# LIQUIDITY IN THE ALBANIAN BANKING SYSTEM

TERM PROJECT

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TIRANA, ALBANIA
September 2018

# LIQUIDITY IN THE ALBANIAN BANKING SYSTEM

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Thesis Submitted in Fulfillment of Requirement for the Professional Master Degree in

Banking and Finance

EPOKA UNIVERSITY

2018

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| **Date of Defense:** | June 2018 |

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# LIQUIDITY IN THE ALBANIAN BANKING SYSTEM

## ABSTRACT

Liquidity is a factor key and decisive in the performance of banks and the success of the economy in general. Along the recent recent financial crisis, the contraction in lending due to banks' failure to effectively manage liquidity risk has increased the importance of monitoring and regulating Bank of Albania's bank's liquidity through the implementation of the Basel rules. Proper understanding of macroeconomic factors is essential in achieving the right balance to absorb the chances and threats that come from a complex economic environment. The study studies the effects of macroeconomic conditions on the Albanian liquidity bank's liquidity level for six second level banks for a period of ten years from 2006 to 2015. Studies show that macroeconomic factors such as GDP growth, inflation, unemployment rate, government budget deficit, tax rates, and problem loans have a direct impact on bank liquidity. The factors affecting liquidity are related to external macroeconomic factors and internal factors related to banks specifically including an analysis of their direct impact on banks liquidity ratios. The methodology used in the study is quantitative by analyzing the factors, it is intended to detect and measure their impact on the liquidity of the banking system.The study expands existing liquidity literature by determining the role of macroeconomic variables, besides the traditional specific firm variables, as important determinants of bank liquidity.

**Key words:***banking liquidity, macroeconomic factors, banking factors*

# LIKUIDITETI NË SISTEMIN BANKAR SHQIPTAR

## ABSTRAKT

Likuiditeti  është një factor kyç dhe vendimtar në ecurinë e bankave dhe në suksesin e ekonomisë në përgjithësi.Përgjatë krizës së fundit financiare, tkurrja e kreditimit për shkak të dështimit të bankave për të menaxhuar në mënyrë efektive rrezikun e likuiditetit ka rritur rëndësinë e monitorimit dhe rregullimit të likuiditetit të bankës së Shqipërisë nëpërmjet zbatimit të rregullave të Bazelit. Kuptimi I duhur I faktorëve makroekonomikë është thelbësor në arritjen e ekuilibrit të duhur për të absorbuar shanset dhe kërcënimet që vijnë nga një mjedis ekonomik kompleks. Studimi analizon efektet e kushteve makroekonomike në nivelin e likuiditetit të bankës shqiptare të likuiditetit për gjashtë banka gjatë një periudhe prej dhjetë vjetësh nga viti 2006 deri në vitin 2015. Studimet tregojnë se faktorët makroekonomikë siç janë rritja e PBB-së, inflacioni, norma e papunësisë, deficiti buxhetit të qeverisë, normat e taksave, huatë problematike kanë një ndikim të drejtpërdrejtë në likuiditetin e bankave. Faktorët që ndikojnë në likuiditetin janë të lidhura me faktorët e jashtëm makroekonomikë dhefaktorët e brendshëm që lidhen me bankat, veçanërisht duke përfshirë një analyze të ndikimit të tyre në raportet e likuiditetit. Metodologjia e  përdorur në studim është sasiore duke analizuar faktorët, ka për qëllim të zbulojë dhe të masë ndikimin e tyre në likuiditetin e sistemit bankar. Studimi zgjeron literature ekzistuese të likuiditetit duke përcaktuar rolin e variablave makroekonomikë, përveç variablave të firmave specifike tradicionale, si përpaktues të rëndësishëm të likuiditetit të bankës

**Fjalekyce:***likuiditeti bankar, faktorët makroekonomik, faktorët bankar*

# ACKNOWLEDGEMENTS

Firstly, I want to thank God, who has helped me through with wisdom and peace. I would like to dedicate this thesis to my family, my mother, my father and my brother, who have supported and encouraged me with unconditional amount of love and appreciation throughout the whole writing process. Without their trust and compassion, I wouldn't be what I am today. I am thankful to my closest friends who have always been by my side.

Also, I would like to express my appreciation to my supervisor Dr. Nertil Mera who has helped me finish this thesis successfully. His guidance and knowledge helped me in all the time of research and writing of this thesis.

I would also like to express my appreciation to my thesis committee for their comments and valuations. It was such a nice journey that is ending by the submission of this master thesis.

# DECLARATION

I hereby declare that this Master's Thesis, titled: factors affecting liquidity of the Albanian banking system, is based on my original work except quotations and citations which have been duly acknowledged. I also declare that this thesis has not been previously or concurrently submitted for the award of any degree, at Epoka University, any other university or institution.

Françeska SINANI

Date: 20. 09. 2018

# TABLE OF CONTENTS

# LIST OF TABLES

# LIST OF GRAPHS

# LIST OF ABBREVATIONS

| | |
|---|---|
| **GDP:** | Gross domestic product |
| **UNM:** | Unemployment |
| **INF:** | Inflation |
| **SPREAD:** | SPREAD |
| **CAR:** | Capital adequacy ratio |
| **DEP:** | Deposit |

# CHAPTER 1
# INTRODUCTION

## 1.1 Introduction

Financial developments in the last years have influenced the stability of the banking system, fueling discussions on financial rules and policies. This interest has been shown to be of great interest due to the importance of the banking system to the sustainability of a country's economy. Therefore, their good management will help preserve the intended level of sustainability.

In a country's economy, financial intermediaries make up a bridge between those who own excess funds and want to deposit and those who want to use these funds. The combination of these two activities, namely the provision of loans based on the receipt of deposits by some agents for some other agents, is the main function of the banking system: the creation of liquidity. In this way, the study of liquidity creation is an important field of study.

According to Donald Howard, the former CEO of Citicorp in 1977, he explained that in terms of the priority that the components of the CAMEL rating system should have, we need to make a return to LEMAC by putting liquidity in the first place, most importantly. Because the crisis caused banks and other financial institutions to lose confidence in the financial system, they did not give credit to each other causing a lack of liquidity. International financial institutions and central banks have signed a rescue plan to restore the economy to stabilization with the cost of increasing the government's budget deficit.

After the 2008 financial crisis, it turns out that Albanian banks have not fully accept the liquidity risk management and the importance of the risk taken for the bank itself, as well as the financial system. At the macro level, a wealthy banking sector is

more able to survive through the negative impacts and also to improve the stability of the financial system. Policy makers have suggested that banks need to hold liquid assets in order to be more secure against potential lack of liquidity or many financial difficulties. Bank profits are the most important source of capital, especially if reinvested in business. Of course, the need of financial institutions in general and of banks for liquidity is not something new.

Due to the global economy slowdown, the banking sector has been affected by deflation, interest rate cut, worsened government budget deficit, increased risk of credit, and other economic hardships. . The study aims to analyze how macroeconomic and banking factors have affected the banking liquidity in Albania before and after the financial crisis. Towards these changes in the current global economy, banks need to make the necessary arrangements to help their financial system from liquidity risk.

Normally the banking system should be under constant supervision to watch over the interests of the general public and depositors. The Albanian Bank of Albania, the Supervisory Department is the sole authority in Albania, which oversees the liquidity risk and how it is managed by the banks operating in our country. The first guideline for bank liquidity is Guideline No. 4, dated 19.01.2000, instruction, subsequently amended with instruction no.8 dated 12.02.2003. On December 14, 2009, the Bank of Albania has implemented the Regulation No.71, "On liquidity risk management". The purpose of this regulation is to determine the minimum requirements and standards for the effective management of liquidity risk by the entities of this regulation. Every day, banks report to the Bank of Albania on cash inflows and outflows, as well as monthly reports on some liquidity indicators. The most usable reports in Albania are: total deposit / total ratio, total credit / total ratio, loan / deposit ratio. Bank of Albania if it notes problems with a particular bank may require more frequent reporting and take measures to settle the situation. Liquidity risk management in Albania is made by established structures of each bank, which are ALCO's asset management committees. Banks are responsible for setting up a reporting system that enables them to accurately know the state of daily and monthly liquidity.The new Guideline of the Bank of Albania has considered it very important to manage liquidity risk, create a clear riskmanagement strategy, conduct stress tests, create contingency plans for reactions in certain situations. Stress tests should be done no less than 4 times a year, and the Bank of Albania, if it deems it necessary, may require these tests to be conducted more often.

## 1.1. Description of the problem and research questions

The questions raised will be evaluated by analyzing the data obtained from secondary sources such as: annual reports published by the Bank of Albania, the International Monetary Fund, the INSTAT and the annual reports published by respective banks in the country during the period 2006-2015. These data will serve as inputs for the construction of the multiple linear regression models and then the hypotheses raised through statistical procedures will be tested. In relation to the independent variables in our model, we will classify them in two groups: macroeconomic factors and specific factors - relate to the banks studied.

As macroeconomic factors after a research analysis in this field, indicators of interest to the context in which our country is located are also selected. These factors are: real GDP growth, inflation rate, unemployment rate, brokerage rate and REPO rates. In the Banking Group, we will use the following banking indicators: bank size, capitalization (CAR), return on assets (ROA) and deposits on total assets.

Meanwhile, the data identified may raise some study restrictions that will be discussed in the last chapter. Taking into account the limitations may impact on answering some questions.

## 1.2 Research questions of the study will be:

- Reflect macroeconomic indicators such as inflation level, level of real GDP growth, unemployment rate, loan and deposit interest rate differentials, REPO rate liquidity and stable banking system rate?
- What impact did the global financial crisis have on the level of liquidity performance in the banking system in Albania? Has it reflected the deterioration of banking indicators and influencing the banking system's efficiency in the country?
- What was the historical performance of the policies undertaken by the Bank of Albania and the second tier banks in managing the effects of the financial crisis? Are those reflected in the level of liquidity performance in this period of time ?
- Which of the bank's macroeconomic or specific factors explain more clearly the performance of the liquidity level in Albania in the years 2006-2015?

The questions raised will help build the relevant model to produce results in view of the reasoning of the factors that have influenced the level of the deficit level in the country. There are many authors who estimate the likelihood in different ways (Vodova, 2013) supports the study on liquidity ratios, while others evaluate it in simulating different situations in banking systems according to(S. Rychtarik, 2009). The study will determine the analysis of factors under the Albanian banking system based on Vodova.

# CHAPTER 2
# LITERATURE REVIEW

According to the definition made by the Bank of Albania, liquidity means the ease and speed with which a financial asset may be converted into cash or used to settle an obligation. In this sense, cash is a highly liquid asset. This is accompanied by a liquidity risk as explained by the liquidity management regulations for banks operating in the Albanian banking system with the following terms:

1. "Absence of Liquidity" shall be considered any situation in which the bank:

a) Does not have sufficient liquid assets or has difficulties to realize them in the market in order to meet the obligations when they are matured and required by the depositors or other creditors; or
b) It is not able to finance the growth of its own assets;

2. Liquidity risk "is the possibility of financial loss as a result of lack of liquidity;

There are two types of risk (liquidity risk) according to the literature:

According to the IMF definition (Fund, 2008), the liquidity risk of the financing relates to the inability of a financial intermediary to settle liabilities when they mature. So somehow it relates to the definition of point 1a. ECB - European Central Bank - the market liquidity risk is the loss caused when a market participant wants to trade or liquidate a position immediately without reaching the best price. According to the IMF (Fund, 2008), both together constitute a systematic liquidity risk, which is the risk that the entire banking system will be unable to meet its obligations to third parties.

There are various tactics used to measure the liquidity of bank assets such as bid-offer spread, market depth and elasticity. (W, 2007)

In the past, best practices for measuring liquidity risk focus on the use of liquidity ratios. The indicators used in the previous reports include the ratio of liquid assets to total assets according to Bourke (p., 1989); Liquidity assets ratio Shen et al (C.h&Y.k., 2009). The highest liquidity ratio makes the bank more liquid and less vulnerable to failure. In addition, some studies point to the use of the credit ratio to total assets according to Athanasoglou et al. (2006) (al A.P.). The higher the value of these reports, the higher the liquidity risk.

Vodova (P.V., 2011) concludes that macroeconomic factors have a significant impact on bank liquidity. In particular, the inflation rate has an oblique relation not only to the general economy but also to the liquidity of banks, so there is a negative relationship between the level of inflation and liquidity of banks. High interest rates on lending have had a positive impact on bank liquidity, because it makes it more difficult for banks to lend loans. Also, the growth of non-performing loans has a negative relationship with liquidity, as the high level of unpaid loans obliges banks to reduce their loans, thus maintaining liquidity. This comes to the conclusion that many borrowers require a lot more loans in order to finance their business projects.

On the other hand, banks want to compete the demand for loans, to face less liquidity. Mentioning the interbank interest rate, it concludes that it is positively linked to liquidity, as banks are forced to invest their money in the interbank market. Regarding the size of the banks, a controversial conclusion that is made by policy makers affirms the principle "too big to fail". In fact, smaller banks have more liquidity, and large banks which rely on the "too big to fail" mentality are not better able to maintain enough liquid assets.

Determinants or factors that influence liquidity can be divided into three classes that are; microeconomic, macroeconomic and financial factors. According to Gunsel (T, 2008), the financial method uses financial reports that are in the context of CAMELS (C-Capital Adequacy, A-Quality Assets, M-Efficiency Management, E-Profitability, L-Liquidity and S-Size of assets). Micro level approach focuses on the balance of individual banks and these variables have become the causes of bank bubbles. Moore (W., 2009) investigated liquidity factors in Latin America and the Caribbean. Factors include the demand for cash and interest rates. Some authors such as (Aspachs, 2005) and (I Bunda, 2008) identified the following liquidity determinants, the interbank interest rate, the exchange rate, the credit

growth, the total size of bank assets, the bank's rescue plans central and business cycle. Macroeconomic factors are largely focused on the general state of the economy.

The liquidity ratio of a bank has shown to be sensitive to macroeconomic fluctuations. This is emphasized by (Eichengreen B., 2000). Increasing inflation, falling asset prices, high interest rates, credit expansion, real GDP growth define the bank's force of liquidity. High inflation rates and unexpected inflation changes have a depreciatory effect on interest rates and bank capital. It is concluded that the inflation rate determines banks' liquidity (Bessis, 2002). Unforeseen increase in interest rates leads to liquidity deterioration as a result of lower cash flows. The interest rate would show a near liquidity crisis and complex credit risk. The unemployment rate also affects the level of liquidity of the financial institution (R. Horvath, 2014) (C. Rauch, 2009) analyzing the liquidity factors of savings banks in Germany. It has been suggested that the banking interest rate, the unemployment rate, the previous years levels of liquidity, the client base and its profitability are the main factors of affecting liquidity.

Fielding(2005) had a different point of view and gave attention to the political and financial instability in Egypt. The factors were the discount rate, political instability and the reserve requirements. (S.Fadare, 2011) investigated the financial and liquidity crisis in Nigeria and noted that liquidity determinants were money circulation and monetary policy rates. The decrease in monetary policy rates raised the cash demand, leading towards an increase in loan-to-deposit ratios. On the other hand, (S.Fadare, 2011) affirmed that the decrease in cash flow related to banking sector deposits led to declining deposits to deposits.

### 2.1 Liquidator Determinants of Commercial Banks

#### Microeconomic factors

Banking factors such as banking liquidity and capital, Patheja (1994) defined as ordinary stock plus indivisible benefits, reserve for contingencies and other capital reserves, also when a bank loses reserves, it serves as a portfolio for engaging in losses different. Contrary to the liquidity-generating standard according to which banks create liquid assets, studies show the formation of liquidity by changing assets. Diamond, Rayan and Gorten show that banks create less or more liquidity by changing the liquid funds (passive)

.Thakor (1996) indicates that equity may also affect the composition of a bank's portfolio of assets.

Literature notes two opposite reviews of the banking capital and its relation the creation of liquidity. Banking capital tends to hamper the creation of liquidity through two different effects: the fragile financial structure and deposit collection. In fact, the fragile financial structure formed by small capital tends to favor the creation of liquidity, while large capital may remove deposits and reduce the creation of liquidity. So the effect of the fragile financial structure is: The bank accumulates funds from the depositors to lends them to the borrower. By observing the borrower, the bank thus receives private information access that gives this advantage in evaluating the benefit of its borrowers. Despite of this information advantage a problem is created for the bank to get the depositors' money demanding a larger breakdown of the loan proceeds.

If depositors do not pay a higher cost, the bank changes the observing effects or its lending effects. If depositors think that the bank may misuse their trust they may become suspicious to submit their money in this bank. The bank must consequently gain deposit confidence by adapting a better financial structure with large current deposits. Financial fragility favors and the creation of liquidity enables the second level banks to preserve as much lending as possible. High capital tends to reduce the creation of liquidity. In addition, Gorton and Winton (2000) suggest that high capital can decrease the possibility of liquidity creation by another effect: by accumulating multiple deposits. They see more deposits as liquidity agents than agents investing in banking capital, in fact the deposits are totally or partially secured.

High capital replaces investor funds from relative current deposits in floating banking capital. So the higher the bank capital, the lower the bank liquidity creation. Liquidity creates the bank's display to risk, because its losses can increase the level of floating assets to satisfy client requirements. The more liquidity it creates, the greater the losses associated with the availability of illiquid assets to cope with the liquidity requirements of customers. Banking capability lets the bank to be safe from a greater risk (Repullo 2004). From the second point of view, the greater the amount of banking capital, the greater the creation of its liquidity.

## 2.2 The size and liquidity of the bank

According to the argument "too big to fail," large banks can profit from an implied warranty, so they reduce the costs of their funds and have the opportunity to invest in risky assets. Large banks' "large bankruptcy" status can lead them to risky behaviors and to a high exposure to risk. If banks see themselves as the mentality of "too big to fail," then their motivation to keep liquid assets is limited. In the case of a short liquidity they depend on the support of last-resort lenders. Large banks usually operate at high levels of liquidity making them lose by selling rescue assets to satisfy their customers' liquidity requirements. Small banks typically focus on traditional mediation and transformation activities (Rauch et al. 2008) by holding small amounts of liquidity. There may be negative relationships between bank size and liquidity but this and other correlations may differ in our study.

## 2.3 Growth of loans and liquidity of the bank

The Comptroller's Handbook (1998) affirms that lending is the main activity for second level banks. Loan portfolio is usually the widest asset and origin of income. As such, it is among the largest sources of risk for a bank. As the loans are floating assets, the increase in loans means the growth of illiquid assets in the portfolio of assets of a commercial bank. According to Pilbeam (2005), the quantity of liquidity maintanedby a bank is heavily affected by the required loans, which is the basis for loan growth. If the loan demand is weak then the bank tends to hold more liquid assets, and when the loan demand is larger the banks tend to keep less liquid assets with long-term loans.

Bad credit and bank liquidity

Bad loans are interest-rate loans for a long period of time in contravention of the conditions and terms of the loan contract. The amount of bad credit determines the quality of banking assets. Their presence can lead to efficiency problems for the bank stability. According to Bloem and Gorter (2001), issues related to bad loans can influence to all sectors of an economy, financial institutions that tend to have large loan portfolios other than portfolios large bad loans that may have an impact to the ability of banks to provide loans. The large amount of bad credit can result in a loss of confidence on the part of depositors and foreign investors who can turn to other banks, thus causing liquidity problems. Thus, the totality of bad loans has a negative impact on banking liquidity. The presence of high stock of non-performing loans on the balance sheet of banks increases the

cost of their activity, damages their ability to carry out financial intermediation and requires an increased and inefficient use of their capacities.

Macroeconomic factors

**2.4 GDP growth and bank liquidity**

The macroeconomic conditions affect bank activities and investment decisions as well as on the bank's liquidity profile (Pana et al 2009). For example, the demand for differentiated financial products is higher during the economic boom period and may improve the bank's ability to extend loans and securities at a higher rate. Also similarly, economic regimes are aggravated by the reduce in the supply of bank loans. According to this, we expect that banks increase their transformational activities and liquidity during the economic boom period. During the economic expansion, which is known by a high degree of trust of entities and profitability, there is an increase in their level of investment. Entities lower their likelihood of liquidity, preferring capital assets with a higher return risk. In this case, entities have less liquid capital assets and give short-term debt with higher interest rates (Painceira 2010). Aspachs et al. (2005) showed that banks accumulate liquidity during economic slowdowns when lending is not as much in the picture. So the big economic growth is expected to make banks face portfolios and use their liquidity, which would lead them to lend more loans.

The liquidity price paid by the borrower and the liquidity of the bank

The liquidity price is the amount of the interest rate paid by the borrower and which forces the liquidity holder to divide it. Pilbeam (2005, p.89) stated that lenders want high interest rates that include the liquidity price they provide. The amount of the liquidity price grows with time to maturity. Hence, the ever-increasing rise in prices makes lenders give up their running money. Thus, the high interest rate and the higher liquidity price will make banks lend more leading to reduction of liquid assets. At present, the maintenance of liquid assets decreases the risk that banks may not have enough money to complete deposit withdrawals or new credit claims, making them to borrow high costs. Thus, by increasing the percentage of liquid assets will increase the risk of banking liquidity, leading to a lower liquidity price. This shows that the liquidity and the liquidity price (interest rate margin component5) go in opposite directions.

## 2.5 Short-term interest rate / money market and liquidity of the bank

The short-term interest rate is the cash prize payable by a borrower to a lender in exchange for the use of funds. The short-term interest rate is the rate paid on the money market instruments. Money market instruments are securities issued for a one-year or less maturity term, including treasury bills, trade papers, bank receipts, deposit certificates and repurchase agreements (REPO6). Treasury bills provide the basis for all other short-term domestic interest rates. Money market is very important as many of these instruments are maintained by banks as part of reserve that can be used as collateral if the bank wants to receive funds from the Central Bank. Hence, a short-term interest rate encourages banks to invest more in short-term instruments and strengthen their liquidity positions (Pilbeam 2005)

## 2.6 Inflation rate and liquidity of the bank

Theoretical literature shows methods through which predictable growth and when the inflation rate interferes with the ability to allocate resources. Recent theories point to the importance of information asymmetries in the credit markets and show how the growth in the inflation rate negatively affects the credit market and further on the financial sector (Huybens & Smith 1999). These theories have a common fact that is that there is an informal problem, the severity of which is endogenous, as an increase in the inflation rate reduces the real rate of return not only in money but also in assets in general. Reduction means a deterioration in the credit market. Consequently this leads to credit rationing. Credit rationing becomes more difficult with rising inflation. Given this, the financial sector provides less credit, source allocation is not as efficient and intermediate activity decreases with negative implications for long-term investments. On the other hand, the value of short-term liquid assets preserved by economic agents,will increase with rising inflation. Therefore, we see that there is no positive relationship between increasing the rate of inflation and banking liquidity.

## 2.7 Capital Accord (Basel II and Basel III)

Basel Capital Accord represents one of the biggest banking supervision challenges at the international level. It is a determining the capital adequacy methodology, which largely coincides with and flows from the international financial market trends. Namely, the introduction and new banking products being developed, new methods and instruments for

managing bank risks imposed the requirement for serious changes to the 1988 Capital Accord, which lays the foundation of the fundamental principles for defining the needed amount of capital for coverage of the risks to which a bank is exposed during its work. As a consequence of such developments and changes, the Basel Committee on Banking Supervision in 1999 initiated the Capital Accomplishment Process in order to develop a new framework for the definition of the capital base. In 2004, the Basel Committee approved the text of the Capital Accord, known as Basel II. With its approval, a number of countries in the world began activities for introducing and applying the provisions of this agreement. The methodology for determining capital adequacy in the Republic of Macedonia is in compliance with the standardized Basel II approach. Due to the results of the global financial crisis of 2007-2008 in the previous years, national financial regulators and international financial organizations took significant steps to strengthen the financial system. As part of those activities, the Basel Committee for Banking Supervision are of particular importance. Since the appearance of the crisis to date, the Committee has elaborated more proposals for the promotion of the permanent capital framework and the strengthening of prudent standards and has made changes to various parts of the agreement. There are also recent changes to the Basel Capital Accord, known as Basel III, which were approved by the highest body of the Basel Committee in August and September 2010.

Basel II: International Convergence of Capital Measurement and Capital Standards: a Revised Framework

Basel Committee's response to the financial crisis

International regulatory framework for banks (Basel III)

In order to implement Basel standards within the European Union, the European Union Regulation no. 575/2013 and the European Union Directive 2013/36.

Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012

Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC

# CHAPTER 3
# DATA AND METHODOLOGY

## 3.1 Research Methodology

The methodology used in the study is quantitative. Analyzing various factors, the study aims at detecting and measuring their impact on the liquidity of the banking system. Data obtained from secondary sources such as: annual reports published by the Bank of Albania, the International Monetary Fund, the INSTAT and the annual reports published by respective banks in the country during the period 2006-2015.

## 3.2 Building the empirical model

The following will be studied and analyzed on the four questions above. The discussion will focus on four liquidity reports that are:

$$\mathrm{L1} = \frac{\text{liquid assets}}{\text{Total assets}} * 100$$

The liquidity ratio L1 should give information about the bank's total liquidity capacity. Liquid assets include cash, deposits with central bank and other banks, debt securities issued by government and similar securities. In the liquid assets study we will include cash advances and cash equivalents according to the financial statements. As a general rule, the higher the liquid assets in general assets, the higher the ability to absorb liquidity shocks. However, the high value of this report can also be interpreted as inefficiency. As liquid assets provide lower income, they carry high opportunistic costs that arise from missing loan interests. Therefore, it is necessary to optimize the bond between liquidity and profitability.

$$\mathrm{L2} = \frac{\text{liquid assests}}{\text{Deposits}} * 100$$

Liquidity ratio 2 measures a bank's liquidity presuming the bank cannot borrow from other second level banks whether there is a need for liquidity. This is related to the liquidity risk of the funding discussed above. The Bank is capable to complete its liabilities in terms of

financing where the amount of liquid assets is high so as may cover volatile deposits) if the value of this ratio is 100%. The lower value indicates an increased sensitivity of the bank with regard to deposit withdrawals. The higher the value, the higher the ability to absorb the impact of liquidity

$$L3 = \frac{\text{Loans}}{\text{Total assets}} * 100$$

The liquidity ratio L3 shows the weight occupied by loans in total assets. Considering that loans are the least liquid assets for a bank, the higher the ratio so the less liquid is the bank and vice versa.

$$L4 = \frac{\text{Loans}}{\text{Deposits}} * 100$$

Liquidity ratio L4 shows the share of loans that are financed by deposits. A higher ratio indicates deterioration in liquidity and vice versa. Another interpretation is how well the bank can afford to deposit withdrawals.

## 3.3 The importance of the study

Responses to raised questions will help to understand the effectiveness of policies designed to regulate and supervise the banking system, especially during the crisis. In conclusion, the paper offers recommendations to address this issue, evaluating suggestions for future work, which cannot be covered in a single study.

In this way, the importance of the study is identified in the following reasons:

o Assess and measure the relationship and impact of macroeconomic and specific banking factors on the level of liquidity performance from a quantitative point of view;

o Identifies the performance of financial indicators over the period 2006-2015, assessing the effectiveness of management decisions during this period and especially their results after the 2009-2011 global crisis period.

o Identify the policies followed by banking institutions to successfully manage the challenges posed by the impact of the global crisis;

o Identify important conclusions and suggestions for future studies in this area.

# CHAPTER 4
# EMPERICAL FINDINGS

## 4.1 Hypothesis

The expected effects of the following variables on the liquidity level are assumed by different authors and are prone to macroeconomic and specific variables, but the final effects will be analyzed below. Large banks are capable to provide money from external sources, while small banks need to have a certain of  sufficient liquidity (AK Kashyap, 2002) pointed out that increasing of  demand deposits, increases liquidity (D Bonfim, 2012) found that most profitable banks tend to maintain low liquidity. Deposits are the main source of funds for banks. All of these variables influence the above liquidity ratios (C. Bonner, 2013) and (Delechat, 2012) found that bank size may have a negative impact in, however is significant.

However, banks are required to maintain sufficient liquidity to meet customer requirements. CAR relations with banks are important because CAR ratio is higher for banks that are more liquid, if inflation rates decrease and vice versa, because it protects the stability of the economy (M.Moussa, 2015) confirmed that GDP has a positive relationship with bank liquidity. The capital adequacy ratio (CAR) is the capital ratio that is held to absorb the loss from legal capital requirements. (Vodova, 2011) and (M.Moussa, 2015) confirmed that banks hold high liquidity (I. Bunda, 2008).

By contrast, (Aspachs, 2005) showed a negative relation of GDP on bank liquidity (R Horvath, 2014), stresses that lowering unemployment rates increases the demand for credit, which increases bank liquidity and a tightening monetary policy ( Vodova, 2011) adversely affects the likelihood. The latter emphasized that even the growth of the intermediation margin has a negative effect on liquidity. All of these factors will be analyzed through multiple linear regressions.

Table No. 1
*Banks Studied*

| Nr | The Name of the Bank |
|---|---|
| **1** | Raiffeisen Bank |
| **2** | National Commercial Bank |
| **3** | Tirana Bank |
| **4** | Alpha Albania Bank |
| **5** | Intesa Sanpaolo Albania Bank |
| **6** | Credins Bank |

Hypotheses to be tested through the linear regression model for the four liquidity ratios L1, L2, L3 and L4 at macroeconomic and microeconomic levels are given below:

$$\text{LIQUIDITY} = \beta_0 + \beta_1 \cdot \text{GDP} + \beta_2 \cdot \text{UNM} + \beta_3 \cdot \text{INF} + \beta_4 \cdot \text{SPREAD} + \beta_5 \cdot \text{REPO} + \varepsilon$$

$$\text{LIQUIDITY} = \beta_0 + \beta_1 \cdot \text{ROA} + \beta_2 \cdot \text{CAR} + \beta_3 \cdot \text{DEP} + \beta_4 \cdot \text{AKT} + \varepsilon$$

The zero hypothesis of our study is: none of the macroeconomic and banking variables does not affect the level of bank liquidity

Alternative hypotheses, at least one of the macroeconomic and banking variables, has an impact on the level of banking liquidity.

At the hypotheses of the study, the focus is independent variables and on the existence of liquidity as follows:

H_0: Inflation rate does not affect the level of banking liquidity;

H_a: The inflation rate has an impact on the level of banking liquidity;

H_0: GDP growth does not affect the level of banking liquidity;

H_a: GDP growth has an impact on the level of banking liquidity;

H_0: Unemployment rate has an impact on the level of banking liquidity;

H_a: The level of unemployment has an impact on the level of banking liquidity

H_0: The intermediation margin does not affect the level of banking liquidity;

H_a: The intermediation margin has an impact on the level of banking liquidity;

H_0: Repo rate does not affect the level of banking liquidity;

H_a: The Repo rate does not affect the level of bank liquidity

H_0: The ROA report does not affect the level of bank liquidity;

H_a: The ROA report has an impact on the level of banking liquidity;

H_0: Capital adequacy ratio does not affect the level of banking liquidity;

H_a: Capital adequacy ratio has an impact on the level of banking liquidity;

H_0: The size of the bank does not affect the level of bank liquidity;

H_a: The size of the bank has an impact on the level of bank liquidity

H_0: Deposits have no impact on the level of banking liquidity;

H_a: Deposits have an impact on the level of banking liquidity:

## 4.2. Results of regression and interpretation of results

In order to analyze the relationship between dependent and independent macroeconomic variables including banking variables in this study, we will need the use of the linear regression analysis SPSS.

Testing of hypotheses is performed according to the criteria of F, t, and probabilities and Ho is rejected if the probability results less than $\alpha = 0.05$ or when F-statistic results higher than the critical one according to degrees of freedom. Data processing regression data for macroeconomic variables are presented as follows:

Table No. 2
*Regression Results for Macroeconomic Factors for L1*

SUMMARY OUTPUT RAPORT L1

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.868363 |
| R Square | 0.754053 |
| Adjusted R Square | 0.44662 |

| | |
|---|---|
| Standard Error | 0.015589 |
| Observations | 10 |

ANOVA

| | *Df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 5 | 0.00298 | 0.000596 | 2.45274 | 0.202663 |
| Residual | 4 | 0.000972 | 0.000243 | | |
| Total | 9 | 0.003952 | | | |

Table No. 3

*Regression Results for Macroeconomic Factors for L3 Report*

| SUMMARY OUTPUT RAPORTI L3 | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| *Regression Statistics* | | | | | |
| Multiple R | 0.869708 | | | | |
| R Square | 0.756392 | | | | |
| Adjusted R Square | 0.451881 | | | | |
| Standard Error | 0.034026 | | | | |
| Observations | 10 | | | | |
| | | | | | |
| ANOVA | | | | | |
| | *Df* | *SS* | *MS* | *F* | *Significance F* |
| Regression | 5 | 0.01438 | 0.002876 | 2.483961 | 0.199376 |
| Residual | 4 | 0.004631 | 0.001158 | | |
| Total | 9 | 0.019011 | | | |

Table No. 4

*Regression Results for Macroeconomic Factors for L4 Report*

| SUMMARY OUTPUT RAPORTI L4 | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| *Regression Statistics* | | | | | |
| Multiple R | 0.843778 | | | | |
| R Square | 0.711961 | | | | |
| Adjusted R Square | 0.351913 | | | | |
| Standard Error | 0.047152 | | | | |
| Observations | 10 | | | | |
| | | | | | |
| ANOVA | | | | | |
| | *df* | *SS* | *MS* | *F* | *Significance F* |
| Regression | 5 | 0.021982 | 0.004396 | 1.977403 | 0.264312 |
| Residual | 4 | 0.008893 | 0.002223 | | |
| Total | 9 | 0.030875 | | | |

From the regression results we say that the model for macroeconomic variables for L1, L3 and L4 models does not explain the impact of these variables. However, the coefficient R2 shows the effect of all the variables together increasing even when other independent variables are added that do not explain well the variation between them. It is therefore necessary to calculate the customized determination coefficient as the addition of independent variables to the non-good correlated variables decreases it while R2 increases. Coefficient Determination (R2) shows how independent variables in regression explain the variance of the dependent variables, ie the level of banking liquidity. The results show that only 44%, 45% and 35% of macroeconomic variables explain the changes in the banking liquidity.

Regarding the statistical significance of the model we consider the F-statistic derived from the ANOVA analysis, which has values greater than the probability value p = 0.05, which confirms that the model is not statistically important as having a high value of F and a fairly large probability that the error level $\alpha = 0.05$. The propensity propensity for t-statistic that tests the statistical significance of beta coefficients are insignificant since their values

are greater than α = 0.05. So the multiple regression model is not important and the macroeconomic factors do not affect the above liquidity ratios.

Table no.5
*Regression Results for Macroeconomic Factors for L2 Report*

| SUMMARY OUTPUT RAPORTI L2 | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | |
| *Regression Statistics* | | | | | | |
| Multiple R | 0.91419 | | | | | |
| R Square | 0.835743 | | | | | |
| Adjusted R Square | 0.630423 | | | | | |
| Standard Error | 0.015916 | | | | | |
| Observations | 10 | | | | | |
| | | | | | | |
| ANOVA | | | | | | |
| | *Df* | *SS* | *MS* | *F* | *Significance F* | |
| Regression | 5 | 0.005156 | 0.001031 | 7.013324 | 0.041261 | |
| Residual | 4 | 0.000588 | 0.000147 | | | |
| Total | 9 | 0.005744 | | | | |
| | | | | | | |
| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* |
| Intercept[1] | 0.491941 | 0.191992 | 2.562299 | 0.030572 | 0.225532 | 0.758349 |
| N_PBB | 1.111411 | 0.512959 | 2.166666 | 0.05843 | 0.297936 | 1.924886 |
| N_PAP | -2.48277 | 1.050974 | 2.362356 | 0.042437 | -7.10385 | 2.138304 |
| N_INF | -2.58452 | 1.247006 | 2.072579 | 0.068079 | -8.07908 | 2.910045 |
| SPREAD | -1.80803 | 0.768267 | 2.353382 | 0.043066 | -7.71093 | 4.094879 |
| N_REPO | -3.74003 | 1.416561 | 2.640219 | 0.026904 | -9.59676 | 2.116696 |

[1]Regression constraint

For the L2 report the results are presented as above. Looking at the tailored coefficient of determination we say that 63% of macroeconomic factors explain the changes in the level of bank liquidity. So about 4.1% is the case that regression results are incidental. From the variance analysis, the propagativeness of the F-statistic is smaller than 0.05, which indicates that the model is important. . If the values of p <0.05, then hypothesis H0 is rejected, the linkage between the variables is important. The beta regression coefficients are tested by the hypotheses raised above with respect to the values in the p-value column. Also, all the beta coefficients will be analyzed in relation to the sign and their value according to the regression results

The final equation of regression has the following form for macroeconomic variables:

$$L2 = 0.491 + 1.111 \cdot PBB - 2.482 \cdot PAP - 2.584 \cdot INF - 1.808 \cdot SPREAD - 3.74 \cdot REPO$$

Let's analyze all the hypotheses of the study according to the value of p for the L2 report:

H_0: GDP growth does not affect the level of banking liquidity;

H_a: GDP growth has an impact on the level of banking liquidity;

In the literature, the impact of GDP on liquidity is twofold as seen by different authors but in the case of Albania it has no significant impact. The beta GDP growth coefficient is positive, 1.111 confirming the fact that GDP has a positive relationship with banking liquidity, but it is not statistically important to confirm the alternative hypothesis as p = 0.0584> 0.05.

H_0: The level of unemployment does not affect the level of bank liquidity;

H_a: The level of unemployment has an impact on the level of banking liquidity;

The value p = 0.042 is less than 0.05 which means that the hypothesis falls below zero and alternative hypotheses are accepted, so the impact of the bet is important. The unemployment rate beta of the unemployment rate is negative, -2,482, showing a negative correlation between the unemployment rate and the banking liquidity. Its sign is in line with other studies in this area, a negative correlation is noted, as rising unemployment rates would increase deposit withdrawals and lower liquid assets.

Expecting inflation to have a negative impact on the likelihood, even in the case of Albania, this happens because inflation growth devalues the domestic currency and assets that the bank has in the balance sheet.

H_0: Inflation rate does not affect the level of banking liquidity;

H_a: The inflation rate has an impact on the level of banking liquidity;

The beta inflation rate coefficient is negative, -2.584, showing a negative correlation between the inflation rate and the banking liquidity. The value p = 0.068 is greater than 0.05, which means that the alternative hypothesis is not proven, so the beta coefficient is not important. Over the years under study, the domestic currency has had sensitive fluctuations against the euro currency. However, its impact is negligible, also because inflation has fluctuated within the BoA target.

The growth of the intermediation margin increases the banks' focus on lending by reducing the percentage of liquid assets. Other authors have also come to same conclusion.

H_0: The intermediation margin does not affect the level of banking liquidity;

H_a: The intermediation margin has an impact on the level of banking liquidity

The beta of the intermediary margin coefficient is -1808, indicating that there is a negative correlation between the intermediation margin and the banking liquidity. The value of p = 0.043 is less than 0.05, which means that the alternative hypothesis is verified, so beta coefficient is important.

This coincides with other studies, as a high rate of REPOs has come as a result of the reduction of money supply to the economy by the BoA - tight monetary policy - reducing the level of bank liquidity. After analyzing the macroeconomic factors, it passes on the discussion of specific banking factors. Below is the result of reports that do not adequately explain liquidity.

H_0: Repo rate does not affect the level of banking liquidity;

H_a: The Repo rate does not affect the level of bank liquidity

The REPO rate beta coefficient is -3.74, indicating that it has a negative relationship between it and its banking liquidity. The value of p = 0.0269 is less than 0.05, which means that the beta coefficient is important.

Table No. 6
*Regression Results for Banking Factors for L1 Report*

SUMMARY OUTPUT RAPORTI L1

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.913608 |
| R Square | 0.83468 |
| Adjusted R Square | 0.702424 |
| Standard Error | 0.011431 |
| Observations | 10 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 0.003299 | 0.000825 | 6.311097 | 0.034301 |
| Residual | 5 | 0.000653 | 0.000131 | | |
| Total | 9 | 0.003952 | | | |

| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* |
|---|---|---|---|---|---|---|
| N_ROA | -3.97093 | 1.293856 | -3.06906 | 0.027813 | -7.29689 | -0.64496 |

The profitability link - the ROA - with the likelihood is negative, as we expected before we could get the results. Meanwhile, other factors such as capital adequacy, bank deposits and size do not matter for L1. From the regression score for the L1 ratio, the explanatory power of the model for banking factors is higher than for macroeconomic factors. About 70% of specific banking factors explain the changes in the L1 liquidity ratio. From the ANOVA analysis we can say that the multiple regression equation is important because the probability of the distribution F-statistic = 6.311 is 0.034, smaller than 0.05, so it shows that about 3.4% is the possibility that the regression results are random. However, in the beta test results that only the ROA with beta -3.97 is statistically significant since the propensity of t-statistic is less than 0.027 <0.05.

Table No.*7*
*Regression Results for Banking Factors for L2 Report*

SUMMARY OUTPUT RAPORTI L2

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.902893 |
| R Square | 0.815216 |
| Adjusted R Square | 0.667389 |
| Standard Error | 0.015099 |
| Observations | 10 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 0.005029 | 0.001257 | 5.51465 | 0.044592 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Residual | 5 | 0.00114 | 0.000228 | | | |
| Total | 9 | 0.006169 | | | | |

| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* |
|---|---|---|---|---|---|---|
| N_ROA | -4.79882 | 1.708991 | -2.80798 | 0.037638 | -9.19192 | -0.40571 |

The regression model is statistically significant from the ANOVA table. If we look at the L2 ratio, the results are approximately the same as the L1 ratio, unless the model's power is less than about 67%. Also profitability is the factor that matters for this report by showing the negative correlation between it and the banking liquidity. Studies in the same field have also come to the same conclusion.

Table No. *8*

*Regression Results for Banking Factors for L3 Report*

SUMMARY OUTPUT RAPORTI L3

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.92559 |
| R Square | 0.856717 |
| Adjusted R Square | 0.74209 |
| Standard Error | 0.023341 |
| Observations | 10 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|
| Regression | 4 | 0.016287 | 0.004072 | 7.473965 | 0.024416 |
| Residual | 5 | 0.002724 | 0.000545 | | |
| Total | 9 | 0.019011 | | | |

| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* |
|---|---|---|---|---|---|---|
| N_CAR | -3.02577 | 0.749941 | -4.03468 | 0.009975 | -4.95356 | -1.09799 |

Table No. 9
*Regression Results for Banking Factors for L4 Report*

SUMMARY OUTPUT RAPORTI L4

| *Regression Statistics* | |
|---|---|
| Multiple R | 0.941209 |
| R Square | 0.885874 |
| Adjusted R Square | 0.794573 |
| Standard Error | 0.026547 |
| Observations | 10 |

ANOVA

| | *df* | *SS* | *MS* | *F* | *Significance F* |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Regression | 4 | 0.027351 | 0.006838 | 9.702781 | 0.014145 |
| Residual | 5 | 0.003524 | 0.000705 | | |
| Total | 9 | 0.030875 | | | |

| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* |
|---|---|---|---|---|---|---|
| Intercept | 2.862969 | 0.948868 | 3.017246 | 0.029509 | 0.423826 | 5.302112 |
| N_ROA | 1.531322 | 0.624713 | 2.451243 | 0.036682 | -5.00288 | 8.06552 |
| N_CAR | -3.31871 | 0.852953 | -3.89085 | 0.011515 | -5.5113 | -1.12613 |

The regression results for the L3 and L4 reports are presented above. Only statistically significant factors are presented.From the ANOVA analysis for the model variables it turns out that there are about 2.4% and 1.4% that the regression result is random, the model is statistically significant. We see that the predictable coefficient of ratios is higher for these two reports, respectively 74% and 79%, which indicates an increase in the explanatory power between liquidity and banking factors.

In order to analyze the beta coefficients, note that the coefficient sign is related to the L3 and L4 ratio, since a high value of these ratios shows a low liquidity banking system. If we look for L3, only capital adequacy is statistically significant with p = 0.009. His sign is negative which means that an increase in capital adequacy ratio will reduce the L3 ratio.

The decline in the report shows a liquid banking system, therefore banks that have a high level of capital adequacy rate are more liquid.

Meanwhile for the L4 report it can be said that the impact is the same in liquidity with p = 0.011 by rejecting the zero hypothesis. The only difference lies in the ROA rate, whose coefficient is positive, which means that its growth increases the L4 ratio, which indicates a worsening of likelihood. This result can be expounded by the fact that the banks with higher profitability are more inclined to give more loans by increasing the risk of liquidity.

H_0: The ROA report does not affect the level of bank liquidity;

H_a: The ROA report has an impact on the level of banking liquidity;

H_0: Capital adequacy ratio does not affect the level of banking liquidity;

H_a: Capital adequacy ratio has an impact on the level of banking liquidity;

From the above hypotheses we say that only the ROA ratio and the capital adequacy ratio are bank factors affecting the level of banking liquidity. As to the size of the bank and the level of deposits they do not have an impact on the level of liquidity because their probabilities are greater than 0.05 by accepting the zero hypotheses.

## 4.3 Banking system, liquidity and financial crisis

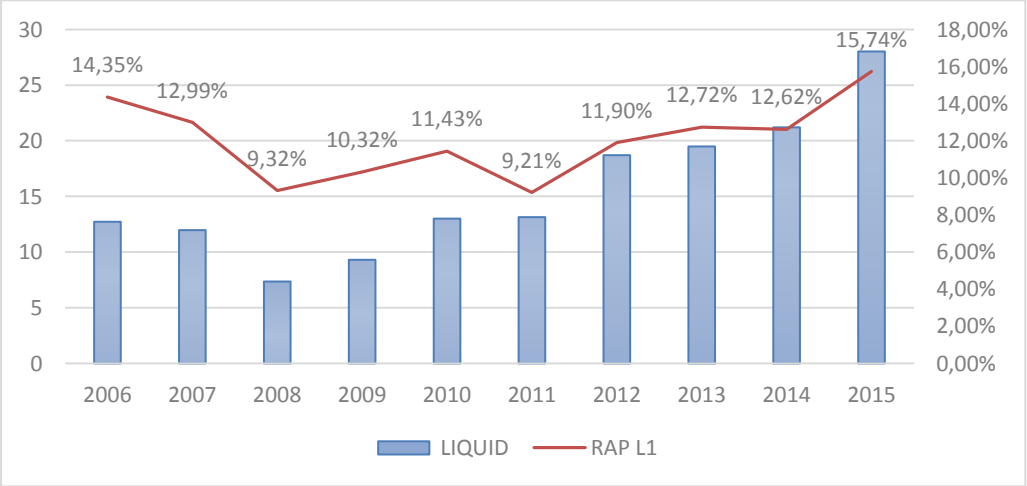
The Albanian economy was characterized by a relatively weak economic growth during 2011-2014 as a result of high uncertainties, tight financing conditions and poor aggregate demand. The higher growth rates of regulatory capital against risk-weighted assets led to a positive development in th**e capital adequacy ratio trend.** Economic growth was not enough to utilize the country's productive capacities, generating weak demand-side inflationary pressures. Poor demand for labor produced downward pressure on wages and other labor costs, while inflationary expectations hindered the effects on consumer price performance. Meanwhile, annual inflation fluctuated within the range of 2% -4%, reflecting also the easing monetary cycles. The regulatory capital structure has been favorable in terms of capacity to cover potential losses as it continues to consist of 90% of its base capital. During this period, the banking sector has been more cautious in the high-risk investment enterprise, focusing heavily on investing in low-risk assets. This indicator increased by 8.26% from 2011 to 2014.

The banking system has generally acted in accordance with the requirements of the legal and regulatory framework.However, some shortcomings have been identified in terms of credit risk management practices, customer transparency, liquidity risk**,** exposure to major risks, and so on more specifically, there are shortcomings in respecting:

o Regulation "On capital adequacy ratio" During the examinations, there are evidenced inaccuracies in the classification of asset items and their weighting in accordance with the category of risk they carry.

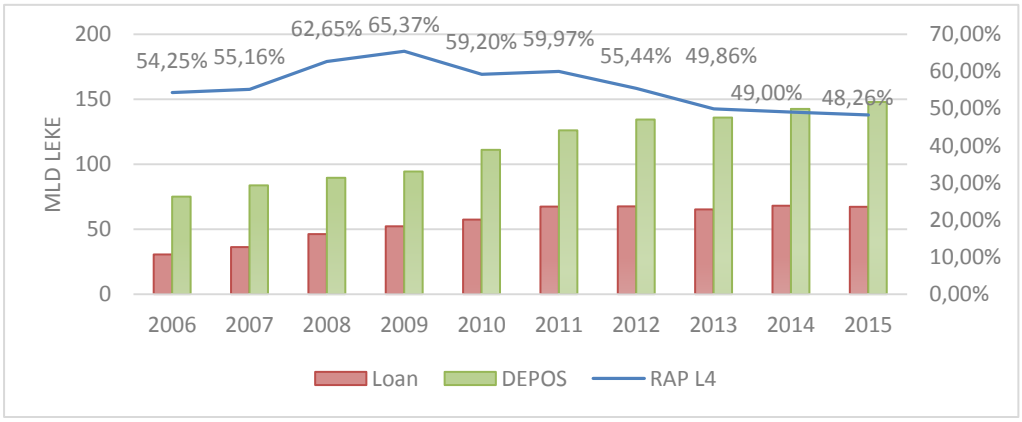
o Regulation "On Credit Risk Management". During the examinations, classified loans were classified in lower risk classes than foreseen in the regulatory requirements. In this context, examinations have aimed at the immediate elimination of deviations from regulatory requirements. The recommendations aimed at promoting the improvement of policies and procedures that cover lending activity, strengthening the analysis capacities of the bank's risk structure and improving the analysis of the borrower's financial position during the credit approval process.

o Regulation "On liquidity risk management". Shortcomings have been identified in the subjects' internal policies and procedures for managing liquidity risk. The periodicity of carrying out stress test tests was not respected in a way that can measure the exposure of the subject to the likelihood risk, both in normal circumstances and in unusual situations.Although the liquidity risk has generally been recognized as a reduction, as a result of improved liquidity and deposit growth indicators, banks have been asked to strengthen systems related to its measurement and administration, mainly as regards stress tests and testing of emergency plans.At the same time, monetary operations are oriented towards the liquidity supply of the banking system to ensure the sustainability of short-term interest rates and the control of liquidity risk premiums in the system. Liquid injection is carried out through open market operations - (7-day reverse repurchase agreements) and regulatory (reverse and reverse repurchase agreements with 1-month and 3-month maturity). However, the Bank of Albania interventions have aimed at injecting liquidity into the banking system, which has led to the reduction of the REPO rates, which has consequently increased the ratio of liquid assets (Graph No.1).




*Graph No.1*The performance of the liquid assets / assets ratio over the years 2006-2015*(Source:* Author's calculations)

In addition to the intervention by the Bank of Albania, the definition of bank rules by international institutions has influenced the performance of the banking system. Changes in the legal aspect expressed by the Central Bank have been in the function of adapting and implementing European directives with Basel's principles on increasing the effectiveness of supervision on second tier banks (Bank of Albania, 2005). The Basel Rules set out the relevant suggestions for the level of minimum capital required, on the rules of bank supervision behavior and the creation of a market in equilibrium. Acceptance of these rules has created a whole set of suggestions for banking indicators, although their implementation requires time and adjustment with the relevant market. Also, after 2009, the new law on deposit insurance scheme was approved. Relevant changes came as a response to panic or fear of depositors as a result of global financial events during this period. Thus, in this period, the deposits of individuals will be secured up to the value of 2.500.000 ALL at the rate of 100%.We can say that the years of the crisis and after the financial crisis have been accompanied by a decrease in bank lending and deposit growth. The use of alternative sources of funding,such as own business funds, poor economic growth below 2% and high unemployment rates have contributed to the reduction in demand for financing from the banking sector. This has led to the reduction of the L4 ratio to 48%, a reduction of almost 18% compared to 2010 and, consequently, improved the banking liquidity situation. (Graph No.2)




*Graph no.2*Performance of the loan / deposit ratio over the years 2006-2015 (*Source:* Author's calculations)

# CHAPTER 5
# CONCLUSIONS

**Main work conclusions**

Banks play a central role in all modern financial systems. To play this role effectively, banks need to be safe and perceived as such. The key and most important principle is that the economic value of a bank's assets be greater than its liabilities. The difference represents equity as a hedge of losses. However, the recent financial crisis underlined the necessity of holding liquid assets as a means of coping with immediate withdrawals from depositors. Therefore, the purpose of this paper was to evaluate the factors that determine the liquidity of Albanian banks. From the results of the paper we draw the following conclusions:

- Profitability measured through the ROA ratio is negatively related to the level of liquidity. She explains the likelihood in three of the four studied reports. This is explained by the fact that during the years studied, banks are engaged in risky investments, leading to the growth of non-performing loans after the financial crisis. However, banks have managed to maintain the level of liquidity at moderate levels.
- Banking factors have the greatest impact on the level of liquidity where the most important statistically result is: profitability and capital adequacy.
- The size of the bank and the level of deposits do not have a significant impact on liquidity. This can be explained by the fact that the banking and financial market has not managed to be a mature market.
- Capital adequacy is the second most important factor affecting the level of liquidity by having a fair link between them. She explains two of the four reports studied. Its effects are in line with foreign literature. Although most banks have managed to keep the CAR ratio within the required levels by law, there have been some banks that have not reached the minimum level.

- Macroeconomic factors have the lowest impact on the level of banking liquidity. Only one of the four reports is statistically significant. From these factors we note that the unemployment rate, the brokerage rate and the REPO rates have a significant impact on it. All of them have oblique links with studied reports and match foreign literature. Meanwhile, the GDP growth rate and the inflation rate, the first has a positive and negative correlation with the level of liquidity, but are not relevant in our model
- Regarding GDP and its impact on credibility, there is still talk among economists of what they have with each other. While the inflation rate, even though it has a negative impact, in the case of Albania it has had small leaps.

**Suggestions and limitations of the work**

Some of the main suggestions are:

- Although the banking system seems to be well-capitalized and able to withstand the significant shocks of economic factors that exacerbate credit quality, specific banks may need capital add-ons depending on the situations presented.
- Carefully monitor the liquidity situation in foreign currency, and especially in the euro. This would, among other things, require the stimulation of more balanced lending policies aimed at increasing the share of credit in leke.
- A fuller access to information regarding the Bank's liquidity risk assessment for each bank as a way of encouraging and reflecting bank managers to be cautious about taking over risk.
- Banks should be geared towards better investment strategies, more advanced management techniques, higher quality assurance and more services to their clients.

**Some of the work restrictions are:**

- The choice of methodology is based on the meaning of the variables dependent on the linear regression analysis. All independent variables are considered appropriate for the model regardless of correlation tests between variables or other statistical tests for selecting the best model.
- The choice of six banks to analyze liquidity is a limitation as the differences between banks in the management and structure of liquid assets vary, so this can lead to possible errors and poorly accurate results.

- Data collection is another limitation because their accuracy and lack are often contradictory in the case of Albania where different sources have reported different data. Also finding quarterly data for all variables would increase the accuracy of the model. They were part of the methodology before the start of the study, but finding them was impossible, so variables were chosen on an annual basis.

The results obtained must take into account these limitations. However, the contribution of this study serves as a step for more in-depth studies in terms of banking liquidity.

# REFERENCES


Albania, 1998: Seminar on Urban Renewal and Housing Modernization. (1998). *The Ministry of Public Works, Territory and Tourism*.

Albanian_Parlament. (2016). *The draft law "On the re-evaluation of immovable property"*.

Bank_of_Albania. (2013). *Udhëzues për Përgatitjen e Vlerësimeve të Pasurive të Paluajtshme për Qëllime të Marrjes së një Kredie nga një Institucion Financiar* .

Becker, A. P. (1969). "Principles of Taxing Land and Buildings for Economic Development." . *University of Wisconsin Press.*

Calhound, C. A. (2002). *Property Valuation Methods and Data in the United States* .

Crosby, N. (1999). Valuation Accuracy, Variation and Bias in the Context of Standards and Expectations . *World Valuing Congress Melbourne*.

Grigg, B., & Hossein, E. (2016). The Boundaries of Australian Property Law.

Gyourko, J., & Voith, R. (2001). The Price Elasticity of Demand for Residential Land: Estimation and Some Implication for Urban Form.

Habil, C., Schmid, U., & Hertel, C. (2005). Real Property Law and Procedure in the European Union General Report . *European University Institute*.

Hilbers, P. L., Zacho, L., & Lei, Q. (2001). Real Estate Market Developments and Financal Sector Soundness. . *International Monetary Fund*.

JEFFERIES, R. (2010). Real Value Valuation for Property in the 21st Century? - A Comparison of Conventional and Real Value Models . *Pacific Rim Property Research Journal*.

Kinsella, S. (2001). Property Rights: Tangible and Intangible.*Journal of Libertarian Studies*.

KOPRENCKA, L. (2011). Zhvillimi dhe Problematikat e Tregut të Pasurive të Paluajtshme në Shqipëri. *Universtieti i Tiranes*.

Kummerow, M. (2003). Theory for Real Estate Valuation: An Alternative Way to Teach Real Estate Price Estimation Methods. . *Pacific Rim Real Estate Society Conference*.

LaSalle, J. L. (2013). The Advancement of Real Estate as a Global Asset Class. . *Global Real Estate Markets Global Foresight Series*.

LAW_Nr._133. (2015). *Law For Property Treatment and Completion of the Property Compensation Process.*

Lawson, J. W. (2008). Theory of Real Estate Valuation. *School of Economics, Finance and Marketing RMIT Business*.

McAllister, P., Bowles, G., & Tarbert, H. (1997). Simulating the Effect of Valuation Error on Property Investment Performance Measurement. . *Royal Institute of Chartered Surveyors Cutting Edge conference*.

Pengfei, W. (2011). How to effectively integrate sustainability into property valuation? . *Department of Real Estate and Construction Management*.

Rahman, M. (2006). ``Development of Valuation Model for Residential Property, integrating Self- declaration``.

Rahman, M. (2006). Development of Valuation Model for Residential Property, integrating Self- declaration, Dhaka City.

Rama, A. (2013). Të drejtat e pronësisë në Shqipëri: Sfida dhe perspektiva. *Friedrich-Ebert*.

Schultz, J., & Perzanowski, A. (2016). The End of Ownership: Personal Property in the Digital Economy.

Schumann, C. P. (2006). Improving certainty in valuation using the discounted cash flow method. . *Valuation Strategies.*

Segal, I., & Whinston, M. D. (2010). Property Rights. *Standford Education*.

Sprankling, J. (2000). Understanding Property Law.

Subbarao, V. (1964). PROPERTY LAW .

TEGOVA. (2010). *Country-Specific Legislation and Practice* . The European Group of Values Associations .

The_Law_Library_of_Congress_Global_Legal_Research_Center. (2014). China: Real Property Law.

Trebilcock, M. (2012). Property Rights and Development: the Contingent Case for Formalization . *University of Toronto Faculty of Law*.

William, J. (2008). Theory of Real Estate Valuation . *Royal Melbourne Institute of Technology*.

Xinhuanet. (2014). Following the completion of this report, detailed rules regarding real estate registration, the Interim Regulations on Real Estate Registration, were published by the State Council.

Źróbek, S., Kucharska-Stasiak, E., Trojanek, M., Adamiczka, J., Budzyński, T., Cellmer, R., et al. (2014). Current Problems of Valuation and Real Estate Management by Value . *Croatian Information Technology*.