

**THE IMPACT OF MACROECONOMIC FACTORS ON  
THE LEVEL OF NONPERFORMING LOANS  
(Case of Albania)**

**by**

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## ABSTRACT

The aim of this study is to define the impact of macroeconomic factors on the level of nonperforming loans. Increasing the level of nonperforming loan in the banking system, especially after 2008 has made that many banking field researchers try to find the key factors that have brought this progressive augmentation and disturbing. This paper investigates and analyze the main reason of increasing nonperforming loans in the Albanian banking system, in the period of 2002-2015. The methodology used consist on the vector autoregression test to show off the connection between the level of nonperforming loans and certain macroeconomic factors where non-performing loans are taken as dependent variables and macroeconomic factors like; GDP, Interest rate on loan, Unemployment, Inflation and Remittances as independent variables. The data are taken from INSTAT, Bank of Albania and other sites related from 2002 to 2015 calculated on quarterly basis. The analysis reveal that the most significant impact was from Interest rate which has a positive impact on nonperforming loans. The study also concluded that some other factors that has a significant impact were, remittance effecting negatively the level of nonperforming loan and unemployment effecting positively the level of nonperforming loans.

**Keywords:** *Albania, Nonperforming loan, GDP, Inflation, Interest Rate, Unemployment, Remittance,*

## ABSTRAKT

*Qëllimi i këtij studimi është të përcaktojë ndikimin e faktorëve makroekonomikë në nivelin e kredive me probleme. Rritja e nivelit të kredisë me probleme në sistemin bankar, sidomos pas vitit 2008 ka bërë që shumë hulumtues në terrenin bankar përpiqen për të gjetur faktorët kryesorë që kanë sjellë këtë shtim progresiv dhe shqetësuese. Ky studim analizon arsyen kryesore të rritjes së kredive me probleme në sistemin bankar shqiptar, në periudhën e 2002-2015. Metodologjia e përdorur konsiston në testin autoregression vektor për të treguar lidhjen midis nivelit të kredive me probleme dhe disa faktorë makroekonomikë, ku kreditë me probleme janë marrë si ndryshore e varur dhe faktorët makroekonomikë si; GDP, Norma e interesit të kredisë, Papunësia, Inflacioni dhe Remitencat si ndryshore të pavarura. Të dhënat janë marrë nga INSTAT, Banka e Shqipërisë dhe burime të tjera nga viti 2002 deri në vitin 2015 llogaritet në baza tremujore. Analizat tregojnë se ndikimi më i rëndësishëm ishte nga norma e interesit e cila ka një ndikim pozitiv në kredite me probleme. Studimi gjithashtu arriti në përfundimin se disa faktorë të tjerë që ka një ndikim të rëndësishëm ishin, remitanca ndikon negativisht në nivelin e kredi me probleme dhe papunësia ndikojnë pozitivisht në nivelin e kredive me probleme.*

*Keywords: Albania, kredia me probleme, GDP, inflacioni, Norma e interesit, Papunësia, Remitencat,*

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Last but not least, special thanks also to my family for their ever-present love and support.

## **DECLARATION STATEMENT**

I hereby declare that this Master Thesis titled “The impact of macroeconomic factors on the level of nonperforming loans” 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.

Bledar Cela

10 June 2016

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# CHAPTER 1

## INTRODUCTION

### 1.1 Focus of the study

Since one of the main reasons that caused serious problems with banks around the world but also in Albania remains poor quality lending and improper management of the credit risk .But on the other hand are also a number of other internal and external factors that have considerable impact on the overall performance of the banking financial indicators. Credit quality is considered as one of the basic indicators of financial well-being and performance of a bank that has a direct impact on profitability indicators. Delays in payment of loans not only bring negative effects to the lender in this case banks but have a domino effect on the entire economy of a country. But it is worth mentioning the fact that there are many internal and external factors which have their impact on the banks profitability. The object of our study will in fact be credit quality as well as some specific and nonspecific factors that may have greatly impact on bank profitability. Numerous studies carried out for the crisis in the world, showed that loans and illiquidity constitute one of the key factors in the bankruptcy of many banks in the world, which has contributed directly to the reduction of profitability on the market . Therefore the consequences of credit risk is a very important issue and very sensitive. According to the theory of banks, there are 6 main types of risks they face throughout their operations, but credit risk and the credit quality of a particular item requires more attention especially nowadays.

As long as the granting of loans is considered as the main and most important sources of income, the self-management of risk associated with lending has a positive impact on banks profitability. Through this study we tried to find the connection of the impact of the

credit quality and other specific factors banking and macro to index more usable profitability of banks of the second level as well as to study the link that exists between these most important representatives' variables.

The world has experienced a large number of financial and banking crisis along these last 30 years. By Caprio and Klingebiel<sup>1</sup> which analyze 93 countries, they identified about 112 systemic crises since 1970. According Detragiache and Demirguc - Kunt (1999) identified 30 major banking crises that have occurred since 1980. Through those that have experienced developing countries, the authors noted that three Nordic countries –Finland, Norway and Sweden, have also gone through these crises similar to the 1980s and 1990s. To some extent this crises experienced a dramatic drop in assetprices coupled with a real financial collapse. Finally these bank failures were associated with substandard loans and the losses that came as a result of their growth, the impact of which is still felt in today's worldwide economy. What was observed by surveillance carried out worldwide was that the mortgage loan sector was presented as riskiest sector in 2007.

According to financial market results was not a good financial situation, a situation which was followed by a real financial crisis and then the economic crises. This situation led to a necessity for a detailed examination of a number of factors related to the functioning of financial markets to identify true root of the start of this crisis. The most talked issues in that time were the financial standard of fair value, the role of ranking agencies and capital adequacy in the banking system which would bring about changes and improvements in the situation. In response to the banking crisis, important reforms were undertaken in the banking regulatory system.

More important were the agreements of Basel, Basel I and Basel II and the efforts being made to implement Basel III. Basel 1 require a minimum of 8% capital adequacy for banks. Basel 1 focuses on credit risk, from where it was thought that the minimum capital required is the way to prevent banks assumes a greater risk of the opportunities they had

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<sup>1</sup>Caprio, Gerard, and Daniela Klingebiel, 1997. "Bank Insolvency: Bad Luck, Bad Policy, or Bad Banking?" *World Bank Economic Review*(January)

and also contribute to maintain the equality for competition between banks. However, some issues such as the lack of measurement of the sensitivity of credit risk and poor incentives to strengthen the risk management system were presented as the main shortcomings in this regard. It was very clear that Basel 1 was unable to provide an adequate response in the context of a world that comes and changes. In fact it was the opposition of big banks that the limit by 8% looked penalizing, compared with smaller banks and thus demanded reduction of this limit for them. Consequently Basel II entered into force to improve risk management as well as to better respond to global changes. Basel II also significantly improved management practices that were not evident in Basel 1.

Yet ironically, the frequency of crisis there has declined with the introduction of successful reforms. The question naturally arises, why has this happened? There are many factors that contributed mainly economic and political conditions. It is evident that the risk management is not the only factor that improves the banking business, is a key factor in allowing the collapse of the banking system of a country.

Moreover Jean-Charles Rochet (2008)<sup>2</sup> stresses that the accountability and the independence of bank supervision are the key factors for successful reform. As long as bank supervisors represent the economic and political interests of the respective countries, it hinders the implementation of international rules successfully. This led to the bankruptcy of banks and difficulties in financial markets. For more discussion on the financial crisis by many scholars and thinkers mentioned the fact that a greater attention to risk management will significantly avoid negative effects of the global financial crisis. Therefore, risk management discipline is being paid nowadays a very special attention. However, the global financial crisis brought some very important lessons that will lead to improved risk management in the future. In this context, continuous monitoring of credit quality has turned into one of the most challenging and most important world economic studies. This was one of the main reasons that motivated to do a study in this field.

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<sup>2</sup>Rochet, J.-C., 2008. *Why Are There So Many Banking Crises? The Politics and Policy of Bank Regulation*. Princeton University Press.

The banking industry is characterized by the problem of moral hazard, which encouraged banks to take on more risk. This fact can lead to greater social cost. Furthermore the trend of globalization is modifying the structure of banking markets around the globe, highlighting serious issues dealing with financial stability and competition. Issues that become even more acute for post-communist countries of Europe, given that banking systems that are created are relatively new and inexperienced.

Albanian banking industry, as well as in many other post-communist countries underwent significant structural changes during the period of economic transition. The liberalization of the banking market and the entry of foreign banks led restructuring same market and especially that after the privatization of the Savings Bank. Firstly it was an improvement of competitive environment, where banks expanded their network, introduced new products, improved quality of service and further engaged in activities of high returns in an attempt to protect their share of the market and to ensure financial stability performance. This led to a more efficient use of their financial resources, including their capital. But this kind of outbreak did not last long. Problems began to appear, especially in the credit market and for several years, affected by the international crisis, it seems as they have fallen into a deep sleep, where their efforts or top policy makers awake seem small or useless.

Banks in Albania, as well as all European banks are obliged to follow the rules and standards of the Basel deals signed, especially the capital adequacy since 2008 (Basel II). The aim of Basel II was to build a well-organized structure adjustment capital, oversight and market discipline, as well as to further improve the risk management of financial stability. Considering the development of financial market securities the banking sector has become more complex in recent years. As a result more and more banks are getting involved in the more complex transactions, being exposed even more with different types and levels of risk. Governments often through central bank influence the situation and try to stabilize the economy through regulatory mechanisms. However it is worth mentioning the fact that the most significant risk that requires more care to keep under control is credit risk and credit quality. The primary goal consists in improving the quality of credit risk

management without interfering in the competition among commercial banks as well as continuous surveillance of all specific factors that depend directly on the internal management of the bank itself. Rules should be interactive or flexible to be successful due to rapid technological changes, political and economic situations.

The main object of this study is to describe the level of quantitative impact credit quality and other specific macroeconomic factors and some of the external factors in the profitability of the Albanian banking system. This study is focused on most major operating banks in Albania, the bank occupying significant part of the banking market and especially the credit economy. The basic assumption of this study is that if credit quality is good and satisfactory levels, the level of profitability will be relatively high, and on the other hand if the management of credit risk is not at the right level then the level of profitability it will be relatively low. Moreover profitability may be expressed differently as well-credit risk management but also other specific factors affecting it. The basic question which is based on research is: How important is the impact of the credit quality and other macroeconomic factors to the profitability of banks? This study will try to give an answer to this basic research question.

## **1.2 Objective of the Study**

The objectives of this study are:

- To explore long run and short run relationship between non-performing loans and certain macroeconomics factors.
- To analyze of the current situation of NPL in the Albanian banking system.

## **1.3 Motivation of the Study**

The choice of this topic was directed mainly by issues affecting today the Albanian banking system in lending but also for the vital importance that it represents the totality of a country's economic activity. Oriented mainly by the problematic but also attracted by the latest post crisis, we thought and realized the choice of this theme for study. Justification for the choice of doing our part, we took into account several indicators:



First, the increase in non-performing loans in enormous numbers from year to year as well as other problems that represents our banking system constituted interesting to study their impact on the profitability and performance of the banks themselves.

Secondly, even modest contributions can be given in the banking sector in relation to the key factors of credit risk that have the greatest impact on the profitability index.

Thirdly, the existence of very few studies of this nature carried out in Albania earlier, would constitute an innovation from our side regarding this study.

Fourth, the existence of safe and reliable data and information resources for banking system published and audited by independent international organizations.

#### **1.4 Credit Risk**

Recent years many financial institutions are facing many difficulties for various reasons, among them, the most important still directly related to standards of soft loans to borrowers with poor management of risk of the loan portfolio, or a kind indifference or lack of enough attention towards economic phenomena or other circumstances that could lead to a deterioration of the situation of a certain bank counterparty.

**Credit risk** relates to the loss of principal or financial compensation that is due to the failure of borrowers in repayment of indebtedness or otherwise non-fulfillment of contractual obligations by the borrower. This risk arises every time that a borrower expects to use future cash flows for debt repayment.

According to Heffernan (1996)<sup>3</sup>, the credit risk is defined as the risk that an asset or a loan can turn into a refundable in the event of default or in danger of default directly in meeting

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<sup>3</sup>Heffrenan, Sh. *Modern Banking in Theory and Practice*, Wiley, 1996

the obligations of the contract between the two parties. In each case, the actual value of the assets falls jeopardizing the solvency of the bank.

Bessis (2002)<sup>4</sup> describes as one of the most critical issues for as long as loss of a small number of some very important clients, can cause insolvency which could lead to bankruptcies.

Credit risk by Giesecke (2004)<sup>5</sup> is one of the most important risks faced by banks and the success of their business depends precisely on the accurate measurement and effective management of this risk compared with other risks facing banks. Increase in credit risk will increase the marginal costs of debt and equity, a situation which will cause increased cost of banking funds. (Basel Committee, 1999)

Brewer (1986) used the ratio of credit / bank assets, to measure the impact of activity on the risk of bank credit. The reason why it has used bank loans are because they are relatively illiquid and subject to a high risk of failure associated risks compared with other bank assets, implying a positive correlation between the credit / assets and measuring risk. (Altunbas, 2005).

Heffernan<sup>6</sup> (1996) mention that banks serve as financial intermediaries between deposit and borrowing parties to participate in a given economy. Banks differ from other types of financial firms because they provide deposit and loan products within.

A large number of authors such as Rajan and Zingales (1998)<sup>7</sup>,citing the fact that the efficiency of financial intermediation affects economic growth, while at the same time the

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<sup>4</sup> Bessis,J. Risk management in banking, Wiley-2002, 2 Edition

<sup>5</sup>Giesecke, K. 2004, "Correlated default with incomplete information,"*Journal of Banking and Finance* 28, 1521-1545

<sup>6</sup>Heffernan's. *Modern Banking in Theory and Practice*, Wiley, 1996

<sup>7</sup>Rajan, R & Zingales,L. "Financial Dependence and Growth"- *The American Economic Review*, Vol88, No 3—june 1998

difficulties of banks that lead to bankruptcy have negative effects on the entire economy (Caprio and Klingebiel, 2003)<sup>8</sup>.

Many analysts, when considering the relationship between compensation and credit risk, tend to talk about them in terms of credit quality. But the expression credit quality is generally very complex and can mean different things to different people. Also very important is the distinction between credit risk and difficulties in meeting loan.

The health of a country's economy is a very important factor, which causes changes in the composition of characteristics that are related to credit risk. Thus, the cyclical changes of income, unemployment and price level directly impacts on credit risk. Credit user when changing personal income and unemployment rates, the report also differ in payments to income and assets against liquidity ratio. Increase or decrease the profitability affects the ratios of liquidity and working capital to borrowers. These changes in the composition of the characteristics associated with the risk of the stock of credit have a significant impact on the level of difficulties collecting loans.

Various scholars have often developed different debate about whether Albania was involved right from the global financial crisis. Beneficiaries of loans are mainly businesses, but also individual citizens with average incomes who want to buy a house, car, afford overseas studies of children, etc. perform holiday abroad. Their number increased dramatically over the years, adding thus the risk of default of the contractual obligation in time between the parties.

Another threat has to do with the fact that the majority of commercial banks in Albania have foreign shareholders and depend on parent banks in Austria, Greece and Italy. These parent bank can be made to have liquidity problems and may exhaust the solvency of their subsidiaries in

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<sup>8</sup>Caprio, Gerard, and Daniela Klingebiel, 2003, "Bank Insolvencies: Cross-Country Experience." Policy Research Working Paper No.1620. Washington, D.C.: World Bank

### 1.4.1 The management of credit risk

Despite that history of credit risk is new, from financial engineering professionals have been proposed many new technologies and methods of modeling on this issue. Seven basic reasons are recognized, related to the accelerated increase of interest to analysts on the field of credit risk management.

- a. **Structural growth of bank failures.** Especially recently statistics show an increasing number of bankrupt banks in the world compared to the period before the global financial crisis of 2007.
- b. **The decline in bank intermediation.** Capital markets have enabled the acceptance even of small and medium sized companies that are able to provide the necessary funds without recourse to bank.
- c. **Increased banking competition about the interest margin.** Despite the decline in average credit quality, interest rate margin (spreads) decreased greatly, and is deteriorating relationship between risk that banks take and return. This comes as a result of increased competition on the acquisition of low-quality borrowers.
- d. **Volatility and decline in value of collateral.** The Asian crisis, the Russian and USA showed that real estate values are very difficult to predict in the case of their liquidation. However, as the uncertain the value of the collateral is the greater will be the risk of paying the loan. Typical example was the case of mortgage loans in the US in the years 2007 - 2008 with the financial crisis as the value of collateral fell almost 50% causing many negative consequences for banks and borrowers.
- e. **Increasing the scale of the use of derivatives and other off balance sheet.** The extraordinary expansion of derivative instruments and increasing the level of credit exposure increased the need for analysis of the loan portfolio not only for their loans. Many international banks in notional value of derivatives exposures on off-balance sheet instruments is 10 times more than the entire value of the loan on their balance sheets.
- f. **Advanced computer systems and the development of information technology** has given banks the opportunity to test more sophisticated modeling techniques for measuring credit risk

**g. The requirements of the Bank of International Settlements for capital based on risk.** Promoting stronger banks to develop new models for the management of credit risk was due to the dissatisfaction capital requirements imposed by BIS under agreement "Basel I" in 1992. In 2004 BIS proposed new capital agreement known as "Basel II", which connects more capital requirements for the degree of risk facing the credit for consumer loans, commercial loans, public debt and interbank loans.

To measure credit risk, several reports have been used by researchers. To measure the impact of activity on the risk of bank loans, Brewer (1989) used the indicator measured by the ratio of loans over total assets. This indicator was elected because loans are relatively illiquid as well as carrying a higher risk than other forms of investment, what gives the argument for a positive correlation between this indicator and risk measurement.

Interest rate risk is the risk of falling revenues due to the movement of interest rates. It is known that the interest rate changes periodically. Mark (1983) found that larger banks are better protected from fluctuations in interest rates. When market rates change, income and expenses to adjust their equally fast, leaving the current net operating income largely unchanged. As shown in previous studies and results, capital structure is one of the main determinants of the performance of banks in the United Kingdom as showing the importance coefficient ratio of capital to total assets.

Authors like Ducas and McLaughlin (1990)<sup>9</sup> have argued that the instability of banks profitability significantly influenced the risk of credit. They claim that changes in the performance or profitability of banks usually come as a result of changes in credit risk, because an increased risk exposure leads to reduction of the bank's performance and profitability.

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<sup>9</sup>Ducas J and McLaughlin, M. M. (1990). *Developments affecting the profitability of commercial banks. Federal Reserve Bulletin*, 76(7) 477-499.

Heffernan (1996)<sup>10</sup> has noted that credit risk is the risk that an asset or a loan becomes irreversible, as opposed to a fixed term contract. So when it happens or when it is more and more present, performance, profitability and / or net interest income will be affected. Angbazo (1997)<sup>11</sup> has noted that banks with large credit portfolios are likely to require more marginal interest to compensate for a higher default risk.

Cooper (2003)<sup>12</sup> added that variations in credit risks will result in variations in terms of loan portfolio of the bank which will significantly affect the bank performance.

## **1.5 The models of Risk Evaluation**

### **1.5.1 Fundamental analysis of credit risk**

Usually, credit analysts prepare credit reports, which summarize the financial situation of the economic entity and highlight strengths and his weaknesses. For that analysts should have some basic skills such as:

- a. Knowledge of the rules of national and international accounting;
- b. Previous experience in the field of accounting for research analysis of the financial statements of economic entities;
- c. Deep knowledge of the macroeconomic factors, different industries

Credit analyst knowledge of accounting are necessary for analysis of the company's financial situation by reviewing the statements which includes, balance sheet, revenue and expenditure and financial flows.

Three simultaneous analysis of financial statements will make it possible that the credit analyst to understand how the company is operating. It is also very important to realize that often the notes accompanying the financial statements are very important for the

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<sup>10</sup>Heffrenan, Sh. *Modern Banking in Theory and Practice*, Wiley, 1996

<sup>11</sup>ANGBAZO, L. (1997): "Commercial bank net interest margins, default risk, interest-rate risk, and off-balance sheet banking", *Journal of Banking and Finance*, 21, 55-87

<sup>12</sup>Cooper, M J. Jackson III, W. E. and Patterson, G. A. (2003). *Evidence of predictability in the cross-section of bank stock returns*. *Journal of Banking and Finance*, 27(5), 817-850

analysis of credit risk, as they provide details and critical information needed to understand financial statements.

Before analyzing the financial statements of the borrower analyst should be able to quickly create an opinion about it. For this, the analyst credit should be based on key indicators as: the size of the company, profitability assessment, the ratio of debt to capital, the level of "EBITDA", the level of capitalization, etc.

**Large companies** although not all financially stable, are more "healthy" than small and medium companies. Small and medium enterprises are the most vulnerable in the event of economic downturns and may lose their competitive advantages. On the other hand, large companies have relationships with many banks and thus create more opportunities themselves to finance their needs.

**Profitability** expressed by net profit is a good indicator of "health" financial company. We should note that a decrease in profits or even a negative profit represents not necessarily a negative sign, but it is important to understand why this phenomenon occurs.

**Evaluation** of the company, whether internal or external should reflect all the company's operations and provide better solvency of the company.

**Debt to equity ratio** of the company. Modern management practices of corporate finance promote the use of financial leverage, since it allows a fiscal shield and reduces the weighted average cost of capital.

**EBITDA**, earnings before deduction of interest, tax, depreciation and amortization is easily computable index from the statement of income and expenditure. It represents the amount of cash generated from operations, before payment of the interest, taxes, depreciation and amortization. This indicator gives an indication of the amount of money available to finance investment and other expenses.

**Market capitalization** is an important indicator of solvency for companies listed on the stock exchange.

In general, large companies, which in their organizational employ credit analysts, have developed their own formats for submission of credit reports in order to ensure compliance and consistency in their reporting.

**In the first section** (general information) are the following subsections:

**1. The environment of the company**, which carried out a review of the history of the company, its activities and the key financial and operational indicators. Loan officer or customer service contact with all potential borrowers. What is important at this stage is how to better inform clients about products that suit their needs more.

## **2. Evaluation of potential borrowers**

After identifying the opportunity, loan officer collects all relevant information from borrowers in connection with accounts of domestic banks and their performance, to the financial statements of historical and current external evaluations of borrowers of rating agencies, company information on the web and brochures as well as various information in order to realize a good evaluation as potential borrowers.

Apart from these at this stage should be considered and monitoring of the various risks that accompany credit rating. It should make a detailed analysis of business risk, financial risk, as well as structural.

## **3. Loan Decision Making**

Often in the past but today it can happen that this decision is taken from credit officer itself. Often it represents a significant conflict of interest due to the fact that the banker's performance is measured precisely by the number and amount of loans signed.

Another way to making a better decision and the target is the one carried out by the Credit Committee (usually for large amounts is optional) including credit analysts independent decision). Self-functioning of the Directorate of Risk is the most efficient for a decision-



making process independent. Credit risk sector that is under the jurisdiction of the Central Directorate, measures and evaluates the loan officer's report verifies the documentation establishes a valuation hierarchy. This committee gives consent on the basis of reports for loans.

#### **4. Loan Disbursement**

After taking the decision the loan agreement prepared for signing. Then the credit officer should prepare the contract agreement which has to be signed between the borrower and bank, and also in this contract should be mentions all terms and conditions including interest rates, principal, commissions, conditions etc. Once the contracts were signed, the funds made available to the borrower in his account at the bank where he applied.

#### **5. Credit Monitoring**

Once credit has been signed and funds are made available to the borrower, the monitoring step starts for the bank. Smaller banks could centralize the approval of loans, analysis and administrative functions, while especially the largest banks can delegate authority to bankers at branch or require that if the loan exceeds a certain amount should be reviewed and approved by committee lending.

**In the second section**, a qualitative assessment:

Subsection "political situation" is very important and should be considered when analyzing the credit situation of an economic entity. Occasions such as: strikes, tumult, confiscation of assets by governmental authorities should be reflected in this subsection because they affect significantly the financial situation of economic entities.

Subsection "macroeconomic environment" is another factor that credit analysts must take into account the financial situation of an analyze economic entity.

Subsection "regulatory risk" analyzes the risk associated with the possibility of intervention of state authorities through restrictive rules, which affect the profitability of the company.

Subsection "operational factors" relating to whether the company under analysis can be affected by events such as catastrophes, natural disasters or responsibility for the environment in which it operates.

Subsection dedicated "Management Company" has special significance for qualitative assessment of the company. Actually there is a discrepancy of interests between shareholders and managers of companies on a large scale. However shareholders are trying to stimulate their managers of companies with different compensation plans which affect the future of society.

In subsection "industry / competition" analyzes the structure of the industry where the company operates and the market share covering market growth, product segmentation and customers, the trend in prices of products and the barriers to entry or exit from the relevant market. A critical element is the detailed review of the company's competitors analyzed.

**In the third section** includes the quantitative evaluation of the report is devoted to analysis of the financial statements for the performance of which the analyst should be allowed to consider any documentation of society. This section includes the following subsections:

Subsection "Financial Statements" (balance sheet, income statement and statement of expenditure and financial cash flows) which constitute the most important quantitative assessment.

Subsection dedicated report "goodwill + intangible assets / total assets". A good credit analyst must distinguish very carefully the value of intangible assets of the company and reflect him in his final report.

Subsection "liquidity and financial flows" is the essence of credit reports. The financial crisis of 2007 showed that the financial sector that relied on short-term financing was unable to pay its obligations to creditors. Another important source of liquidity for companies associated with having money, which comes from the operability of society. Operating cash flows can be observed from the statement of financial flows. If you use historical financial flows making proper arrangements analysts can design the future expectations of these flows.

In subsection "debt service" ratio analyzed "the debt / profit before deductions (EBITDA), which shows the capacity of the to settle its debt. Usually, financial institutions set limits on debt service while banks did not give loans to companies with a debt ratio higher than 2.5 times.

In subsection "profitability" net profit is analyzed as one of the most important indicators of the company. Profitability can be divided into several categories in order to assess the cost structure of the company as follows:

Report:  $\text{COGS} / \text{Sales}$ , which indicates the amount of raw materials, labor and production costs used for the product sold. Depending on the type of society will determine the ratio.  
Report:  $(+ \text{ expenses Selling expenses} + \text{ common administrative cost} / \text{ total sales})$  showing operational efficiency. When this ratio is high reflects higher operating expenses and lower when it shows that the company is operationally efficient.

## **1.6 The components of credit risk management.**

The main components of credit risk management can be grouped as follows:

- a) The Board and senior management
- b) Organizational Structure
- c) Systems and procedures for identifying, accepting, measuring and controlling risks

### **The Board and senior management**

It is the responsibility for approving key policies and strategies related to credit risk and better management thereof, which should be based on the basic strategy of the bank. The strategy should be reviewed by the board at least once a year. Policies and strategies regarding the need to:

- a. Describe the bank's tolerance towards credit risk
- b. Ensure that overall exposure to credit risk is kept at prudent levels and in accordance with the requirements for capital.
- c. Ensure that senior management for individuals responsible for credit risk management, possess the skills and knowledge necessary to in order to successfully perform the basic functions of risk management.

The primary goal of the strategy of a bank loan is to determine the bank's desire for risk. Credit risk strategy should explain:

- a) The bank plans to provide loans based on different customer segmentation, economic sectors, products, credit terms and currency, geographical location.
- b) The target market, the preferred level of portfolio diversification and concentration in the credit market.
- c) Pricing strategy, confirming the banks own competitive position in the market of banking products and services.

You should take into account consistently a country's economic cycles and to adapt in accordance with the composition and quality of the loan portfolio. On the other hand, the strategy should be more stable in the long term.

Senior management creates and develops policies and procedures for managing credit and gets approval for them from the board of directors and is responsible for implementing them more effective. Policies and procedures should be clear and communicated at all hierarchical levels as well as serve as a guide for staff on the types of lending including corporations, SMEs, consumers, etc. agribusiness.

## **Organizational Structure**

The organizational structure should be consistent with the bank's size, complexity and diversification of its activities. Every bank creates the Committee of Credit Risk Management, which is responsible for implementing policies and procedures approved by the board top, establishing acceptable levels of credit risk that the bank faces.

Monitors credit risk, recommends the board to clear policies on standards, sets the responsibilities and powers of levels approvingly on exposures credit standards for collateral mechanisms review of credit concentration risk, monitoring and evaluation, pricing of loans, the extent of provisions, rules and compliance with applicable laws.

Banks should establish the Department of Credit Risk Management, which provides that the risk taken is within the limits approved by the Risk Management Committee, ensures that business line is in accordance with the risk parameters. They are responsible for providing adequate provisions.

### **Systems and procedures**

Systems and procedures should emphasize on:

- 1- Analysis of loans
- 2- Assessment of collateral
- 3- The decision of lending
- 4- System analysis after approval
- 5- Supervision

Banks use different forms of organization for the lending function. The essence of the matter is continuous control of credit risk officers. The regarding analysis includes:

1. Respective periodic analysis of financial statements
2. Re-evaluation of the collateral and the current ratings
3. Visits to the borrower's credit facility and its production areas
4. Careful control of the state of activity of the borrower

**Loan origination:** Banks should be clear that the loan is used for the purposes of financing the borrower. It should not rely solely on the collateral for the credit, but the primary focus should be the ability to pay and customer reputation in the market.

Banks will be able to minimize as much risk through the process of diversification, but cannot be eliminated completely because a part of this risk is caused by factors that act systematically in the whole economy (systemic risk) credit .Risk can be minimized through careful credit analysis, risk analysis, research collateral to cover the loan, the financing of existing customers to avoid negative choices that will lead to growth further to this risk.

**Setting limits:** Limits size should be based on the borrower's credit, economic conditions and risk tolerance. Limits are placed on products, various activities for specific industries, economic sectors, and geographic regions or to avoid concentration risk.

**The internal risk assessment:** Evaluation of credit risk is a summary of the indicators of a bank's exposure to the individual loan. An internal rating system categorizes all loans in different classes based on the credit quality indicators. A good rating structured credit serves as an important tool to monitor and control the risk of individual loans, the loan portfolio of the bank, the terms and pricing of credit, frequency of monitoring, analysis of deteriorating credit and accurate calculation of provisions future loans.

### **1.7 Internal evaluation systems**

Over the years, banks worldwide have expanded OCC evaluation systems by developing internal systems assessment which share more finely credit rating categories. It notes that at any moment there is always the chance that a loan to fail, regardless of the probability of failure is low, banks must maintain a certain reserve for these loans.

According to internal rating models loans are divided into 10 categories labeled with letters from AAA to D. According to the classification in the table the maximum rating is AAA, which indicates the level of minimal risk while category D have to do with

maximum risk and a total expected losses. Categories that range from 1 to 6 are considered "passing grade" as categories from 7 to 10 as loan with lower quality.

According to studies conducted by Treacy and Carey (2000) in the US and in some of the most developed countries of the world there is a great variability between models of banks' internal rating. The authors point out that qualitative factors are very important in the evaluation of small and medium enterprises (SME), exactly where the loan officer responsible for assessing and this logic was not true for large businesses.

Evaluations are primarily carried on a time horizon of one year regardless of the validity of the data obtained with three to five years. The structure of internal rating systems can be one dimension or two dimensions. In the first case, each loan is assigned an overall assessment and, in the second case the solvency of each borrower separately evaluated the severity of individual loan loss.

### **1.7.1 Comparison between traditional and new methods of measurement and credit risk evaluation**

In this study it carried out an analysis of measurement methods and credit risk assessment by traditional models and new models.

**The main advantages that present traditional models presented as follows:** Fundamental analysis of credit risk is simple to understand and implemented by credit analysts. Analyst here is only required to have necessary knowledge to analyze the financial situation of the company through reviewing statements: balance sheet, income and expenditure, cash financial and macroeconomic situation.

In the decision-making process with credit experts the decision to grant a loan trusted loan officer or branch manager of the bank. This model appears simple to apply as for issuing credit or not by analyzed only these five key factors: character, capital, capacity, collateral and conditions of the economic cycle;

Neural networks are computer systems that are characterized by three elements: inputs, the input weights and hidden units. These systems are more efficient because they avoid the problems of subjectivity in decision making; internal evaluation systems share loans in 10 categories labeled with letters from AAA to D. According to the classification of the minimal risk level AAA mark while in category D have to do with the maximum risk. Credit scoring systems are used in decision making process by analyzing some key factors that determine the probability of failure and the combination of these factors in order to give a quantitative stipple. They are easy to apply as lending decision are relates only to the interpretation of the value of final function.

**The main disadvantages that are present by traditional models are as follows:**

Deciding on these models is usually performed taking into account historical data such as: financial statements, various financial reports which affected the accounting policies that follow various associations;

The number of factors that is taken as the basis for decision-making is limited mainly in the microeconomic and not integrated with other macroeconomic factors such as general economic conditions of the country where the loan is being processed;

Subjectivity in determining the weights applied to various factors makes it difficult to monitor the decision-making although in many cases the presence of credit committees try to avoid these kind of problems.

**The main advantages of the new models are represented as follows:**

Credit metrics is a method for assessing the risk of the loan portfolio as a result of changing the value of the debt due to changes in the credit quality of the borrower. This method is innovative because it includes not only the extreme event of failure of the company but also the improvement or deterioration of credit quality. The risk here is evaluated within the context of portfolio changes, together with correlation of credit quality between different borrowers. By this logic we calculate the effects of diversification and portfolio concentration level .Kamakura model estimates for the probability of failure of deadlines



that range from 1 month to 5 years. The uniqueness of this model lies in the fact that it includes not only the specific data for companies, but also for the industry given society in which it operates, to the economic environment as well as key macroeconomic factors. The innovation model is that we can calculate an expected failure frequency for each borrower.

**The main disadvantages present new models give as follows:**

High complexity level, analysts that will use these models must be trained more as their misuse can give negative effects and can cause higher losses to the financial institution; Difficulties in determining the weight to be assigned to each of the factors, which are used for the assessment of credit risk;

In relation to the comparison between new and traditional models we could say that the latter are simpler to be applied while the new ones are more complicated, but at the same time even more precise results. Albanian banking system may say that second-tier banks apply different models for credit risk assessment.

However banks depending on the type of customer use models of credit risk assessment so: For businesses banks mainly use basic models of credit risk assessment; for individual banks primarily use scoring models of credit risk assessment. Use of new models of credit risk assessment in our country's banks has not yet been made possible mainly by the lack of a broad basis of data that are necessary for the construction of these models and complexity that represent them. Also if you seek to find a link between the type of model used for the evaluation of credit risk and the level of non-performing loans in the Albanian banking system that would be virtually impossible because banks do not make public their models because they consider them confidential . However, we can say that the banks occasionally perform different reviews regarding stock assessment of credit risk by adjusting them according to various conditions specific to businesses and the general macroeconomic conditions.

## **1.8 Credit Analysis of Albania Banking System**

### **1.8.1 Characteristics of banking system in Albania**

Considering the fact that in 1992, only three state banks operates in Albanian banking system and in 2016 this number has been increased to 16 banks with private capital it is evident that Albanian banking system is considered as an important sector covering 88 % of the financial system

In December 2015, the assets of the banking system amounted to 87.9% of GDP while in view of the market shares of the banking system is noted that 5 biggest banks have mainly 68% of the loan portfolio and 75% of deposits. (Bank of Albania, 2015)<sup>13</sup>

From an in-depth analysis of the banking system is noted that businesses segment are the most preferred for lending where the figure accounts for about 63% of total loans granted, where most credited appear trade, manufacturing industry and construction, while lending to agriculture there is still limited and modest figure that requires special attention nowadays. In the context of total deposits only 12% are from different businesses while individuals' deposits have the overwhelming weight of the system (88%). (Bank of Albania 2015)

In connection with the capital adequacy ratio of banks of the second level they appear in good standing with 16.2% at the end of 2015 versus 12% regulatory minimum. 16.2% of the level of capital adequacy in the banking system as a whole means that Albania is sustainable in relation to the level of capitalization. It is observing an unusual increase in the rate of bonds 2.4% in 2005 from where it was noticed a slight decrease in interest on deposits. In 2009 there was an increase in the 1% but a decrease in the years 2010-2015. With regard to non-performing loans have a figure of 60% of the loan portfolio in '98 figure that later resulted in 4.3% in 2008 and 19% in 2013 and around 23% in late

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<sup>13</sup>Bank of Albania Annual Report 2015, p 82

2014. Today, more attention great is not the growth of the loan portfolio but to their quality. (Bank of Albania 2014)

During these years it has been a shift towards medium-term loan because the demand for the real estate and house purchasing was increasing, and this is very interesting product for banks but also for customers. Real interests and intermediation margins (loan-to-deposit) appear somewhat higher which indicates that our banking system is well-capitalized.

The structure of credit in the banking system has undergone changes related with different sectors of the economy, their maturity and currency in which they are offered by commercial banks. During this period there have been significant changes in the term structure of credit in favor of medium and long term by some 70% of the total loan constitutes medium- and long-term loans. On the other hand there is a significant growth of individual loans (1/3 total) and a foreign currency credit situation where about 69% of total loans granted.

It is observing an unusual increase in the rate of bonds 2.4% in 2005 from where it was noticed a slight decrease in interest on deposits. In 2009 there was an increase in the 1% but a decrease in the years 2010-2016.

With regard to non-performing loans have a figure of 60% of the loan portfolio in 1998 figure that later resulted in 4.3% in 2008 and 19% in 2011 and around 23% in late 2012. Today, greater attention is not in the growth of the loan portfolio but to their quality.

Bad loans at the end of June 2012 amounted to 21.2% of total loan portfolio, an increase of 27% compared to June 2011. This is the highest level of bad loans that are seen in Bangladesh since 2001, the time when banks were still state owned. In late June, about 71% of loans granted in Albania continued to be settled in an orderly manner, while 7.7% Short delays display and kept under monitoring by banks.

Bad loans belonging largely credits granted to business, reflecting on the one hand general economic hardship, the sector of the Albanian business and, on the other hand, poor quality of businesses financed by banks during the boom years lending, 2004-2008.

Banks are currently faced by side with the growth of bad loans, on the other hand, the decline in growth rate of lending or other banking services. Interest income grew by nearly 7 percent, while interest expenses grew by 12 percent, an indicator of the rapid growth of deposits and slow lending growth.

Besides Credins Bank, which is composed of foreign capital 29.85%, and 95.63% Union Bank, all the others are 100% owned by foreign capital. This is a sign of a growing interest in the European powerful banks and investment quality of the interior. Also based on (Claessens and Laeven, 2003)<sup>14</sup> the increase of foreign capital is evidence of greater competition. But will it suffice to say that the banking market is competitive enough?

Albanian banking system is not a particular focus on a particular country, and this can be considered as a positive element because of the effects of diversification. Referring to the latest figures, we see a fairly wide stretch of bank branches more important, from which offer a wide range of services to clients anywhere in Albanian cities. Albanian banking system in recent years has been characterized by a rapid expansion of its activity, as seen in the growth of total assets, loan portfolio, deposits collected, range of products and services offered in the context of increased competition, net income and other indicators of qualitative and quantitative. In the years 2001-2007, the banking system has generally generate higher rates of return on equity and assets, ranking among the first countries in the region. This proves once again that the inclusion of Albanian banks in activities with higher risk, thus generating the highest financial results. However, in 2008 when the global economy was by the financial crisis, the Albanian banking system, observed signs of slowdown of activity and deterioration in financial indicators.

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<sup>14</sup> *claessens dhe Laeven, Financial Dependence, Banking Sector Competition, and Economic Growth, World Bank Policy Research Working Paper 3481, January 2005*

Distribution by total assets of banks in G1, G2 and G3 as follows:

G1 group includes those banks that have total assets of less than 2% of total assets in the Albanian banking system: Emporiki Bank, Union Bank, First Investment Bank, Commercial International Bank, Credit Bank of Albania, Veneto, Societe Generale,

G2 group includes those banks that have total assets of more than 2% but less than 7% of total assets in the Albanian banking system: Alfa Bank, Italian Development Bank, Procredit Bank, National Bank of Greece, Credins.

G3 group includes those banks that have total assets of more than 7% of total assets in the Albanian banking system: Raiffeisen Bank, Bank Tirana, Intesa San Paolo Bank, National Commercial Bank

Analysis of the performance of equity over the years by Peer-groups of the system finds that the share of equity G3 has generally been increasing, compared to the decline in the share of G1. In 2004, only three banks in the group G2, while subsequent developments have led to increased market share for some of the smaller banks and their transition to G2. During 2009 the share of G2 fell by 9%, compared to growth with the same value G3 weight changes affected by the passage of Alpha Bank in G3. However, the bank again passes in the second group in 2010 by reducing the weight of this group. In addition to changes in the composition of bank peer-groups of large banks, but also the medium generally they have reflected a higher demand for capital to support the expansion of their activities and to maintain the level of capital adequacy.

## **1.9 Bank credit in Albania**

The banking sector remains the key segment of financial intermediation in Albania, whose assets represented about 94.5% of the 121 total financial system assets and about 82.2% of GDP. Consequently, we can say that the banking system is quite good representatives

of our financial system, playing its role in the economic growth and economic - financial system stability.<sup>15</sup>

Data from the most recent 6 months of the second half of 2015, it was observed that lending at the end of 2015 amounted to 42.8% of GDP of the country, reaching the level of 577.8 billion.<sup>16</sup> While we refer to growth from year to year, we note that the annual growth of credit stock for 2014 marks 2%, while a year earlier in 2013 the 15.3% result. This slowdown mainly reflects the weakness of demand for loans as a result of the uncertainty of economic agents about future economic developments. Also, banks have shown a greater prudence in the selection process of clients and the implementation of procedures for the granting and monitoring credit.

In the early years of the establishment of our banking system in 2 levels, competition between banks was almost zero, due to the entirely state capital component. The lack of existence of this competition was reflected in many sectors of the economy and undoubtedly affected the poor in lending to the economy.

Until 1997, about 80 percent of total lending in the country was covered by state-owned banks. However, after these years of stopping the process of lending by state banks, it created the possibility that other banks, mainly private and joint venture, to expand their activities in the field of lending. After 1997, lending decreased, while the market was covered mainly by banks, mutual and private banks, which in this period had an increase, but not to the extent that they can cope with the economy's needs for credit and can be kept level of credit growth at the same pace with the growth of GDP. Meanwhile, the situation began to show changes, particularly evident after 2004, marking an increase of lending to banks at a fast pace. Credit to the private sector by the end of 2014 represents 97% of the total loan.

Banks have shown a low risk tolerance, which is reflected in the further tightening of credit conditions. The poor performance of private sector credit is reflected in further

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<sup>15</sup>Financial Stability Report of Albania (2011), p 59.

<sup>16</sup>Bank of Albania - Financial Stability Report Second Quarter 6, 2013, pp 55-56

slowing its annual growth. Greater use of ALL in bank lending during the past three years, is reflected in the significant increase of its weight in credit to the private sector, especially businesses. If we refer to the table below we can see that going over the years seeing an increased interest of the public for funds for lending in local currency and a decline in foreign currency loans.

**TABLE 1.1 The structure of outstanding loans by currency, in%**

Currency	Dec 2007	Dec 2008	Dec 2009	Dec 2010	Dec 2011	Dec 2012	Dec 2013	Dec 2014
<b>Lek</b>	24.4	28.1	27.5	27.4	29.8	30.2	32.1	34.5
<b>Foreign</b>	75.6	71.9	72.5	72.6	70.2	69.8	67.9	65.5

**Source: Bank of Albania**

The loan portfolio by currency in 2013 shows an increase in foreign currency loans where the highest growth of its recorded in the third quarter, by 3.8%, while the local currency higher growth of credit results in the fourth quarter of the year . By maturity, lending represents a shift towards long-term maturity.

During the second half of the year, the stock of long-term loans rose by 8 billion (or 3.1%). Meanwhile, the stock of credit growth is almost negligible short-term and medium-term loans fell by 2.2 billion or 1.9%. Long-term loan at the end of the year holds about 47% of the loan portfolio. Increased share of the portfolio in domestic credit to individuals is lower as a result of greater use of the national currency of more years. Total assets of the banking sector accounts for about 82% of the country's GDP. At the end of 2014, banking sector assets expanded by about 3.4% compared to the end of 2013 and by about 11% against the same period a year ago. Historical performance of the banking sector assets volatile consequence of changes in the contribution of the main items of the assets. Albanian banking sector remains dominated by five large banks. Together, these banks represent about 68% of lending and 75% of public deposits.

**TABLE 1.2 Share of total assets and loan portfolio of the banking system to GDP**

	2007	2008	2009	2010	2011	2012	2013	2014
Tot Asset (in Billion)	496.6	624.3	742.9	834.1	886.3	990.6	1,120	1,200
Total assets / GDP	60.9	70.8	76.8	76.7	77.7	81	84.81	87.63
Total loans/ GDP	7.3	9.3	15.7	22.4	30.2	36.5	39.3	43.5

**Source: Bank of Albania**

On the other hand, the quality of the loan portfolio of businesses has deteriorated more than the quality of the loan portfolio of individuals. By sector, the ratio of non-performing loans was 25.5% for trade, repair of motor vehicles and household appliances, 29.6% for construction and 23.1% for the manufacturing industry. The ratio of nonperforming loans to households 16.9% marks (without including non-residents).

### **1.10 Composition of Loan Portfolio in years**

The longer the borrower's bank to hold funds or have a contractual right to receive funds, the greater is the risk of negative developments that may occur in the future. Repayment of term loans based on past activity and expectations for future operations. If not fulfilled forecasts, it shows the weakness of the loan, but does not mean that it is always necessary to be reclassified asset. The absent of generation of sufficient cash flow to repay the debt is a clear weakness that jeopardizes the repayment of loans and in many cases requires the reclassification.



Classification of loans by delayed days under Albanian law<sup>17</sup> as given below:

**Loan defaults (0-30 day delay) provisioning rate of 1%,**

When the financial condition of borrowers and estimates of future incoming cash are completely sufficient for the continuation of its activities and the repayment of debts, as well as the principal or interest is not paid for a period of 1 (one) to 30 (thirty) days from the date payment of the installment;

**Mention loans (31-90 days delinquent) provisioning rate of 5%,**

The principal or interest is not paid for a period of 31 (thirty-one) to 90 (ninety) days from the date of payment of the installment;

**Substandard loans (91-180 days overdue) provisioning rate of 20%:**

When the financial situation of the borrower, capital inflows and currency assessed as insufficient for the proper fulfillment of arrears, or bank does not have all the information required or updated needed to fully assess the financial condition of its principal or interest is not paid for a period of 91 (ninety one) to 180 (one hundred eighty) days from the date of payment of the installment;

**Doubtful (181-365 days overdue) provisioning rate of 50%:**

The borrower "insolvent / bankrupt", considered as a real possibility, the principal or interest is not paid for a period of 181 (one hundred and eighty-one) to 365 (three hundred sixty-five) days from the date of payment of the installment;

**Loss loans (over 365 days overdue) 100% provisioning rate:**

When the borrower's estimated lacking all documentation necessary to determine the financial situation; or the borrower is insolvent, is included in the liquidation process; or the borrower has died and no one can repay the loan; or the bank has acted legally and conclusively (the decision is made final court) to carry out the enforcement process of collateral, the principal or interest is not paid for a period of more than 365 (three hundred sixty-five) days from the date of payment of the tranche.

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<sup>17</sup>Law No. 8269, dated 23.12.1997 "On the Bank of Albania", as amended, Section No. 11 "credit rating"

**Table 1.3 Composition of the loan portfolio of the Albanian banking system (2007-2014).**

CREDIT PORTFOLIO COMPOSITION								
Rating	2007	2008	2009	2010	2011	2012	2013	2014
Pursuit	3.6 %	3.39%	3,9%	6%	11%	7.80%	9.20%	8.02%
Substa ndard	0.80 %	1.12	1.2	4%	8.30%	5.60%	7.50%	9.87%
Suspici ous	0.50 %	0.89	0.9	1.35%	2.70%	3.40%	4.10%	4.71%
Lost	1.00 %	1.05	0.9	1.23%	3%	3.70%	4.80%	6.6%
TOTA L	100 %	100%	100%	100%	100%	100%	100%	100%

**Source: Bank of Albania**

As shown in the table data, recorded a significant increase of non-performing loans from year to year, which has led to the deterioration of banks' financial indicators. If we refer to the first and last to consider an increase large enough ratio of nonperforming loans to total loans, from 2.3% in 2005 to 23% in 2012, from where there is an increase significant credit losses, and those substandard. The table suggests that the quality of the loan portfolio in all sectors of the economy has worsened excluding trade sector in which we have an improved quality of the loan portfolio. It noted that the deterioration has been greatest in the hotels & restaurants sector and industry, and this has come as a result of the effects of the economic crisis. Manufacturing and energy sector have deteriorated but not too high.

### **1.11 Banking system and crisis, the situation in Albania**

Over recent years loans in absolute and in percentage have been increased considerably. If we analyze the data carefully to note that the growth rate of problem loans is higher than the growth rate of the people of outstanding credit in the banking sector. If we make

a more detailed analysis of the performance of the loan portfolio by class, recorded the last two years (2013 and 2014) a declining share of quality loans against the increased share of non-performing loans.

While portfolio loans, recorded an increase in all three grades, but the greatest increase observed in loans classified as "substandard" and credit "lost". The reasons that have led to the deterioration of these indicators are numerous, but among the most important we can mention:

- The effect of the global financial crisis was also reflected in Albania
- Strong decline in the pace of economic growth which has led to higher capability of paying compensation to individuals as well as businesses
- High exposure to more than one bank without credit registry implemented yet
- The level of credit contraction in recent years
- Also poor quality work and careless of the commercial banks with the management of loans portfolio
- problems with enforcement of collateral because of assessments of property

The crisis in the financial sector fell rapidly in the real sector of the world economy. The decline of quantity and higher funding from the malfunctioning of markets led to lower investment and trade, hitting domestic demand and prompting a sharp slowdown in real economic sectors worldwide. The unemployment rate increased in all developing countries, at a time when enterprises were forced to cut production costs to respond to falling demand.

The financial crisis which shook the banking sector in the US initially to be extended later to Europe has become unsafe for banking clients and private investors worldwide.

Less credit for the economy in general and individuals in particular translate less rewards for employees, which means less disposable income is expected to translate into less of household income available for consumption and savings. Given that the crisis has global dimensions and that our emigrants in the countries where they live and work are among the most exposed workers expected that the risk of decline in remittances is very high. It

is a fact now that remittances have fallen sharply and negatively impacted the economic growth slowdown.

In a situation of a general economic slowdown, and given the context of lower prices of raw materials, so reduce inflationary pressures - fiscal policy takes a primary role, which naturally runs monetary policy. Fiscal incentives from the government should consist of increasing government spending in order to offset the reduction in consumption while Bank of Albania must respond to additional way in order to reduce the cost of money by reducing the interest rate.

The low economic growth in 2009 in the EU countries, also had impact on the Albanian exports, which represent about 750 million euros in the form of different minerals, crude oil, or textiles and shoes.

In a Europe in recession, there is less demand for Albanian exports, plus this, the fact that there is a fall / substantial price fluctuations for raw materials around the world markets further worsened the country's trade deficit. Economic recession that swept most of the countries with whom we have trade relations, according to the Bank of Albania has contributed to the reduction of trade exchanges and the inflow of foreign currency in the country.

Both these factors are reflected in the reduction of consumption, exports and investment, leading to slower economic activity and putting pressure on fiscal indicators of budget revenues and the budget deficit. Remittances were also one of the items that suffered the largest decline among Albania's economic indicators, impacting directly on reducing the welfare of Albanians in the country. The fact that no developed country has remained unaffected by the financial crisis, means a lot for Albania, which has about a third of the population in these countries as economic migrants.

These effects of the global economic crisis are felt even in Albania. In a banking system characterized by difficulty in the process of lending and high cost of borrowing, it is

foreseeable that the ratio of non-performing loans over total loans in the system will increase. This phenomenon happened at the end of 2012 where the non-performing loans were amounted in the figure of 23 %.( Bank of Albania, 2012)

The impact of the global crisis already being felt, while there are also some limited consequences of the Greece crisis and this is normal. But beyond these factors, it is not seen any major problems for the economy. Greek banks in Albania are healthy and Greek banks operating in Greece are also relatively healthy. In Western Europe, the problems were not banks and states. In Greece, in fact, the opposite occurred. Banks are probably the healthiest part of the Greek economy. Greek state has problems because of the budget deficit. This has created a difficult atmosphere in the country, but within the next two years, things seem to be improving.

Some other facts that show the effects of the global crisis in Albania are as follows:

1. Gradual rise in prices mainly associated with widespread consumer items;
2. Fluctuations in growth once again to lower inflation and gradual depreciation of the lek in the foreign exchange market
3. Revenues from taxes and customs marked lower levels;
4. Decline in the process of obtaining loans and bank deposits;
5. A drastic drop in sales of real estate in the figure of 50%;
6. The decrease in remittances;
7. Fluctuations in the level of foreign investment;
8. Rising prices of food products and non-food products;
9. Tightening of lending conditions by banks;
10. Index change in the trade deficit;
11. The impact on the housing market

However, the situation in Albania in connection with the crisis presented relatively little impact compared with other European countries, for several key reasons than in other Balkan countries and Europe.

### **1.12 The impact of macroeconomic factors in the credit risk and non-performing loans in Albania**

In the early 2000s, Albanian banks have been more willing to invest in low-risk activities. The favorable macroeconomic conditions that have characterized the Albanian economy during the years before the global crisis hit, has positively influenced the process of lending to different sectors so that the level of non-performing loans has been low. While the situation worsened in 2008 when borrowing began to slow down while the level of nonperforming loans began to increase rapidly.

As is noted an increase in credit risk in the beginning of the global crisis, it was deemed necessary by the Bank of Albania to become more vigilant against potential vulnerabilities of our banking system. In this context, it is important to identify the macroeconomic variables that are statistically significant in the determination of credit risk that banks cope during their activity. Important through econometric estimates, to determine the impact of any of their solvency in the banking system. From any of the risks facing the banks, the credit risk is considered as the most important to keep under control. Usually banks set aside at least half the capital to protect against losses resulting from credit risk.

According to a study conducted by Bozdo and Kalluci (2006), credit risk accounts for about 45% of all risks faced by Albanian banks.

A study done by Kalirai and Scheicher (2002) for modeling of macroeconomic factors that affect credit risk, have modeled the relationship between credit risk measurement and macroeconomic factors through regression model with the method of least squares. They used total provisions for credit loss as the independent variable so NPL with quarterly basis as the dependent variable. In this study are not taken into account the specific conditions of the borrower but it is assumed that the credit risk that threatens banks is accompanied by the macroeconomic environment in which their clients operate. In this context, without going into specific elements, there is a great interest in identifying the macroeconomic factors to grouping them into 6 main categories:

### **Cyclical indicators**

This category includes general macroeconomic indicators thought affecting the solvency of borrowers. So that GDP is expected to be negatively related to loans. During a period of economic growth, borrowers are financially better and tend to pay the loan regularly. As a result the level of problem loans will decrease.

### **Indicators of price stability**

Inflation, as an indication of price stability, is expected to have a negative correlation with loans. This happens because during inflationary periods, the real value of the payments the borrower begins to fall, which helps to settle their obligations. In the case of Albania, inflation in the studied years has been stabilized within the norms stipulated by the monetary authorities. Its low variability close to the 3% makes the solvency of borrowers to be more affected by nominal interest rate than the real interests and / or the rate of inflation.

Furthermore, referring to the fact that most of the loans is in foreign currency, we do not expect a significant effect on the domestic inflation rate of total credit quality. Credit risk is thought of negatively affected by the growth rate of monetary aggregates M1 and M3, because the higher is the amount of money in circulation, the better is expected to become the macroeconomic situation and the level of problem loans is expected to decrease.

### **Internal indicators**

Besides variables involved from Scheicher Kalirai (2002) due to the absence of many variables in this category, in the case of Albania are included 4 indicators that impact heavily on credit risk. A high level of unemployment means that more people will have difficulty in paying the debt, which will result in a large increase in loans. So expect to exist a positive correlation between the unemployment rate and the level of credit risk.

Remittances is another indicator that is supposed to have an impact on the ability of borrowers to repay the loan. Remittances make up about 10% of GDP of the state, and they represent an important source of income of Albanian households. Thus it is expected

that an increase in remittances will reduce the level of problem loans, as long as there will be more money available which will help to increase the solvency of the loan installments. According Frashëri (2007), about 6.6% of remittances are destined to repay the loan installments. On the other hand SIPA Zeager and Gedeshi (2009) only 2.7% of Albanian immigrants have been granted a loan in Albania compared with 31% who have been granted a loan in the destination country. With these records we understand that the bulk of remittances are channeled for repayment of loans and credit goes to the payment of relatives than to immigrant settlement loans.

### **Indicators of interest rates**

Interest rates as a direct borrowing costs are very important factor affecting the solvency of borrowers. Since interest rates on bonds 3, 6 and 12 months as the Euribor and Libor they are used by Albanian banks as the base for calculating the interest rate on loans granted in currency lek, euro and US dollars (profit margin is added and is specific to each bank), these indicators will be included in the equations to be tested. An increase in interest rates means higher installments payable and higher chances for the borrower (or businesses or individuals) have difficulty in repaying their loans. So we expect a positive correlation between interest rates and nonperforming loans.

### **External indicators**

This category includes external indicators that affect the economy in general and the banking system in particular. These variables are related to international trade. A decline in exports for a business whose activity is based precisely on exports means difficulty in making scheduled payments, resulting in more bad loans. Consequently, the relationship between credit risk and exports is expected to be negative.



## CHAPTER 2

### LITERATURE REVIEW

In the last decade non-performing have had a greater attention worldwide because their increasing level would lead to the eventual collapse of the banking system as a whole. According to different studies is confirmed, the cause of the bankruptcy of the banks is the quality of the assets, which is an important predictor of bank insolvency and bank financial institutions that are on the brink of bankruptcy have very high levels of nonperforming loans.

According to the studies on bad loans different analysts have tried to connect the level of problem loans directly to the two categories of factors: Macroeconomic factors and Factors with specific bank or banking nature.

There are many discussions if loans are one of the main causes of problems with economic stagnation and that any loans seen as reflecting the image of entrepreneurship that failed.

*Keeton and Morris* (1987) have conducted a study on 2.470 US bank to understand the reason for the change in the level of loan losses from one bank to another. According to them, some banks have higher losses as a result of chance, some other from weak management lending process and some others; have had the opportunity of Institutionalize diversifying portfolios, who have allowed banks to facilitate standards of lending and maintain a thorough low risk.

*Boudriga, Taktak and Defi* (1997) consider a panel of 59 countries for the period 2002-2006 in order to determine the factors that affect the credit portfolio, the potential impact of the supervisory tools and institutional environment on exposure to credit risk. The empirical results show that the presence of foreign capital, concentration in banking industry and high level of capitalization, are the main factors that reduce the level of problem loans. At the same time it is noted that the state participation in bank increases the level of problem loans. According to a study banks with capitalization level (CAR) less than the regulatory minimum balances that govern forced to comply with regulatory requirements or to rise capital or to reduce risk-weighted assets.

*Robert T. Clair* (1991) by his study examines whether there is any connection between the growing loan and credit quality. Author, to measure the quality of the loan uses two standards: (a) the ratio of lost loans against the total amount of the loan (b) The ratio of non-performing loans against total credit, as both these reports represent the probability of actual failure of Credit. The empirical results show that a rapid growth of the loan would lead to a deterioration of credit quality and loan growth aggravates the quality of credit with a one-year delay. The author results also support the fact that the rapid growth of loan portfolios will bring low-quality loan that the bank can lead to bankruptcy. Also the resources used for marketing and credit management must be balanced to prevent the conversion of loans to good loans. Seeing that the study suggests that credit growth is a determinant of credit quality banking analysts can use this information to be more effective in the process of reviewing applications for new loans. Moreover the growth of credit volume could be a "red flag" that draws attention to the need for more controls on lending quality.

*Keeton* (1999) in his study seeks to understand the relationship between the level of credit growth and the level of loan growth problems in some US states. By analyzing a relatively long period (1982-1996) the author concludes that rapid credit growth leads to higher losses due to shifting of the offer, namely the increasing desire of banks to lend.

*Fernandez de Lis, free and Saurina Martinez* (2000) in their study, analyze behavior cyclical bank lending, loan losses and provisions on loans which are considered as very

cyclical in Spain. This, according to them, shows some problems to banking supervisors and regulators.

*Fofack (2005)* investigates the main causes of non-performing loans during the economic and banking crisis that affected many countries of sub-Saharan Africa in the 1990s. As a result the authors mention that the majority of problem loans lead to uncontrolled increase of credit risk. These risks reflect the rapid accumulation of impaired loans which are driven more by macroeconomic instability and deteriorating trade conditions. According to the analysis the author used as independent variables: the, real interest rate, the growth rate of GDP per capita, rate of inflation, the real exchange rate net interest margin, return on assets(ROA) and interbank loans. While the dependent variable will be loans. The analysis shows that the growth rate of GDP, effective exchange and the real interest rate is statistically significant. More interesting is the fact that the inflation rate does not seem to be important in explaining the dynamics of the loans.

*Hess, Grimes and J.Holmes (2008)* analyze the determinants of credit losses and consider data from 32 Australian bank for a period that runs from 1980 -2005. In this study the author take as dependent variable relationship between spending impaired assets over total loans.

Independent variables are categorized in two classes:

- a. Macroeconomic factors, which include: expansion of real GDP, unemployment rate, stock index, the housing price index and the inflation rate;
- b. Banking factors: market share of credit in the system, the net interest margin, the rate of assets growth, the cost / income, profit before tax and provisions as a percentage of total assets.

According to the regression analysis the authors show that the increase in GDP and unemployment rate changes have the predicted effects on the dependent variable but after one year later. Stock index and house price index have negative coefficients and stock index has greater explanatory power than the house price index. The increased inflation coefficient has a positive sign about credit loss spending (Credit Loss Expenses) being an

important aspect but limited. Coefficients of the size of banks and the profit before provisions and taxes (EBIP) are positive and significant for the whole sample examined. While coefficients cost / income and net interest margin were negative but with some delays. Coefficients of the growth rate of assets affected by delays considered, increased simultaneous has negative coefficient, while periods of delay over 2 years coefficients have the expected effects of unwanted positive, with the growth of assets we have and increased losses on loans.

*Shijaku and Ceca (2009)* addresses the credit risk in the banking system which identifies the level of problem loans by using stress tests for credit risk in the Bank of Albania is based on stressing directly the addition of non-performing loans of the banking system and measure the effect on capital adequacy. According to statistical analysis, the dependent variable is the rate of non-performing loans and as independent variables included: the level of economic growth, changes in interest rates on foreign currency (Euribor and Libor), the interest rate on domestic exchange rates ALL / EUR and ALL / USD, and finally the level of inflation. Coefficients of the regression have expected signs and GDP growth even though small is important. Other important variables were statistically Libor interest rate and exchange rate ALL / USD, interest rate and exchange rate Euribor ALL / EUR.

*Kalluci and Kodra (2010)* study the determinants of non-performing loans in the banking system by separating them into two sub categories: business loans and loans to individuals. The study is based on quarterly data for the period from the second quarter of 2002 to the fourth quarter of 2009, and used techniques regression OLS (ordinary least squares) whereas the dependent variable obtained credit risk as measured by the ratio of non-performing loans to total loans. As independent variables they use: interest rates, inflation, unemployment rate, the exchange rate Euro / Lek, the growth rate of exports, monetary aggregates M1 and M3, the real effective exchange rate, remittances (remittances) and GDP . According to the results of business loans are influenced by interest rates of treasury bills, the real effective exchange rate, monetary aggregate M3, the growth rate of exports and GDP growth. Albanian business has a greater sensitivity to interest rate changes than

to changes in exchange rates. Individual loans are affected by interest rates of treasury bills, the exchange rate Euro / Lek and the index of rent and housing prices. Again, the impact of changing interest rates (Treasury bonds) is very large in comparison with the impact of other variables on their inability to pay.

*Espinoza and Prasad* (2010) consider loans in the Arab States of the Gulf (GCC) using a panel data from 80 banks for the period 1995 - 2008. The empirical results show how macroeconomic variables and bank-specific variables determine the level of credit problems. Macroeconomic explanatory variables include GDP growth (excluding the oil sector), stock market returns, interest rates, the growth of world trade and the VIX index (an indicator of the instability of the stock market). Specific bank variables include the size of capital, credit growth and efficiency. The authors find a strong negative correlation between real GDP (excluding oil sector) and the level of non-performing loans. At the same time the study shows that global financial market conditions have effects on bank loans. Also noted that the link between efficiency and level of problem loans is straight, but with one year later. The connection between capital and the level of problem loans is oblique showing that with the increasing levels of capital, loans will be decreased.

*P. Louzis, Vouldis and Metaxas T.* (2010) study the determinants of non-performing loans in the Greek banking system divided by categories of loans, consumer loans, and mortgage businesses. The data obtained from 9 Greek commercial banks for the period from the first quarter of 2003 to the third quarter of 2009. The authors take as dependent variable level of non-performing loans for each of 3 categories while as independent variables such as macroeconomic variables deal unemployment rate , GDP and real interest rates and bank-specific variables taken as ROA, ROE, solvency ratio, loan / deposit ratio, inefficiency, credit growth, the share of the market and the size of the bank. According to the authors empirical findings results that macroeconomic variables, in particular, GDP growth, unemployment rate and interest rates have a strong impact on the level of problem loans. Also specific variables such as performance and efficiency bank possessed a level when added additional explanation based model supporting the hypothesis that poor management of banks tends to increase the level of problem loans. Also the results show

a big difference in terms of the quantitative effects of different variables defining problem loans depending on the category of credit

*Bofondi and Ropel* (2011) consider macroeconomic factors leading credit quality in Italy for the period from the first quarter of 1990 to the second quarter of 2010. As macroeconomic developments can have different impacts on the quality of the loan depending the type of borrower authors share their analysis of individual loans and business loans. They analyze the link between non-performing loans and macroeconomic variables five categories as follows:

The general economic situation, terms of price stability, the cost of debt service, the burden of debt, real and financial prosperity, prospects for economic growth. The authors find that the loans are linked in a disproportionate manner with real GDP growth and housing prices while unemployment rate and nominal short-term interest rate are connected proportionally. An important result is that the various macroeconomic factors affects the credit quality, but with different delays. For individual loans real GDP growth and nominal short-term interest rates affect the 9 to 12 month delay, while for businesses net interest expenses reports on gross operating profits affects 6 months late. The authors conclude that monitoring of changes in the specific conditions of the businesses cycle, which have shown that they can predict future developments in credit quality, can be used as a system of early warning (Early Warning System) to alert authorities for possible banking problems.

At the conclusion of the review of the literature on the factors affecting the level of problem loans could say that there are many studies from different authors around the world on this issue. Despite that the authors have found different ways to tackle the level of non-performing loans explanation depending on macroeconomic variables and banking, results obtained from their studies have the tendency of convergence for the presence of these key link

## **2.1 Macroeconomic factors on bank profitability**

The most important factors are variable growth of GDP, which positively affects the profitability of the bank, and the effective tax rate and degree of market concentration, which have a significant negative impact on banking profitability in banks in Switzerland.

Other studies of this nature Bashir (2000), and Hassan Bashir (2003) examined the factors affecting the performance of Islamic banks. Bashir (2000) reported that ax had a negative impact that the macroeconomic situation and the development of the stock market appear positive impact on profitability.

More studies are carried out in this field in Turkey. According to the study conducted by Kaya (2002), the real interest rate, the ratio of securities to assets as well as open position against foreign currencies had a positive impact on ROE while the budget deficit of the public sector and the ratio of liquidity had a positive effect as in ROE ROA alike.

*Athanasoglou, Delis and Stakouras* (2006) analyzed the effects of a group of factors that affect the profitability of banks in Southeastern Europe (SEE) for the period 1998-2002. It was found that the concentration had a positive correlation with profitability while there was a strong correlation of inflation and an insignificant effect on GDP growth. Making a list of all the results of the studies can be concluded that generally different measurements of the costs associated with profitability negatively. While banks with high size, high concentration in the market, higher income from lending, GDP growth and the ratio of capital to total assets resulted as very important factors and related to the profitability of banks worldwide.

*Tunay and Silpar* (2006) studied the profitability of the Turkish banking sector for the period 1988-2004. They found that national income and the rate of concentration in the market had a positive impact on ROE. They also conclude that one of the macroeconomic factors that affect the bank profitability and performance was inflation.

*Revell* (1979) noted that the effect of inflation, however, depends on whether the banks' profits and other operating expenses to grow at a rate faster than inflation.

Rasiah (2010), inflation has been one of the least explored in previous studies of banking profitability. However, inflation is one factor that affects the profitability of commercial bank. Inflation has positive impact on prices which mean that if inflation increase the prices will increase too. An increase in price level will lead to increasing the interest rate of the loan leading to an increase in bank profitability. This is the positive aspect of inflation but this increase of interest tend to have negative impact on nonperforming loans since it will be more difficult for the borrower to pay the installment on time .

There are two types of interest that would affect the profitability of a bank that are of interest expense and interest income. According Rasiah (2010), interest expense and interest income affect net interest income and thus on bank profitability. When interest costs are reduced, it will result in profits for the bank

*Guru et al.* (2002) studied a quantity of 17 commercial banks in Malaysia during the period 1986-1995. The study found that a management efficient spending is one of the most important factors that explain the high levels of profitability of banks, also higher rates of interest associated with low levels of profitability as also found that the inflation rate had positive effect on the profitability of banks and their performance.



## **CHAPTER 3**

### **DATA AND METHODOLOGY**

#### **3.1 Data**

1. GDP growth (RR / GDP);
2. Level inflation (INF);
3. Unemployment rate (NRP);
4. Interest rate (INT);
5. Remittance
6. Non-performing loans (NPL)

All the data mention above are taken from Bank of Albania for a period from 2001-2015 quarterly.

#### **3.2 Methodology and Expectation**

This study is based on the description of the different facts related to the issue of problem loans, analyzing theoretically all the elements that affect them. On paper, it assumes special significance and analysis of data that are compared in different periods provide a clearer picture of trying to explain the phenomena. In this paper, information was retrieved from electronic libraries of different universities as well as international financial institutions. Another valuable sources of materials are taken from research, scientific journals, and different conferences. This study for the collection of quantitative data used different ratios of the Bank of Albania and the Institute of Statistics (INSTAT) which are

then analyzed by a computer program called E-views according to an econometric model. The data used for the construction of the econometric model in this study are for a period of 15 years and quarterly. In total we have 6 variables where one variable is dependent while 5 others are considered as independent or explanatory variables.

As representatives of the external variables are selected annual rate of GDP growth, inflation rate, unemployment, remittances and the interest rate on loans. Referring to previous studies about the impact of these factors, the growth of GDP should exert a positive impact on the profitability of bank and a negative impact on nonperforming loans. Concerning the impact of inflation on profitability, previous studies (eg, Claessens et al, 1998; Demirguc-Kunt and Huizinga, 1999) showed a positive result, while some studies show the importance of the low coefficient of the regression by explaining that perhaps because banks get higher revenues from circulation or because delays in consumer lending (Demirguc-Kunt, 1999).

The effect of interest rates on bank profits is considered by Samuelson (1945). It is shown that in general terms, banks' profits tend to rise when interest rates are rising but the opposite happens with nonperforming loans. Since when interest is rising non-performing loans tend to increase since the borrower should pay more in advance.

Short (1979) also found a positive correlation between nominal interest rates and profitability indicators.

Perry (1992) suggests that the rate at which inflation affects the profitability of the bank depends really on whether inflation expectations are fully provided. If the bank provides full rate of inflation, then this means that it can adjust accordingly interest rates in order to grow their earnings faster than their costs and thus obtain higher profits economic. Previous studies have reported a positive relationship between inflation or interest rates and long-term profitability (Li, 2007).

**GDP growth** is expected to have a positive impact on profitability because the banking sector is sensitive to the overall development of the economy. With increasing real sector, banks can successfully collect their loans and expand new. This variable has a significant and positive impact on profitability. This result is consistent with the empirical evidence of Naceur (2003) Panagiotis et al (2005) and Francis (2011).

In this context, we expect a positive relationship between the bank profitability and GDP growth, as demand for loans is increasing (decreasing). Demirguc - Kunt and Huizinga (1999) show that rapid economic growth increases profitability for a large number of countries. Consequently, movements in the general level of activity is expected to generate direct effect on bank profitability. Thus, economic growth (RGDP), which is measured by the real rate of growth of real GDP, is the hypothesis that will positively affect the bank's profitability and negatively nonperforming loans.

**Annual inflation rate:** Inflation, as an indication of price stability, is expected to have a negative correlation with loans. This happens because during inflationary periods, the real value of the payments the borrower begins to fall, which helps to settle their obligations. This brings in exchange for improved portfolio quality. In the case of Albania, inflation in the studied years has been stabilized within the norms stipulated by the monetary authorities. Its low variability close to the 3% makes the solvency of borrowers to be more affected by nominal interest rate than the real interests and / or the rate of inflation. Furthermore, referring to the fact that most of the loans is in foreign currency, we do not expect a significant effect on the domestic inflation rate of total credit quality. Credit risk is thought of negatively affected by the growth rate of monetary aggregates M1 and M3, because the higher is the amount of money in circulation, the better is expected to become the macroeconomic situation and the level of problem loans is expected to decrease.

**The real interest rate:** There is a positive relationship between interest rates and the performance of banks, bank profits grow with rising interest rates (Samuelson 1945).

In addition, the increase in real interest rates will increase the real debt burden for borrowers. This, in turn, can lower the quality of assets, prompting banks to charge a higher interest margin, in order to offset the risk. An increase in interest rates means higher installments payable and higher chances for the borrower (or businesses or individuals) have difficulty in repaying their loans. So we expect a positive correlation between interest rates and loans.

**Unemployment rate:** There is a negative relationship between unemployment rate and the performance of the bank. Bank performance decrease when unemployment rate increase because there will be less people collaborating with banks , less accounts , less services offer and this lead to an increase in the level of nonperforming loans. A high level of unemployment means that more people will have difficulty in paying the debt, which will result in a large increase in nonperforming loans. So expect to exist a positive correlation between the unemployment rate and the level of credit risk.

**Remittances:** There is a negative relationship between remittances and nonperforming loans. A decrease in the incomes coming from emigrants cause a depreciation of home currency and those people who make payments of their loans in dollar or euro so in foreign currency will have to pay more. Remittances were also one of the items that suffered the largest decline among Albania's economic indicators, impacting directly on reducing the welfare of Albanians in the country.

### **3.3 Econometric model**

NPL is devoted special attention worldwide after big increases and their uncontrolled bankruptcy would lead to the potential of the banking system as a whole and a collapse in the entire financial system. In fact some Albanian banking experts are trying to find different answers to the high level of non-performing loans in the country.

Various studies carried out by specialists of the Bank of Albania (Shijak and Ceca, 2009), credit risk in the banking system and identify the level of problem loans while Kalluci and

Hill (2010) by studying the determinants of non-performing loans in the Albanian banking system divide them into two sub categories: business loans and loans to individuals. According to many scholars the cause of bank failures is the quality of their assets, which is an important predictor of insolvency of banks and nonbank financial institutions, which on the verge of bankruptcy have very high levels of non-performing loans. This study supports and is inspired by previous studies carried out by various researchers as Khemraj and Pasha (2005), Hess, Grimes and J. Holmes (2008) and Gaurav Kumar Dash Kobra (2010), Kalluci and Hill (2010 ) Bofondi and Ropel (2011).

All these authors have studied the relationship between the dependent variable non-performing loans, as well as independent variables macroeconomic factors. In our model used as the dependent variable level of non-performing loans of the Albanian banking system for a period of starting from the first quarter of 2002 to the fourth quarter of 2015. The main reason of choosing dependent variable relates to the fact of great importance that has taken the issue of problem loans in the banking system as a result of their concerns especially the past 5 years. To characterize the concept of problem loans have used the classification criteria of the Bank of Albania, which share in, substandard loans, doubtful loans and loss loans. According to these criteria, the Bank of Albania considers every credit loans, which represents more than 90 days delay as the repayment of principal as well as interest.

### 3.4 Vector Autoregression Model (VAR)

A VAR is the extension of the autoregressive (AR) model to the case in which there is more than one variable under study. The AR model involves one dependent variable which depended only on lags of itself. A VAR has more than one dependent variable and has more than one equation. Each equation uses its explanatory variables lags of all the variables under study.

$$Y_t = \alpha_1 + \beta_1 t + \theta_{11} y_{t-1} + \dots \theta_{1p} y_{t-p} + \omega_{11} x_{t-1} + \dots + \omega_{1q} x_{t-q} + e_{1t} \quad (3.1)$$

$$X_t = \alpha_2 + \beta_2 t + \theta_{21} y_{t-1} + \dots \theta_{2p} y_{t-p} + \omega_{21} x_{t-1} + \dots + \omega_{2q} x_{t-q} + e_{2t} \quad (3.2)$$

In the first equation  $y$  depends on  $p$  lags of itself and on  $q$  lags of  $x$ . The lag lengths are  $p$  and  $q$ . They can be selected using the sequential testing method.

It is assumed that all the variables in the VAR ( $p$ ) are stationary. Estimation and testing can be carried out by using OLS. P-values or t-statistics help to examine whether individual coefficients are significant.

The reasons to use VARs are:

- It is easy to use
- It provides a framework for testing the causality between each set of variables

Economic theories or common sense help to interpret the results obtained through VAR model.

In the VAR model, the explanatory variables might influence the dependent variable, but there is no possibility that the dependent variable influences the explanatory variable.

Relating our issues the corresponding equations are:

$$\begin{aligned} \Delta NPL = & C_1 + \theta_{11}\Delta NPL_{t-1} + \theta_{12}\Delta NPL_{t-2} + \theta_{13}\Delta NPL_{t-3} + \theta_{14}\Delta NPL_{t-4} + \\ & \delta_{11}\Delta INT_{t-1} + \delta_{12}\Delta INT_{t-2} + \delta_{13}\Delta INT_{t-3} + \delta_{14}\Delta INT_{t-4} + \vartheta_{11}\Delta GDP_{t-1} + \vartheta_{12}\Delta GDP_{t-2} + \\ & \vartheta_{13}\Delta GDP_{t-3} + \vartheta_{14}\Delta GDP_{t-4} + \gamma_{11}\Delta REMIT_{t-1} + \gamma_{12}\Delta REMIT_{t-2} + \gamma_{13}\Delta REMIT_{t-3} + \\ & \gamma_{14}\Delta REMIT_{t-4} + \varphi_{11}\Delta UNEM_{t-1} + \varphi_{12}\Delta UNEM_{t-2} + \varphi_{13}\Delta UNEM_{t-3} + \\ & \varphi_{14}\Delta UNEM_{t-4} + \omega_{11}\Delta INF_{t-1} + \omega_{12}\Delta INF_{t-2} + \omega_{13}\Delta INF_{t-3} + \omega_{14}\Delta INF_{t-4} + e_1 \end{aligned} \quad (3.3)$$

$$\begin{aligned} \Delta INT = & C_2 + \theta_{21}\Delta NPL_{t-1} + \theta_{22}\Delta NPL_{t-2} + \theta_{23}\Delta NPL_{t-3} + \theta_{24}\Delta NPL_{t-4} + \\ & \delta_{21}\Delta INT_{t-1} + \delta_{22}\Delta INT_{t-2} + \delta_{23}\Delta INT_{t-3} + \delta_{24}\Delta INT_{t-4} + \vartheta_{21}\Delta GDP_{t-1} + \vartheta_{22}\Delta GDP_{t-2} + \\ & \vartheta_{23}\Delta GDP_{t-3} + \vartheta_{24}\Delta GDP_{t-4} + \gamma_{21}\Delta REMIT_{t-1} + \gamma_{22}\Delta REMIT_{t-2} + \gamma_{23}\Delta REMIT_{t-3} + \\ & \gamma_{24}\Delta REMIT_{t-4} + \varphi_{21}\Delta UNEM_{t-1} + \varphi_{22}\Delta UNEM_{t-2} + \varphi_{23}\Delta UNEM_{t-3} + \\ & \varphi_{24}\Delta UNEM_{t-4} + \omega_{21}\Delta INF_{t-1} + \omega_{22}\Delta INF_{t-2} + \omega_{23}\Delta INF_{t-3} + \omega_{24}\Delta INF_{t-4} + e_2 \end{aligned} \quad (3.4)$$

$$\begin{aligned} \Delta GDP = & C_3 + \theta_{31}\Delta NPL_{t-1} + \theta_{32}\Delta NPL_{t-2} + \theta_{33}\Delta NPL_{t-3} + \theta_{34}\Delta NPL_{t-4} + \\ & \delta_{31}\Delta INT_{t-1} + \delta_{32}\Delta INT_{t-2} + \delta_{33}\Delta INT_{t-3} + \delta_{34}\Delta INT_{t-4} + \vartheta_{31}\Delta GDP_{t-1} + \vartheta_{32}\Delta GDP_{t-2} + \\ & \vartheta_{33}\Delta GDP_{t-3} + \vartheta_{34}\Delta GDP_{t-4} + \gamma_{31}\Delta REMIT_{t-1} + \gamma_{32}\Delta REMIT_{t-2} + \gamma_{33}\Delta REMIT_{t-3} + \end{aligned}$$

$$\begin{aligned} & \gamma_{34}\Delta REMIT_{t-4} + \varphi_{31}\Delta UNEM_{t-1} + \varphi_{32}\Delta UNEM_{t-2} + \varphi_{33}\Delta UNEM_{t-3} + \\ & \varphi_{34}\Delta UNEM_{t-4} + \omega_{31}\Delta INF_{t-1} + \omega_{32}\Delta INF_{t-2} + \omega_{33}\Delta INF_{t-3} + \omega_{34}\Delta INF_{t-4} + e_3 \end{aligned} \quad (3.5)$$

$$\begin{aligned} \Delta REMIT = & C_4 + \theta_{41}\Delta NPL_{t-1} + \theta_{42}\Delta NPL_{t-2} + \theta_{43}\Delta NPL_{t-3} + \theta_{44}\Delta NPL_{t-4} + \\ & \delta_{41}\Delta INT_{t-1} + \delta_{42}\Delta INT_{t-2} + \delta_{43}\Delta INT_{t-3} + \delta_{44}\Delta INT_{t-4} + \vartheta_{41}\Delta GDP_{t-1} + \vartheta_{42}\Delta GDP_{t-2} + \\ & \vartheta_{43}\Delta GDP_{t-3} + \vartheta_{44}\Delta GDP_{t-4} + \gamma_{41}\Delta REMIT_{t-1} + \gamma_{42}\Delta REMIT_{t-2} + \gamma_{43}\Delta REMIT_{t-3} + \\ & \gamma_{44}\Delta REMIT_{t-4} + \varphi_{41}\Delta UNEM_{t-1} + \varphi_{42}\Delta UNEM_{t-2} + \varphi_{43}\Delta UNEM_{t-3} + \\ & \varphi_{44}\Delta UNEM_{t-4} + \omega_{41}\Delta INF_{t-1} + \omega_{42}\Delta INF_{t-2} + \omega_{43}\Delta INF_{t-3} + \omega_{44}\Delta INF_{t-4} + e_4 \end{aligned} \quad (3.6)$$

$$\begin{aligned} \Delta UNEMP = & C_5 + \theta_{51}\Delta NPL_{t-1} + \theta_{52}\Delta NPL_{t-2} + \theta_{53}\Delta NPL_{t-3} + \theta_{54}\Delta NPL_{t-4} + \\ & \delta_{51}\Delta INT_{t-1} + \delta_{52}\Delta INT_{t-2} + \delta_{53}\Delta INT_{t-3} + \delta_{54}\Delta INT_{t-4} + \vartheta_{51}\Delta GDP_{t-1} + \vartheta_{52}\Delta GDP_{t-2} + \\ & \vartheta_{53}\Delta GDP_{t-3} + \vartheta_{54}\Delta GDP_{t-4} + \gamma_{51}\Delta REMIT_{t-1} + \gamma_{52}\Delta REMIT_{t-2} + \gamma_{53}\Delta REMIT_{t-3} + \\ & \gamma_{54}\Delta REMIT_{t-4} + \varphi_{51}\Delta UNEM_{t-1} + \varphi_{52}\Delta UNEM_{t-2} + \varphi_{53}\Delta UNEM_{t-3} + \\ & \varphi_{54}\Delta UNEM_{t-4} + \omega_{51}\Delta INF_{t-1} + \omega_{52}\Delta INF_{t-2} + \omega_{53}\Delta INF_{t-3} + \omega_{54}\Delta INF_{t-4} + e_5 \end{aligned} \quad (3.7)$$

$$\begin{aligned} \Delta INF = & C_6 + \theta_{61}\Delta NPL_{t-1} + \theta_{62}\Delta NPL_{t-2} + \theta_{63}\Delta NPL_{t-3} + \theta_{64}\Delta NPL_{t-4} + \\ & \delta_{61}\Delta INT_{t-1} + \delta_{62}\Delta INT_{t-2} + \delta_{63}\Delta INT_{t-3} + \delta_{64}\Delta INT_{t-4} + \vartheta_{61}\Delta GDP_{t-1} + \vartheta_{62}\Delta GDP_{t-2} + \\ & \vartheta_{63}\Delta GDP_{t-3} + \vartheta_{64}\Delta GDP_{t-4} + \gamma_{61}\Delta REMIT_{t-1} + \gamma_{62}\Delta REMIT_{t-2} + \gamma_{63}\Delta REMIT_{t-3} + \\ & \gamma_{64}\Delta REMIT_{t-4} + \varphi_{61}\Delta UNEM_{t-1} + \varphi_{62}\Delta UNEM_{t-2} + \varphi_{63}\Delta UNEM_{t-3} + \\ & \varphi_{64}\Delta UNEM_{t-4} + \omega_{61}\Delta INF_{t-1} + \omega_{62}\Delta INF_{t-2} + \omega_{63}\Delta INF_{t-3} + \omega_{64}\Delta INF_{t-4} + e_6 \end{aligned} \quad (3.8)$$

## CHAPTER 4

### EMPIRICAL RESULTS

#### 4.1 Hypothesis and research questions

Following hypothesis are tested by employing Vector Autoregression Model based on the research objectives of the study

1.  $H_0$ , GDP growth has no impact on the level of non-performing loans;
2.  $H_0$ , The inflation rate has no effect on the level of non-performing loans;
3.  $H_0$ , The unemployment rate has no effect on the level of non-performing loans;
4.  $H_0$ , The interest rate does not affect the level of non-performing loans;
5.  $H_0$ , Remittances has no impact on the level of non-performing loans;

Hypothesis 1, the link between growth of GDP and the level of bad loans is expected theoretically to be an inverse relationship. Indeed GDP growth increases the income of a country in general. Revenue growth means that both businesses and individuals have more income available, which means that now they are able to repay their loans, and as a result is expected to be a decline in the level of problem loans (Fernández de Lis, free and Saurina Martínez 2000) (Khemraj and Pasha 2005) (Hess, Grimes and J. Holmes, 2008). Hypothesis 2, theoretically expected to have inverse relationship between the inflation rate and the level of non-performing loans and in fact an increase in inflation would



lead to a decrease in the real value of the principal remains unpaid, and the borrower will have more opportunities to pay their loan installments which would translate into a lower level of problem loans (Kobra Gaurav Kumar Dash and 2010).

Hypothesis 3, theoretically expected to have positive relationship between the unemployment rate and the level of non-performing loans, and in fact an increase in unemployment will lead to a decrease in total revenues of a country which would be translated later a decrease in the solvency of the credit received, and as a result in a further increase in the level of non-performing loans (P. Louzis, T. Vouldis and Metaxas 2010) (Bofondi and Ropel (2011).

Hypothesis 4, theoretically expected to have positive relationship between the interest rate on the loan and the level of non-performing loans. Indeed, raising the interest rate of the loan would lead to an increase in installment loans, and as a result the borrower would have been even more difficult to pay installments of their friends already higher than before the increase rate interest (Fofack 2005) (Shijak and Ceca 2009).

Hypothesis 5, theoretically expected to have a negative relationship between remittances and nonperforming loans. If the remittances are decreasing this means that less income from the emigrants and this lead to home currency depreciation. This will have an significant impact on people who make payments of their loan in foreign currency which in such conditions they will pay more on installment than before

## 4.2 Graphical Analysis



FIGURE 4.1 Growth in GDP

GDP includes all current products and services intended for the market as well as those produced for own consumption of all resident units operating in the territory of a state. As we see from the graph the GDP growth has not been constant of all the time. Starting from 2002 we can see that the value of GDP growth has been decreased and then on 2003 it has reached the maximum point of increase at 8 %. From 2004 to 2009 from the graph we can see that the growth rate has not been stable with up and downs while the last 5 years from 2009 to 2014 observed a slowdown also influenced by the effects of the global financial crisis on the economy of our country

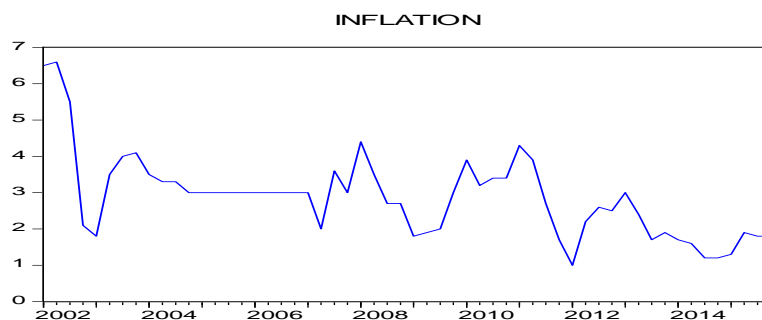
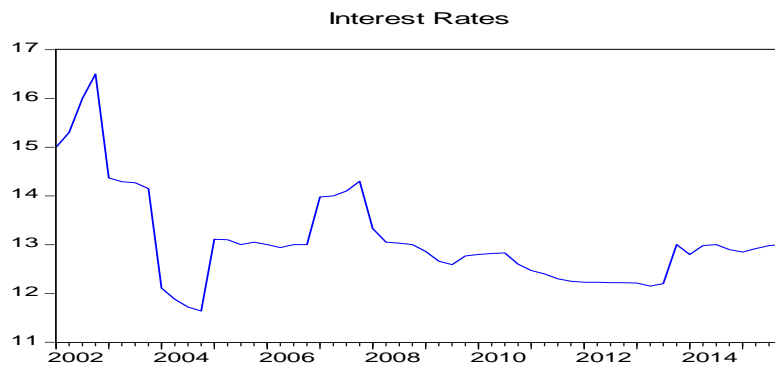


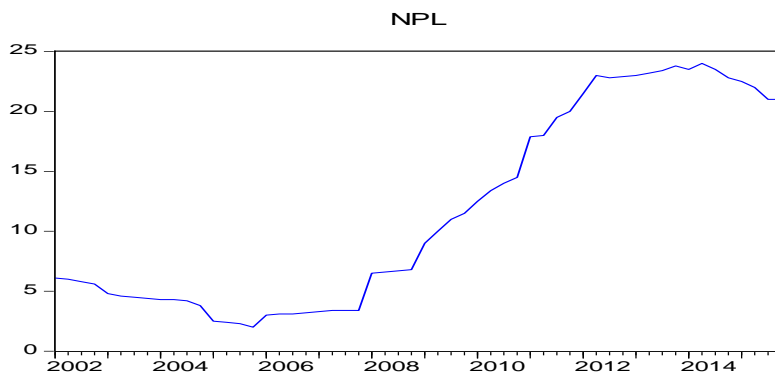
FIGURE 4.2 Inflation over years

Bank of Albania has decided to target an inflation rate of  $3\% \pm 1\%$  in order to ensure sustainable economic growth, without major fluctuations in the general price level. During the years 2000-2005 there was a downward trend in the annual rate of inflation (except for 2003), while starting on 2006 and beyond index has been steadily increasing (except 2008). Considering the study inflation rate has reached the maximum point in the second quarter of 2002 with 6.6 % while minimum point in 2012 with 1 % . From the graph the inflation rate has not been stable through all these years. Inflation in the studied years has been stabilized within the norms stipulated by the monetary authorities. Its low variability close to the 3% makes the solvency of borrowers to be more affected by nominal interest rate than the real interests and / or the rate of inflation.



**FIGURE 4.3 Interest Rates over years**

The interest rate is the average rate of interest loans granted by commercial banks for all the years taken in consideration. From the graph the average rate or interest on loans from 2002 to 2006 has decreased gradually reach the lowest point in 2004 with 11.64 %. This phenomenon happened because commercial banks decreased the norm of interest rate due to increase the competition between banks. According to the graph in 2007 the interest rate has been increased reaching 14.2 % and after it has suffered a gradual decline going from 14% in 2008 to 12.2 % in 2013.



**FIGURE 4.4 NPL over years**

According to the graph we are going to analyze the NPL situation focused on two period .In the first period 2002-2008 the average rate of nonperforming loans is 4% and has been almost stable. In the second period 2008-2015 the average rate of nonperforming loans is

15.2 % where we observe a progressive increase reaches its maximum point in the first quarter of 2014 to 23.8%.

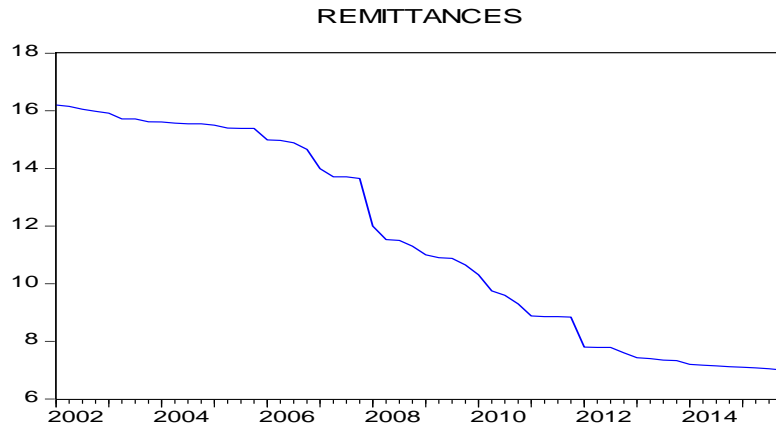


FIGURE 4.5 Remittances over years

Remittances in Albania are reported by Bank of Albania. Referring the graph remittances reached the maximum point in 2002 by 16.5 % and until 2006 the remittances rate has been stable. Due to a large number of returning emigrants in 2008 the remittances starts to decline over years from 12 % in 2008 reaching the minimum point on first quarter 2015 by 7 %.

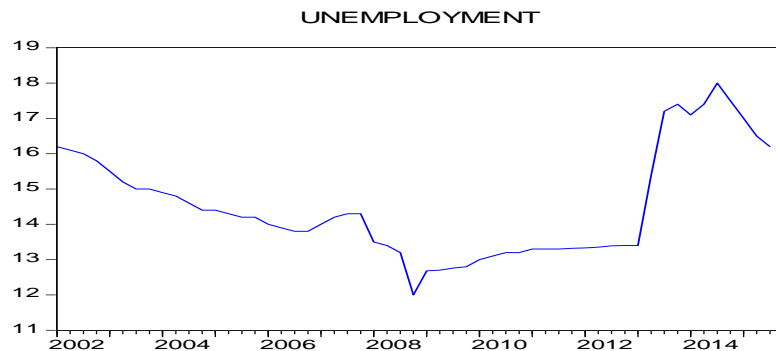


FIGURE 4.6 Unemployment over years

During the study period the unemployment rate has been almost stable from 2002 to 2007 with an average rate of 15.2 %. According to the graph, from 14.3 % at the end 2007, in

the fourth quarter of 2009, the unemployment rate went down to 12 % reaching minimum point through all these years. During a sustained period 2009-2012 unemployment in Albania peaked the maximum point in the first quarter of 2014 with 17.4 %.

### 4.3 Unit Root Test Result

TABLE 4.1 Unit Root Test Result table

Variable	ADF at first difference
GDP	-7.5003
Interest Rate	-3.49612
Inflation	-6.70695
Unemployment	-5.27759
Remittance	-6.7772
NPL	-6.11451

Since we are dealing with time series data, it is supposed that the data follow a specific trend, meaning that they are not revolving around the mean. After checking the data at levels it was found out that all the data have unit root at 5% significance level in levels form; therefore it is required to take the first difference of them, in order to make the data revolve around the mean and so that the VAR analysis can be used. After taking the first differences of the data, it is observed that based on the Augmented Dickey Fuller test the following coefficients are generated. Given that the critical value at 5% level is -2.9, it can be concluded that the null hypothesis of the existence of unit root is rejected at first difference. Therefore we can proceed with the VAR analysis at first difference of data.

#### 4.4 VAR analysis result

TABLE 4.2 VAR analysis result table

Variable	Lag 1	Lag 2	Lag 3	Lag 4
DNPL	0.056639 [0.35913]	0.064042 [0.39948]	0.204779 [1.23898]	-0.11677 [-0.67202]
DGDP	-0.02048 [-0.18167]	-0.16367 [-1.42533]	0.047452 [0.42825]	0.169106 [1.65218]
DINF	0.034569 [0.55048]	0.085427 [1.47971]	-0.09027 [-1.48842]	0.097157 [1.68696]
DINT	0.49052 [1.14200]	0.41573 [0.98580]	0.48373 [1.09811]	1.790964 [4.11562]*
DREMIT	-0.63514 [-0.91289]	0.300316 [0.39731]	0.262008 [0.34487]	-2.1011 [-2.71179]*
DUNEMP	-0.01971 [-0.03165]	0.615938 [0.88128]	-1.39258 [-2.13123]*	-0.18581 [-0.31219]

Note: \* indicates significant at 5% significance level

Four time lags are considered for the model and therefore the impact of the data on current NPL is taken into consideration for four prior periods (that makes up one year in total). The 5% critical value is taken as critical value ( $\pm 1.96$ ) therefore all the t-statistics values that are higher than this value, show the significance of the variables.

First of all the NPL values in the previous periods do not have a significant impact in the current value of NPL. Moving on, it is found out that the GDP doesn't have a significant impact on NPL values for 4 time lags. Only at lag four it is observed a low significant near to the 10% level, but it doesn't pass that level; therefore it is not significant. Inflation rate is found to have a significant positive impact on the NPL at lag 4 only at 10% level, meaning that any increase in inflation four periods before, is likely going to increase the current value of the NPL, which is actually also consistent with the theory. The next variable, which is the interest rate, has a strong positive effect on the non-performing loans

at lag 4. This is also consistent with the literature, since any increase in the interest rates is likely going to impact positively the NPL. The level of remittances have a negative and strong impact on the NPL at the lag 4, which means that as the level of remittances is reduced, the NPL increase, which is again consistent with theory. Lastly the unemployment rate is expected to have a negative impact on the current NPL 3 lags before. This makes no sense from the observations in the literature, since unemployment rate is expected to affect positively the NPL's. An explanation for this non sense correlation is the change of government in 2005 and 2013. After 2005, it is seen a sharp decrease in unemployment rate, which might be informal. While after 2013, because of the informality reform, all the workers had to be registered and therefore this caused a sharp increase in unemployment rate. As a conclusion, informality plays an important role in this nonsense relationship among them.

As a summary, we can conclude that the model is significant in total, showing especially a significant impact of interest rate, and remittance in the NPL; while GDP is not significant, that shows it doesn't have a strong impact in NPL; on the other hand the negative effect of unemployment rate is explained by informality.

## **CHAPTER 5**

### **CONCLUSION**

#### **5.1 Overall conclusion**

Throughout this study we made a detailed presentation of the matters described extensively in the world literature on numerous studies with specific bank connection macro factors and profitability of commercial banks. Considering the fact that in Albanian literature are very few comprehensive studies that have analyzed precisely this connection, it was necessary and with special attention to such a detailed review of the world literature. These studies gave us a great assistance for the first study and assess the key determinants of profitability for Albanian banks as well as to better understand the connection between credit quality factors and non-performing loans.

Firstly it is created an overview of the main theories that address the profitability of commercial banks, from the classic ones to the modern theories. It continued further by browsing the literature regarding the determinants of bank profitability. From the studies we can conclude that the role of the bank remains at the center of the financial system of a country, where its efficiency significantly affect the stability in the economy and financial system. Consequently, we can say without a doubt that the banking system is quite good representatives of our financial system, playing its role very important in economic growth and financial economic stability of the country. From an in-depth analysis of the banking system was observed that segment of the preferred lending by banks were businesses, about 63% of total loans granted, where most credited appear



trade, manufacturing industry and construction, while lending to agriculture remains still limited and modest figure that requires special attention nowadays. Another important conclusion is that if we refer to banks by the groups to which they belong, have noted that the index of non-performing loans is greater for G2 banks in all years. From this we can say that the banks of G1 are more cautious about loans granted, while in terms of banks G3 can say that they have more experience in the system and it has helped to follow all procedures necessary to reduce this indicator and properly managing this phenomenon because of the advantage that gives the ownership of assets higher than the other two groups. During this chapter focused more on the study of relationship non-performing loans- macroeconomic factor to the study of 16 commercial banks for the period 2001-2015. Through this study we tried somehow to test the main hypothesis, a link between NPL and all these elements taken into consideration and then to identify the strength of the connection between them. The purpose of vector autoregression analysis model was to identify the impact of each macroeconomic factor on nonperforming loans. The analysis was based on secondary data obtained from official sources from the association of banks, the Bank of Albania and the annual reports of banks in the study, for a period of 15 years (2001-2015). The results showed that all the studied variables affect in several different ways the nonperforming loans some in reduction and some in growth but the most significant impact was from Interest rate which has a positive impact on nonperforming loans. On the other hand another factors that has a significant impact were, remittance and unemployment. It is important to be mentioned that considering the results of the study the impact of macroeconomics factors on nonperforming loans starts after the fourth quarter. Through our research on the profitability of the banking sector in Albania, we confirmed once again as the literature suggests, the statistical significance of the high rate of non-performing loans as well as reserves of provisions, of course, with a negative impact on profitability. In conclusion, the results obtained and the study conducted show that our overall banking system for the period 2005-2012 was characterized by more volatility in terms of performance, effective management of risks as well as issues related to the unreturned loans. These problems have led to sharp reduction in profitability indexes for each bank in particular, according to the group to which they belong as well as the entire banking system.

## 5.2 Recommendation

- Banks should ensure that have consistently informed on the progress of portfolio lending and normally for the share in the overall portfolio in order to be ready to take appropriate measures to deal with a difficult situation.
- Bank executives should have detailed information on costs as well as control strategies to keep them in a long time. Applying these individual strategies with low cost, banks will be able to achieve advantages in respect of profitability indicators and their performance.
- From our study turned out that the factors of risk and credit quality had a significant impact on profitability, the management team of credit risk should be responsible for the following actions that will lead to higher scores and performance best:
  - Participation broader planning and management of the loan portfolio,
  - Qualification and recruitment of persons with high experience in this field and risk management in Central Directorate
  - The growth of technology in processing database for the loan portfolio as well as to improve communication and create a rapid bridge link between the exposure to risk and its management and control in the fastest possible time.
- The analysis led to the conclusion that the banking market generally dominated by a few large banks that play the role of leader it is necessary to make analysis even more depth to this market. The authorities, which have the possibility of making the data more complete and detailed, should assess the possibility of abuse of a dominant position of these banks.
- Encourage reduction of prices relative to financial services and increase the productivity of the banking system as a whole. It is necessary expansion and improvement of self-regulation of the banking sector, particularly in terms of improving risk management processes, standards of ethics, fair competition and consumer protection.

- Although it seems as the banking system is well capitalized and able to withstand significant shock to the economic factors which impair credit quality for individual banks may be needed additional capital depending on the situations presented.
- For new loans, it is necessary to have a better distribution sector and a more reasonable balance between public and private projects, among customers representing business or household, between the forms of lending in domestic or foreign currency, etc. orienting lending in order to reduce exposure to risk. For example it is believed to have enough space to commercial banks depending on the size of assets and that they have opportunities, support more lending to small and medium enterprises and provide greater funding opportunities in ALL.
- Relations between the national supervisory authorities and foreign supervisory authorities. This means that they need to learn more from past practices and experiences of other countries and to improve their methodology for identifying, assessing, monitoring and forecasting of risk in one hand and effectiveness of banks on the other.
- Observing carefully the political and economic situation, and taking precautions, making banks more vigilant and aware of the delicate situation that was passed. Banks should use their labor and capital more efficiently and also continuously improve their technology operations.
- Banks should diversify their investments more and enrich their portfolios to minimize risk and increase revenue and improve profitability indicators.
- Banks should fully reflect the size of non-performing loans and create reserves for loan losses risk. In the portfolio of loans, banks must identify customers with temporary problems and surmountable, and to set up policies that provide support in exchange for additional elements that hedge the bank against the risk of these loans in the future. For customers who value a low possibility of payment of the tax credit, banks should firmly follow the legal procedures for the execution of guarantees and other forms of collateral in order to recover a greater amount of the loan.
- Increasing the capacity of banks to independently manage all the risks they face in their operations and the implementation of high standards for a management

culture. This requires creating the necessary base of knowledge that should be the banks to improve credit quality and to address their problems. Also they should train their employees about risk management and ways of measuring it.

- We think that in the future could use some additional macroeconomic data which combined with these factors that we have included in this study could give us a clearer picture of the impact of each factor on the level of profitability. Another recommendation for further research would also involve further levels executives of these banks, the results of our study in order to implement techniques and policies even more sophisticated for the successful management techniques appropriate management for profitability levels satisfactory. The subject of further studies would be the inclusion of all other risks and to test for any impact that will have on profitability.

### **5.3 Implications**

As representatives of the external variables are selected annual rate of GDP growth, inflation rate, unemployment, remittances and the interest rate on loans. Referring to previous studies about the impact of these factors, the growth of GDP should exert a positive impact on the profitability of bank. With increasing real sector, banks can successfully collect their loans and expand new. This variable has a significant and positive impact on profitability. This sign is explained by the fact that more GDP growth better financially inhabitants of a country in repayment of loans or other debts. Taking in consideration that the impact of GDP growth is not as high as might be the impact of some other macroeconomic factors that are confirmed in our model.

Concerning the impact of inflation on profitability, previous studies showed a positive result, while some studies show the importance of the low coefficient of the regression by explaining that perhaps because banks get higher revenues from circulation or because delays in consumer lending. High inflation is associated with higher costs and higher income. If a bank's earnings grow faster than its costs, inflation is expected to exert a positive effect on profitability. On the other hand, a negative coefficient is expected when

its costs grow faster than its revenue. Inflation rate is found to have a significant positive impact on the NPL in our study, meaning that any increase in inflation is likely going to increase the current value of the NPL, which is actually also consistent with the theory.

Referring to previous studies, there is a positive relationship between interest rates and the performance of banks, bank profits grow with rising interest rates. It is shown that in general terms, banks' profits tend to rise when interest rates are rising but the opposite happens with nonperforming loans. Since when interest are rising non-performing loans tend to increase since the borrower should pay more in advance. Refer to the econometric model coefficients are observing this variable presented statistically significant.

As the model suggests our expectations turned out to be wrong for the variables of unemployment rate. The unemployment rate is expected to have a negative impact on the current NPL. This makes no sense from the observations in the literature, since unemployment rate is expected to affect positively the NPL's. An explanation for this non sense correlation is the change of government in 2005 and 2013. After 2005, it is seen a sharp decrease in unemployment rate, which might be informal. While after 2013, because of the informality reform, all the workers had to be registered and therefore this caused a sharp increase in unemployment rate. As a conclusion, informality plays an important role in this nonsense relationship among them.

Referring previous studies the relation between remittances and the level of problem loans is negative. The score is based on the performance of the remittance rate during the study period where noted that from 2001 to 2015 the remittance rate has decreased by nearly 50%.

## **5.4 Limitations of the study**

### **Limitations in the data source**

As this study is based primarily on quantitative studies, and all data are secondary data which are powered by a database in the central bank, the Banking Association and the Annual Reports of banks taken into consideration, therefore, it could be a possible bias

from the data source, as described in section restriction above in connection with the database. The lack of primary data issued by banks (impossible) can be viewed as a potential limitation of the model.

Difficulties in finding information about loans and methods of measurement and evaluation of credit risk of commercial banks. These relate primarily to the fact that banks are confidential information and do not wish to make public.

### **Other restrictions**

This research is mainly limited to identifying the relationship between credit risk and profitability in some commercial banks of the second level in Albania. So other risks discussed in the Basel agreements are not addressed in this study (ie not taking into account their effect on the profitability of banks).

### **5.5 Further studies**

This study tried to prove the existence of the relationship between macroeconomic factors and the level of nonperforming loans. Of course it cannot say that this is a comprehensive study of where to pretend that there is no room for further suggestions. Referring to the limitations of the study mentioned above propose these areas for further study:

We think that in the future could use some additional macroeconomic data which combined with these factors that we have included in this study could give us a clearer picture of the impact of each factor on the level of nonperforming loans. According to this logic we should say that there are other variables, which are not included in this study may have an impact on the level of problem loans.

The subject of further studies would be the inclusion of all other risks not only the credit risk and to test for any impact that will have on profitability.

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