THE DECISION OF MANAGING BANKS' LIQUIDITY RISK IN MACEDONIA

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Abstract

The main purpose of this paper is to analyze Macedonian law-framework for providing liquidity of a bank. At the end of the year 2003, the National Bank of the Republic of Macedonia (NBRM) has adopt adequate regulation in order to provide the basic direction and measures for managing the liquidity of a bank. In the past years, and also today, the National Bank of the Republic of Macedonia (NBRM) has adopt a lot of Resolutions that are important for successfully managing liquidity in Macedonian banks.

These paper consists of 4 parts, that are:
1. What is liquidity risk? ;
2. Managing the liquidity risk;
3. Decision on managing banks' liquidity risk; and
4. Conclusion.

In the first part: "What is liquidity risk?" we define the term "liquidity risk" according to the Banking Law of the Republic of Macedonia and Decision on the risk management - that is established by the National Bank of the Republic of Macedonia (NBRM). We also explain the reasons that arises the liquidity risk.

In the second part: "Managing the liquidity risk" we explain the Methodology for liquidity risk management established by the National Bank Council, in accordance with the international standards for the purposes of proper risk management.

In the third part: "Decision on managing banks' liquidity risk", we analyze this Decision that is adopted by the National Bank of the Republic of Macedonia (NBRM) in order to provide successful management of this kind of material risk in our banks. This Decision suffered many changes until now according to the economic situation and factors that made some changes in the economy, and these changes are also include in these paper.

In the fourth part: "Conclusion", we are giving our basic conclusions that arise from our paper.

Banks are challenged to maintain liquidity in the global financial system in Macedonia in the maintenance of fiscal and monetary macro balance. After analyzing the decisions that brought the National Bank of

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the Republic of Macedonia (NBRM), we can conclude that in Macedonia there is adequate and solid framework for maintaining the liquidity of banks. Banks in the forthcoming period, in order to preserve the future stability and ensure further continuous service, will need to devote more attention to liquidity management and to make additional efforts to increase liquidity potential.

These paper also gives the exciting possibilities in the banks in the Republic of Macedonia for managing liquidity and analyze the future steps of development of liquidity management. Although the environment for the implementation of monetary policy in 2011 in Macedonia is stable, it is still accompanied by uncertainty, which emphasizes the necessity of continuous assess the risks around the implementation of monetary targets.

1. What is liquidity risk?

"*Liquidity risk is the risk that occurs when the bank cannot provide enough funds for settlement of its short-term liabilities at their maturity, or it provides the necessary funds at very higher costs*"[2].

Liquidity risk represents the sequence of the appearance of the negative effects of the financial results and capital of a bank, in a situation where it is not able to meet its due obligations. The bank shall permanently manage the risks, adequately to the nature, the type and the scope of the financial activities it performs. The bank shall specify the criteria, the manner, and the methods of risk management, as well as the capital adequacy assessment, in accordance with its risk level, by the general acts and the internal procedures. The general acts and the internal procedures are in compliance with the regulations, the standards, and the rules in the banking area and the methodology prescribed by the National Bank Council[3]. Liquidity risk is one of the material risks that the bank is exposed to in the performance of individual and of all types of financial activities[4].

The Banks in the Republic of Macedonia are managing their property and liabilities in a way that it allows at any time to fulfill its due obligations (liquidity) and continuing to meet all its obligations (solvency). As it is defined by the regulators, liquidity risk consists of: the risk of financing or "funding liquidity risk", which represents an inability to liquidate assets or to ensure adequate financing, and market risk or "market liquidity risk" that represents an inability to overcome in

[2] According to: *Decision on the risk management* ("Official Gazette of the RM" No. 42/2011), March 31, 2011.
[3] See: *Banking Law* (Official Gazzete of RM No.67/07, 90/09 and 67/10), Article 66.
[4] The other material risks beside the liquidity risk are: credit risk, including country risk and counterparty risk, interest rate risk, currency risk and other market risks, risk of concentration of bank's exposure, operational risk, including the information systems inadequacy risk, and risk arising from capital investments and investments in real estate. According to the *Banking Law* (Official Gazzete of RM No.67/07, 90/09 and 67/10), Article 66.

some risks without significantly reducing the market price because of inadequate market depth and the market distortion.

Liquidity risk arises for two reasons:

- *The reasons arising from the foreign liabilities* - occur every time when depositors withdrawing their deposits, which is why there is a need for banks to borrow additional funds or sell assets. (Control over liabilities in order or reducing these reasons consists in the fact that the bank is directed to buy assets in a money market, such as the market for treasury state and bond market repurchase agreements, which represent the interbank market for short-term borrowings. Alternatively, the bank could issue additional certificates of deposit with fixed maturities, or to sell some bonds and treasury bills).

- *The reasons arising from the assets* - occurs as a result of lending operations. Line of credit allows states to withdraw funds in a specific time period, so the obligations of the bank is to financed at the same time drain on the balance sheet that it creates a demand of liquidity.

2. Managing the liquidity risk

For the purposes of proper risk management, the National Bank Council, in accordance with the international standards, prescribes the Methodology for liquidity risk management[5]. The bank is obliged to maintain the liquidity, i.e. to manage the assets and the liabilities in a manner that will ensure settlement of due liabilities at all times[6]. Due to the maintenance of liquidity, the bank is obliged to manage the liquidity risk in particular that should include[7] :

1. establishment and maintenance of an adequate maturity structure,
2. planning and management of inflows and outflows of funds and providing of an adequate amount of liquid assets,
3. tracing the sources of funds and their concentration, and
4. liquidity testing.

Managing liquidity risk represents: the identification, measurement, evaluation and control of risk that can cause hazardous of liquidity. Due to the efficient management of liquidity risk, the competent authority of the Bank brings and implement policies to control liquidity, which includes planning inflow and outflow of money-term funding, liquidity and taking appropriate measures to prevent the reasons for insolvency.

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[5] According to: *Banking Law* (Official Gazzete of RM No.67/07, 90/09 and 67/10), Article 68.

[6] According to: *Banking Law* (Official Gazzete of RM No.67/07, 90/09 and 67/10, Article 79.

[7] According to: *Banking Law* (Official Gazzete of RM No.67/07, 90/09 and 67/10), Article 80.

The Bank is obliged to plan and monitor the inflows and outflows of money-term funds. As the expected cash flows of personal assets include the proceeds arising from all types of deposits, loan charges, sale of securities, use of interbank lending, which flows in from the off-balance sheet position, inflows from financial derivatives, and all other proceeds with a high degree of accuracy. As the expected cash outflows-term assets include payments arising from the approved loan, bought stock value, giving the interbank borrowings, paid-making deposit outflows that arise from off-balance sheet position, outflow of financial derivatives, and all other payments which are expected to appear in residence period. For monitoring a maturity exposure, the bank deployed inflows and outflows by some active and passive positions in the corresponding time periods, as follows: up to 7 days, from 7 days to 1 month, from 1 to 3 months, from 3 to 6 months, and from 6 to 12 months. The term structure includes: the inflows and outflows of bank flow from off-balance sheet position and financial derivatives[8].
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According to existing regulations, the National Bank of the Republic of Macedonia provides directions and guidelines for managing the liquidity of banks. In larger banks an informal body is set (it is called Committee for liquidity[9]), responsible for operational management and weekly monitoring of liquidity, which is based on weekly projections for the state's bank account and the projected payments and payments from the account. These Committee for liquidity also defines global activities undertaken during the week, as guidance to vote.

In internal prescribed “Decision on liquidity management”, larger banks determine the percentages of investments in individual assets (treasury bills, government securities, foreign and domestic securities) relative to total assets, as well as the limits of resources (deposits per individual depositor, the amount of deposits from other banks, the total amount of securities issued securities) in respect of the guarantee capital. For maintenance of foreign exchange liquidity, banks set daily limits on the amount of foreign assets in terms of off-balance sheet foreign currency liabilities and structure prescribed percentage of the amount of currency held by the bank in respect of the guarantee capital of the bank.

They define the elements of moderate insolvency, substantial illiquidity and extreme illiquidity, by defining the percentages of depreciation of the relevant parameters (deposits) and determine the specific activities in each of these situations. They also define the specific instruments that banks will tend to hold in its portfolio and the way that they used to maintain its liquidity. They determined and

[8] According to the: *Decision on managing banks’ liquidity risk* ("Official Gazette of the RM" No. 163/2008), 25 December 2008, p 5.
[9] The Committee for liquidity which by function includes: Managing Directors, Manager of the Department of Treasury and Financial Markets Division and Manager of risk management. Responsible for maintaining the liquidity of the bank are: The Board of Directors and Authority for managing risk (which is formed of 3 members selected from among the members of the Board), while the Department of Treasury and financial markets manage the operational liquidity.

calculated specific information that follows the bank's liquidity (through historical monitoring of movement of the odds), usually the following:

- liquid assets / total assets,
- liquid assets / unstable deposits;
- net loans / stable deposits, and
- net loans / total deposits.

They set daily limits on loans and deposits with banks at home and abroad since maturity dates and according of ranging of the banks (under the list of National Bank of the Republic of Macedonia) and authorized levels of hierarchical decision making in the bank. They are obliged to establish quarterly limits on exposure to individual banks in the amount and types of individual transactions. Also they define and daily limits on borrowing from other banks in the country and central bank. They ask and limits on transactions in securities for the financial instruments that are usually established, and a separate policy for investment in securities.

The banks are managing the foreign exchange risk usually regulated by a special internal decision to regulate and control the concentration of foreign exchange risk with specific limits on transactions, daily, by currency and level of decision making. Banks besides monitoring and controlling the concentration of the deposit base and general portfolio of the bank, follow the link and the correlation between inflows and outflows in the bank account through the coefficient of linear correlation, and the percentage of variation of the deposit base in order to determine the behavior of the stable and unstable deposits.

3. Decision on managing banks' liquidity risk

National Bank of the Republic of Macedonia on 25 December 2008 adopted the **"**Decision on managing banks' liquidity risk" in order to provide successful management of this kind of material risk in our banks. This Decision suffered many changes until now according to the economic situation and factors that made some changes in the economy.

In the beginning of this Decision, there is a definition of liquidity risk and liquidity risk management[10]. The analyzing components in the Decision are[11]:

1) Organizational structure for liquidity risk management;
2) Steps and procedures for internal control and audit;
3) Information system;
4) Stress-testing and

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[10] - Liquidity risk, in light of this Decision, shall be the risk of the bank failing to provide sufficient funds for settlement of its short-term liabilities at the moment those liabilities fall due, or to provide the funds needed at much higher costs.
- Liquidity risk management, in light of this Decision, shall denote management of assets and liabilities in a manner that shall ensure timely and regular settlement of the liabilities, in the normal or extraordinary course of bank's operations.

[11] According to: *Decision on managing banks' liquidity risk* ("Official Gazette of the RM" No. 163/2008), 25 December 2008, p.1.

5) Plan for liquidity risk management in extraordinary conditions.

1) *Organizational structure for liquidity risk management* means clearly defined competencies and responsibilities of the bank's bodies, as well as definition of the tasks and responsibilities of the respective organizational parts in the bank authorized for monitoring the bank's liquidity and managing the liquidity risk[12]. These Banks bodies are: the Supervisory Board, the Risk Management Board, and Special body authorized for liquidity risk management.

The Supervisory Board of the bank can approve a liquidity risk management policy and monitor its implementation, including approval and monitoring of the Plan for liquidity risk management in extraordinary conditions; approve the liquidity risk exposure limits; monitor the efficiency of the internal control, and review the appropriateness of the adopted policy and the reports on liquidity risk.

Responsibilities of the Risk Management Board are[13]:

- establishing and monitoring the liquidity risk management policy and giving proposals for its revision;
- assessing the liquidity risk management system;
- analyzing the reports on the bank's exposure to liquidity risk and monitoring the activities undertaken towards the management of this risk;
- determining and regularly revising the internal liquidity indicators and liquidity risk exposure limits;
- defining possible exceptions with respect to the defined limits and assigning responsibility for deciding on the application of such exceptions;
- establishing of the procedures and the manner of performing stress-testing;
- other activities that the Board is obliged to perform according to the Banking Law and the liquidity risk management policy.

The third body authorized for liquidity risk and responsible for operational implementation of the liquidity risk management policy, by daily monitoring and control of the liquidity risk is the Managing Board and/or the bank's Special Body. The activities of these body are[14]:

- ➢ establish and implement adequate liquidity risk management procedures;
- ➢ establish and maintain the efficiency of the system for measuring, monitoring, controlling of and reporting on the liquidity by individual currencies which significantly influence bank's overall liquidity and monitor the maturity structure of the assets and liabilities in Denars and in foreign currency;

[12] According to: *Decision on managing banks' liquidity risk* ("Official Gazette of the RM" No. 163/2008), 25 December 2008, p.2.
[13] See: *Decision on managing banks' liquidity risk* ("Official Gazette of the RM" No. 163/2008), 25 December 2008, p.2.
[14] See: *Decision on managing banks' liquidity risk* ("Official Gazette of the RM" No. 163/2008), 25 December 2008, p.3.

- provide conditions for monitoring the liquidity risk management policy;
- establish an adequate system of reporting to the Supervisory Board and Risk Management Board related to the possible exceeding of the prescribed limits on the exposure to liquidity risk;
- define the financial instruments for liquidity risk management;
- establish procedures for determining and monitoring the stability of deposits;
- establish a procedure for assessment of the influence of the new products on the exposure to liquidity risk;
- monitor the potential liabilities and the exposure on the basis of the bank's off-balance sheet operations.

2) *Steps and procedures for internal control and audit*

Internal control of liquidity risk management is an integral part of the overall internal control system, established at the level of the bank. It includes the obligation of the bank to establish limits on the approval of the cash flows over a certain amount and monitoring of the compliance with the prescribed limits; to report for the possible exceeding of the limits; and to check the data and information used when determining bank's liquidity.

3) *Information system*

According to the Decision on managing liquidity risk the bank shall establish an information system which will ensure timely and constant measurement, monitoring, control and reporting in the decision-making process when managing the liquidity risk. The National Bank of the Republic of Macedonia (NBRM) establishes Instructions on amending the Instructions on enforcing the Decision on managing banks' liquidity risk[15] that a bank must provide.

4) *Stress-testing*

Stress-testing is a risk management technique used for assessing the potential influence of one or more internal or external risk factors on the financial standing and/or liquidity of the bank. The stress scenarios are taken by the bank at least once a year, in order to determine their influence on the bank's liquidity, to prepare the bank for operations in extraordinary conditions, to assess the possibilities for bank's growth, or to determine the best source of financing the new activities/products. The scenarios specific for the bank should include at least the following: the significant decline in the deposit base, the reduced creditworthiness of the bank, deterioration of its credit portfolio quality, the significant settlement of the bank's potential liabilities, when the influence of all positions where there is an option for early withdrawal or repayment, is also taken into consideration[16].

[15] According to: *Instructions on amending the Instructions on enforcing the Decision on managing banks' liquidity risk* ("Official Gazette of the RM" No. 25/2011).
[16] According to: *Decision on managing banks' liquidity risk* ("Official Gazette of the RM" No. 163/2008), 25 December 2008, p.4.

5) *Plan for liquidity risk management in extraordinary conditions*

The main explication for this plan is that it defines: tasks, competences, responsibilities and decision-making for the occurrence of extraordinary conditions, early warning indicators used as signs for the occurrence of extraordinary conditions, as well as designation of the persons within the bank responsible for monitoring and reporting with respect to such indicators. It also gives a definition of the extraordinary conditions for which the Plan shall be applied and the activities that should be undertaken and identification of the possible sources of funds, as well as definition of the time frame within which the defined activities should be undertaken; The Plan determines the method of communication with the main depositors, business partners, other clients and the public, in extraordinary conditions; and contact data on the persons responsible for implementation of the Plan[17].

The next question that arise here is: *What the bank should do in order to maintain an appropriate level of liquidity*?

- *First of all*, the bank must plan and monitor the inflows and outflows of funds;
- *Second*, it must establish and maintain adequate maturity structure of its assets (claims) and liabilities;
- *Third*, to monitor the sources of funds and their concentration;
- *Fourth*, to maintain the liquidity ratios: Ratio of liquidity of up to 30 days (as a ratio of the assets in Denars and in foreign currency to the liabilities in Denars and in foreign currency falling due in the forthcoming 30 days) and Ratio of liquidity of up to 180 days (as a ratio of the assets in Denars and in foreign currency to the liabilities in Denars and in foreign currency falling due in the forthcoming 180 days) The liquidity ratios shall be equal at least to 1 as minimum level)., and
- Fifth, to determine and monitor the internal liquidity indicators[18].

After providing all these necessary steps mentioned before, the bank prepares reports on a monthly basis, such as:

- ✓ Reports on the maturity structure of assets and liabilities in Denars, in foreign currency and on aggregate level;
- ✓ Report on the largest depositors and the concentration level;
- ✓ Report on the liquidity ratios up to 30 and 180 days;
- ✓ Report on the internal liquidity indicators,

and submit this reports to the National Bank within fifteen days after the expiration of the month the reporting refers to[19].

In case of the Report on the liquidity ratios up to 30 and 180 days the bank shows liquidity ratios (initial liquidity ratios) lower than the minimum level, it shall be required to increase the liquidity ratios,

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[17] According to: *Decision on managing banks' liquidity risk* ("Official Gazette of the RM" No. 163/2008), 25 December 2008, p.5.
[18] According to: *Decision on managing banks' liquidity risk* ("Official Gazette of the RM" No. 163/2008), 25 December 2008, p.5.
[19] According to: *Decision on managing banks' liquidity risk* ("Official Gazette of the RM" No. 163/2008), 25 December 2008, p.10.

until the minimum level is met. The bank is obliged to increase the liquidity ratios on a monthly basis, starting from March 31, 2009, according to the following compliance dynamics, prescribed by the National Bank of the Republic of Macedonia (NBRM) for the period March 31, 2009 to June 30, 2009:
- 1/24 of the difference determined as of February 28, 2009 between the minimum level and the initial amount of the liquidity ratio up to 30 days;
- 1/60 of the difference determined as of February 28, 2009 between the minimum level and the initial amount of the liquidity ratio up to 180 days.

The same monthly compliance dynamics of the liquidity ratios are for the period July 01, 2009 to December 31, 2009[20], and also from the period December 1, 2009[21] to June 30, 2010[22].

The National Bank of the Republic of Macedonia (NBRM) on 31 May 2010 made Announcement[23] in which defines that from the period July 01, 2010 to December 31, 2010, the bank shall be required to adhere to the following monthly compliance dynamics of the liquidity ratios:
- 1/24 of the difference determined as of February 28, 2009 between the minimum level and the initial amount of the liquidity ratio up to 30 days;
- 1/60 of the difference determined as of February 28, 2009 between the minimum level and the initial amount of the liquidity ratio up to 180 days.

The same monthly compliance dynamics of the liquidity ratios mentioned above are also for the period January 01, 2011 to June 30, 2011[24]. So, the banks in the Republic of Macedonia are obliged to adhere the monthly compliance dynamics of the liquidity ratios that are defined by the National Bank of the Republic of Macedonia (NBRM).

4. Conclusion

One of the main risks of banking operations is the possibility of closure of the bank during insolvency. Because of that the bank's liquidity is an important factor for its readiness to respond to due obligations. Given the fact that the bank works with foreign funds, it

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[20] According to: *Decision on amending the decision on managing banks' liquidity risk* ("Official Gazette of the RM" No. 66/2009), 28 May 2009.
[21] These period was published in: *Correction to the Decision on amending the decision on managing banks' liquidity risk* ("Official Gazette of the RM" No. 157/2009), 24 December 2009.
[22] According to: *Decision on amending the decision on managing banks' liquidity risk* ("Official Gazette of the RM" No. 144/2009), 30 November 2009.
[23] See: *Announcement of the monthly compliance dynamics of the liquidity ratios* ("Official Gazette of the RM" No. 73/2010), 31 May 2010.
[24] See: *Announcement of the monthly compliance dynamics of the liquidity ratios* ("Official Gazette of the RM" No. 155/2010), 30 November 2010.

assumes that obligation on time and under conditions agreed in advance to return the assets without delay.

Liquidity is extremely important for the bank because it is held by the trust of depositors and thus avoid the "domino effect", transfer of insolvency among banks, which allows the survival of banks in uncertain conditions. On whether the bank regularly pays its outstanding obligations to customers depends the trust and confidence of customers, and the confidence of the customers is the basis for the relationship between customers and banks.

According to the existing regulations, the National Bank of the Republic of Macedonia (NBRM) provides directions and guidelines for managing the liquidity of banks. In larger banks an informal body is set (it is called Committee for liquidity), responsible for operational management and weekly monitoring of liquidity, which is based on weekly projections for the state's bank account and the projected payments and payments from the account, it defines global activities undertaken during the week, as guidance to vote.

Due to the maintenance of liquidity, the bank is obliged to manage the liquidity risk in particular that should include: establishment and maintenance of an adequate maturity structure, planning and management of inflows and outflows of funds and providing of an adequate amount of liquid assets, tracing the sources of funds and their concentration, and liquidity testing.

National Bank of the Republic of Macedonia (NBRM) on 25 December 2008 adopted the **“**Decision on managing banks’ liquidity risk” in order to provide successful management of this kind of material risk in our banks. The analyzing components in this Decision are: organizational structure for liquidity risk management; steps and procedures for internal control and audit; information system; stress-testing and plan for liquidity risk management in extraordinary conditions.

In order to maintain an appropriate level of liquidity the bank must plan and monitor the inflows and outflows of funds; it must establish and maintain adequate maturity structure of its assets (claims) and liabilities; monitoring the sources of funds and their concentration; maintaining the liquidity ratios, and determining and monitoring the internal liquidity indicators. After providing all these necessary steps mentioned before, the bank prepares Reports on a monthly basis. In case of the Report on the liquidity ratios up to 30 and 180 days the bank shows liquidity ratios (initial liquidity ratios) lower than the minimum level, they’re required to increase the liquidity ratios, until the minimum level is met, according to the following compliance dynamics, prescribed by the National Bank of the Republic of Macedonia (NBRM)

Banks are challenged to maintain liquidity in the global financial system in Macedonia in the maintenance of fiscal and monetary macro balance. After analyzing the different decisions that brought the National

Bank of the Republic of Macedonia, we can conclude that in Macedonia there is adequate and solid framework for maintaining the liquidity of banks. Banks in the forthcoming period, in order to preserve the future stability and ensure further continuous service, will need to devote more attention to liquidity management and to make additional efforts to increase liquidity potential. Although the environment for the implementation of monetary policy in 2011 in Macedonia is stable, it is still accompanied by uncertainty, which emphasizes the necessity of continuous assess the risks around the implementation of monetary targets[25].

[25] See: *Projections of the monetary policy in 2011*, The National Bank of the Republic of Macedonia, Skopje, November 2010.

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1. *Announcement of the monthly compliance dynamics of the liquidity ratios* ("Official Gazette of the RM" No. 73/2010), 31 May 2010.

2. *Announcement of the monthly compliance dynamics of the liquidity ratios* ("Official Gazette of the RM" No. 155/2010), 30 November 2010.

3. *Banking Law* (Official Gazzete of RM No.67/07, 90/09 and 67/10)

4. *Correction to the Decision on amending the decision on managing banks' liquidity risk* ("Official Gazette of the RM" No. 157/2009), 24 December 2009.

5. Decision on the risk management ("Official Gazette of the RM" No. 42/2011), March 31, 2011.

6. *Decision on managing banks' liquidity risk* ("Official Gazette of the RM" No. 163/2008), 25 December 2008.

7. *Decision on amending the decision on managing banks' liquidity risk* ("Official Gazette of the RM" No. 66/2009), 28 May 2009.

8. *Decision on amending the decision on managing banks' liquidity risk* ("Official Gazette of the RM" No. 144/2009), 30 November 2009.

9. *Decision on amending the decision on managing banks' liquidity risk* ("Official Gazette of the RM" No. 14/2011), 3 February 2011.

10. *Instructions on amending the Instructions on enforcing the Decision on managing banks' liquidity risk* ("Official Gazette of the RM" No. 25/2011)

11. *Instructions on amending the Instructions on enforcing the Decision on managing banks' liquidity risk* ("Official Gazette of the Republic of Macedonia" no. 16/2010)

12. *Law on the National Bank of the Republic of Macedonia* (Official Gazzete of RM No.158/10), 09.12.2010.

13. *Projection of the monetary policy in 2011*, The National Bank of the Republic of Macedonia, Skopje, November 2010

14. Web site of the National Bank of the Republic of Macedonia www.nbrm.mk