term liabilities, meaning that it was highly liquid, and therefore far from illiquidity. According to the criteria provided by the Banking Agency, the liquid level of assets is also lower in the second period observed than in the first one; however, the bank was not illiquid but liquid in both cases. It is obvious that there are differences in the way of determining the degree of liquidity between the models currently used by the Banking Agency and the ones suggested by the Third Basel Accord. However, the question for the beneficiaries of these models is which model is more correct, or to be more precise, which one is more useful with regard to protection against illiquidity?

In order to answer the previous question, we will conduct a short analysis of both models with the help of Table 8.

As is clearly visible, when one analyzes all the previous tables, one can conclude that the model of the Third Basel Accord is wider and more encompassing because, unlike the one used by the Banking Agency, it:

- deals with more positions in assets and with higher weight-risks (100), meaning that the numerator in the formula is always higher (it also covers various claims), and with greater chances of achieving a higher liquidity ratio,
- also includes more positions in liabilities with lower and higher weight-risks, but in the positions which are significant for the final outcome of the liquidity ratio (transactional deposits); weight-risks are maximum (100), so

that the chances for achieving a lower liquidity ratio are higher,

- includes also the out-balance positions, especially those of issued guarantees and opened letters of credit which can easily be transformed into obligations, and then into outflow of financial funds for the bank,
- the ratio of the liquid assets and the total projected net cash outflow within the period of 30 calendar days must be higher than 100%, and
- if the bank is liquid according to the old system of liquidity settlement, according to the Third Basel Accord it is illiquid.

Thus, the answer to the previous question, that of which model is more suitable and useful for banks, is that it is the model of the Third Basel Accord, because it includes a lot more details in the sense of forming both the current assets and the current liabilities, which is to say, it includes a lot more positions of the actual balance sheet, as well as all the significant positions of the out-balance records, which can be easily transformed into bank obligations (protests of issued guarantees, etc.). It is probable that some of the banks in Bosnia and Herzegovina will not be able to meet the new requirement for the necessary liquidity level, and that those banks which will not be able to fulfill the aforementioned conditions will have to seek other solutions in order to be able to both formally and essentially meet the requirements for the necessary liquidity level. Actually, what a majority of banks have to do is to increase their capital, which will create conditions for increasing deposits, which, in turn, will enable them to achieve a satisfactory liquidity coverage ratio. Why is that so? "Because capital is the measuring standard for each further total growth of a bank's property and all future positive results with regard to income, gain and overall welfare. In fact, the adequacy rate of capital is that standard, or the indicator telling banks what to do and at what particular moment they need to do it. Major and large banks in Bosnia and Herzegovina today need capital because their adequacy capital rates

are low (close to 12%), and if the economic crisis, which is evident, especially in these areas, continues, the classification of banks' assets will keep worsening, as will the financial results, which is to say, there will be losses which many banks will not be able to cover with the results of the current year. The losses will be offset at the expense of a bank's capital, which will, as a result, reduce and diminish its participation in the risk assets to the level which will not satisfy the standards set by the regulations provided by the regulatory organs. The total assets of the banks in Bosnia and Herzegovina have been at the same stagnant level over the last few years. By Balkan standards, it is low; by European standards, it is even more so. Therefore, the banking system's assets have to be increased in every way possible" (Šalić, 2012, pp. 50-62).

## 7 CONCLUSION

In attempting to absorb the shock waves produced by financial and economic stresses, the new banking standards require a greater amount of and higher-quality capital, as well as better and higher-quality liquidity risk coverage. The new standards in capital and liquidity measurement are much more detailed than the existing ones, because they deal with more balance and out-balance positions of banks, despite being primarily intended for major banks. The banking system of Bosnia and Herzegovina does not have major banks, and is lags behind when it comes to the implementation of these standards, but that does not mean that it should not implement them. However, first the standards of the Second Basel Accord need to be adopted and implemented, because the new standards stem directly from those. Our research has shown that the majority of banks in Bosnia and Herzegovina will be able to fit into the new framework, but also that small banks, as well as those with a low capital level, will not be able to fulfill any of the given requirements for those standards unless they improve, which is to say, unless they improve their operating level in every way possible.

## WORKS CITED

Agencija za bankarstvo Republike Srpske. (2009). *Strategija za uvođenje "Međunarodnog sporazuma o mjerenju kapitala i standardima kapitala" Bazel II*. Banja Luka: Agencija za bankarstvo Republike Srpske. (in Serbian).

- Allen, B. Chan. K. K. Miline. A & Thomas. S. (2012). Basel III: Is the cure worse than the disease. *International Review of Financial Analysis*(25), 159-166.
- Basel Committee for Banking Supervision. (2008). *Principles for Sound Liquidity Risk, Management and Supervision*. Basel: Bank for International Settlements.
- Basel Committee for banking Supervision. (2010). *Basel III: International framework for liquidity risk measurement, standrads and monitoring* . Basel: Bank for International Settlement.
- Basel, C. (2010). Basel III Agreement. Basel: Basel Committee.
- Bazelski odbor za nadzor banaka. (2004). *Međunarodni sporazum o mjerenju kapitala i standardima kapitala* (Revidirani okvir ed.). Zagreb: Potecon. (in Croatian).
- Berk, J. & der Marzo. P. (2011). *Corporate finance* (2nd ed.). Boston: PEARSON.
- Brealey, R. A. Myers. S. C. & Marcus. A. J. (2009). *Osnovi korporativnih finansija* (5th ed.). Zagreb: MATE. (in Croatian).
- Damodaran, A. (2007). *Korporativne finansije - teorija i praksa* (2nd ed.). Podgorica: MODUS - Centar za statistička istraživanja i prognoze. (in Serbian).
- Đukić, Đ. (2007). *Upravljanje rizicima i kapitalom u bankama*. Beograd: Beogradska berza. (in Serbian).
- Gual, J. (2011, december). Capital requirements under Basel III and their impact on the banking industry. *"la Caixa" economic papers*, 7, 7-10.
- Hoeing, T. (2013). Basel III Capital: A Well-Intended Illusion . *The Wall Street Journal*, 1.
- Mankiw, G. (2005). *Principi ekonomije*. Beograd: Centar za izdavačku delatnost Ekonomskog fakulteta. (in Serbian).
- Matz, L. (2001). *Liquidity Risk mamgement*. Austin: Thomson Financial.
- Miles, D. Yang. J. & Marcheggiano. G. (2012). Optimal Bank Capital. *The Economic Journal c 2012 Royal Economic Society*, 37. (in Serbian).
- Mishkin, F. S. (2010). *Ekonomija novca, bankarstva i finansijskih tržišta* (8th ed.). Zagreb: MATE. (in Croatian).
- Peterson, P. (1994). *Financial Management and Analysis*. New York: Mc Graw-Hill.
- Rose, P. S. (2003). *Menadžment komercijalnih banaka* (4th ed.). Zagreb: MATE Zagreb. (in Croatian).
- Slovik, P., & Cournede, B. (2011). *Macroeconomic Impact of Basel III*. Pariz: OECD Economics Department, Working Papers No. 844.
- Šalić, R. (2012). Implementation of Basel II standrads in commercial banks in BiH. *Singidunum Journal of Applied Sciences*, IX(2), 50-62.
- Šalić, R. (2012). *Monetrana ekonomija i bankarstvo* (2nd ed.). Čačak: Visoka poslovna škola strukovnih studija iz Čačka. (in Serbian).
- Šalić, R. (2013). *Osnove korporativnih finansija*. (D. partner, Ed.) Beograd: Šalić Radomir. (in Serbian).
- Tintor, J. (2009). *Poslovna analiza*. Zagreb: MASMEDIA.
- Turner, S. H. & Sjastad. J. (2002). *Too many banks aren't ready for looming liquidity crisis*. New York: American Banker.
- Van Greuning, H. & Bratanović-Brajović. (2006). *Analiza i upravljanje bankovnim rizicima* (2nd ed.). Zagreb: MATE. (in Croatian).

Received for publication: 25.11.2013  
Revision received: 19.06.2014  
Accepted for publication: 06.07.2014

#### **How to cite this article?**

##### *Style – APA Sixth Edition*

Šalić, R. (2014, 07 15). Certain aspects of the capital and liquidity of banks in Bosnia and Herzegovina. (Z. Čekerevac, Ed.) *MEST Journal*, 2(2), 224-240. doi:10.12709/mest.02.02.02.23

##### *Style – Chicago Fifteenth Edition:*

Šalić, Radomir. 2014. "Certain aspects of the capital and liquidity of banks in Bosnia and Herzegovina." Edited by Zoran Čekerevac. *MEST Journal* (MESTE) 2 (2): 224-240. doi:10.12709/mest.02.02.02.23.

##### *Style – GOST Name Sort:*

**Šalić Radomir** Certain aspects of the capital and liquidity of banks in Bosnia and Herzegovina [Journal] // *MEST Journal* / ed. Čekerevac Zoran. - Belgrade : MESTE, 07 15, 2014. - 2 : Vol. 2. - pp. 224-240.

##### *Style – Harvard Anglia:*

Šalić, R., 2014. Certain aspects of the capital and liquidity of banks in Bosnia and Herzegovina. *MEST Journal*, 15 07, 2(2), pp. 224-240.

##### *Style – ISO 690 Numerical Reference:*

*Certain aspects of the capital and liquidity of banks in Bosnia and Herzegovina.* **Šalić, Radomir.** [ed.] Zoran Čekerevac. 2, Belgrade : MESTE, 07 15, 2014, *MEST Journal*, Vol. 2, pp. 224-240.