Impact of credit risk and exchange rate risk on the performance of commercial banks in Albania during the period 2005-2015

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Abstract

This study analyzes the impact of credit risk and exchange rate risk on the performance of Albanian commercial banks banking during the period 2005-2015. Two important variables related to bank profitability (ROE) will be analyzed, such as credit risk and exchange rate risk. Through this analysis, will be studied the impact of each of these variables on the profitability of Albanian banks. Based on the analyze it is expected that credit risk will have an impact on the performance of commercial banks in opposition to exchange rate risk, which is expected to be a trivial variable. The study is based on an empirical analyze with qualitative and quantitative data. This study will contribute to identifying the factors that affect the profitability of the banking system in Albania and important conclusions will be drawn in how commercial banks should manage these risks more efficiently. The recommendations arising from this work will serve to young researchers in the academic and professional field. The paper also opens a new way of discussing about instruments and risk management in the Albanian banking system. Ultimately, the most important independent variables will be identified and introduced, affecting the profitability of Albanian commercial banks.

Key Words: *ROE, Exchange Rate Risk, Credit Risk, Bank performance, Albania.*

1. Introduction

In today's business risk plays a critical role. Almost for each business decision is required that managers and executives balance the risk and return. The effective management of business risk is essential for the success of the company. In the banking system, the risk management takes a special importance, where regulators are responsible for the protection against failures of the banking system and the economy. One of the main risks which plays an important role in the profitability of commercial banks is the credit risk.

The importance of foreign exchange exposure increased shortly after 1973 as the world moved towards a flexible exchange rate system. While banks faced currency risks prior to that time as there were significant deviations from purchasing power parity, foreign exchange risk became explicitly and nominally much more important after 1973.

Exposure to foreign risk can arise when the domestic currency values of assets, liabilities and cash flows denominated in a foreign currency are subject to change due to exchange rate changes (Ahmed, L. 2015). Commercial banks, actively deal in foreign currencies holding assets and liabilities in foreign denominated currencies, are continuously exposed to Foreign Exchange Risk. Foreign Exchange Risk of a commercial bank comes from its very trade and non-trade services.

An extreme risk of exchange rate was evident in 1997, when the monetary crisis in Asia occurred. The crisis began on July 2, when Thai Baht (Korean currency) fell approximately 50% of the value relatively to the dollar, which led to the decline of other non-Asian currencies and affected also the currencies even in other non-Asian countries. On 20 November 1997 approximately 5 months after the first currency devaluation of South Korea, the Korean currency depreciated by 10% relatively to the dollar. As a result of these currency shocks were affected the proceeds of some US financial institutions. For example, in November 1997 Chase Manhattan Corp. announced a loss of 160 million dollars. Recently, the only dealer in all firs Bank covered a loss of 211 million dollars from the trading of foreign currency. After 5 years in which these losses were hidden so successfully, these activities were discovered in 2002. The ethical dilemma box found the trading of foreign currency illegally by some traders of FX. As an attempt to control the interest rate risk, in February 2004, the most important European countries pushed USA for a more aggressive campaign to stabilize the dollar's decline. Efforts to mitigate the decline of the dollar was initiated by Japan and European countries, while the decline of the dollar undermine the economic downturn in these countries. Pg. 183

A number of academic studies have addressed banks and foreign exchange exposure. For example, Bracker et al (2009) identified the change in the value of the U.S. dollar as one of the six primary sources of bank risk. Bracker's study focus

on the sensitivity of bank stock returns to various risk factors. The findings were not consistent however with some time periods generating positive relationships and other generating negative relationships between bank holding company returns and exchange rates. However, their study did identify foreign exchange risk as significant overall.

According to (Ahmed, L. 2015), the study found that foreign exchange exposure has negative effect on the performance of listed commercial banks in Kenya. The study recommended that regulators who include Central Bank of Kenya to ensure stable exchange rate environment and the management of commercial banks in Kenya to continue the improvement of the foreign exchange exposure management techniques.

The exposure towards changing exchange rates of foreign currencies is the measure in which monetary flows, derived from transactions in foreign currency, are sensible to the changing of exchange rates of that currency. Economical units, based on the demand and supply for foreign currency, are divided in four categories: exporters, importers, foreign investors and speculators (Salko, Dhuci & Kola 2010).

Therefore to achieve the purpose of this paper we have chosen as a measure of exchange rate risk the net open position in the entire Albanian banking system. Based on literature we can define net open position as follows:

Sum of all the Net Asset positions & Net Liability positions is known as Net Open Position or Net Foreign Currency Exposure. "Net Foreign Currency Exposure" gives the information about the Foreign Exchange Risk that has been assumed by the bank at that point of time. This figure represents the unhedged position of bank in all the foreign currencies. A negative figure shows Net Short Position whereas positive figure shows Net Open Position.

Any un hedged position in a particular currency gives rise to foreign exchange risk and such a position is said to be Open Position in that particular currency. If a bank has sold more foreign currency than it has purchased, it is said to be Net Short in that currency, alternatively if it has purchased more foreign currency than it has purchased than it is in Net Long position. Both of these positions are exposed to risk as the foreign currency may fall in value as compared to local or home currency and becomes a reason for substantial loss for the bank if it is in Net Long position or the foreign currency may rise in value and cause losses if the bank is Net Short in that currency. Long Position is also known as overbought or Net Asset Position and Short Position is also known as Net Liability or Oversold Position. Sum of all the Net Asset positions & Net Liability positions is known as Net Open Position or Net Foreign Currency Exposure. "Net Foreign Currency Exposure" gives the information about the Foreign Exchange Risk that has been assumed by the bank at that point of time. This figure represents the unhedged

position of bank in all the foreign currencies. A negative figure shows Net Short Position whereas positive figure shows Net Open Position.

2. Definition of credit risk

The main risk faced by the banks is credit risk, which is defined as: "The potential that a borrower will fail to meet its obligations (principal, interests, commissions), on time or in full conformity under the contractual credit terms". Banks are required by law to maintain the account of Loan Loss Reserves to cover these loans. The credit risk arises from the potential that a debtor or unwilling lacks the desire to pay its obligations or its ability to pay the obligations is deteriorated resulting in an economic loss for the bank. The loss could be the entire amount of the loan or the partial amount of the loan granted to the borrower.

The loss results from a reduction in the portfolio value as a result of actual or perceived deterioration of quality. The real risk from credit is the deviation of portfolio performance from the expected value. The credit risk is also the risk of deterioration of the financial position of the issuer of securities (stocks, bonds). The credit risk comes from loan agreements of a bank with individuals, corporations, financial institutions or state. For most banks loans are the most largest and most visible resource of credit risk, however, credit risk derives from other banking activities: on and off balance sheet items. Banks are facing credit risk in various financial instruments including: bank receipts, interbank transactions, exchange rate transactions, "Future" swaps, options contracts.

The credit risk can be categorized based on the reasons of failure. For example the failure may be due to the state in which the bank has exposure or as a result of problems in the performance and completion of the transactions. Not necessarily credit risk happens alone. The same sources that expose the institution to credit risk, can also expose it to other risks, for example a bad portfolio shows also the liquidity problem. The Bank should consider the relationship between the credit risk and other risks. The bank should identify, measure, monitor and control the credit risk related to its activities (for all portfolio, transactions and individual loans), and determine capital adequacy against this risk and if it is sufficiently compensated.

The main objective of the Credit Risk Management is to maximize the rate of return adjusted by risk keeping an acceptable level of exposure against credit risk. The risk must be managed at the level of "Connected Debtors".

2.1-The components of credit risk management.

The effective management of credit risk is essential for long-term success of any banking organization. The exposure to this risk continues to be the source of

problems of banks worldwide, their supervisors should be able to extract valuable lessons from past experience. Regardless the fact that the management practices of credit risk may vary among banks, depending on the nature, complexity of activities of loan etc., the risk management structure of the loan will be similar.

2.1.1-The structure of credit risk management

Board and senior management

It is the responsibility of the bank's board to approve key policies and strategies related to credit risk and its management, which should be based on the basic strategy of the bank. The strategy should be reviewed by the board, preferably once a year.

The strategies and policies must:

a. Describe the bank's general tolerance against credit risk.
b. Ensure that the overall exposure against credit risk is kept at prudential levels and consistent to the capital.
c. Ensure that senior management and individuals responsible for credit risk management possess the skills and knowledge to perform successful risk management functions.

The primary objective of the bank's credit strategy is to determine the bank's desire for risk. Once determined the risk acceptance level, the bank develops plans to optimize the return keeping the credit risk within predetermined levels. The credit risk strategy should explain:

a. The bank plans to grant loans based on different client segments, products, economic sectors, geographical location, currency and credit terms.
b. The target market, the preferred level of diversification and concentration.
c. Strategy of prices.

The strategy should take into account consistently the country's economic cycles and to change them according to the composition and quality of the loan portfolio. On the other hand, the strategy should be sustainable in long terms.

The senior management creates and develops policies and procedures for the administration of loans and gets approval for them from the board of directors and is responsible for their effective implementation. Policies and procedures should be clear and communicated to all hierarchical levels and serve as a guide for staff on the types of lending including corporations, SMEs, consumers, agribusiness etc..

Organizational structure

The organizational structure should be consistent with the bank's size, complexity and diversification of its activities. The structure supports the proper execution of credit risk management and control processes.

Each bank creates the Management Committee of the Credit Risk which is responsible for implementing policies and procedures approved by the board, establishing acceptable levels of credit risk that the bank faces. Monitors credit risk, recommends the board for clear policies on standards, sets the responsibilities and powers of approving levels on credit exposures, standards for collateral, mechanisms to review the loans, risk concentration, risk monitoring and assessment, prices of loans, provisions, rules and compliance with laws.

Banks should establish the Department of Credit Risk Management, which ensures that the undertaken risk is within the limits established by the Committee of Credit Risk Management, ensures that the business line is consistent with the risk parameters. They are responsible for providing adequate provisions.

Systems and procedures

Origination of Loan: Banks must operate within well-defined criteria for new loans and the existing ones. Loans must be granted in accordance with the strategy and within target markets. Banks should ensure that the loan is used according to the purpose of the borrower financing. It should not rely solely on the collateral for the loan granting, but the primary focus should be the ability to pay and the client reputation in the market.

The Bank can reduce the risk through diversification (business loans to various industries or borrowers with different locations), but can not be completely eliminated because a part of the risk results from the systematic risk. Credit risk is reduced through careful credit analysis, risk analysis, asking for collateral to cover the loan, the financing of existing clients to avoid negative selections.

Setting limits: An important element of risk management is the creation of exposure limits to one borrower and group of connected clients.

The size of the limits should be based on the force of the borrower's loan, the economic conditions and the risk tolerance. Limits are set on products, various activities, for specific industries, economic sectors or geographic regions to avoid the concentration of risk.

Loan Administration: Among the functions of loan administration are the completion of documentation in accordance with the approval terms, loan disbursement, loan monitoring, loan repayment, record-keeping, storage in the vault of the guarantee and collateral documents.

Credit Risk Measurement: The Credit risk measurement is very important in

its management. Most bankruptcies of banks have come as a result of the failure of the loan portfolio. Banks should establish a credit assessment framework for all types of activities. The assessment should include the business risk (industry characteristics, competitive position, etc.), the Financial risk (financial conditions, profitability, capital structure, etc.).

Internal Risk Rating: The credit risk rating is a summary of the indicators of an individual loan exposure to the bank. An internal rating system categorizes all loans in different classes based on the credit quality indicators. A well-structured credit rating serves as an important tool to monitor and control the risk of individual loans, the loan portfolio of the bank, the terms and prices of loans, frequency of monitoring, analysis of deterioration of loans and the precise calculation of the future loans provisions.

Credit Risk Monitoring and Control: Monitoring of credit risk refers to the continuous monitoring of individual loans, including off-balance sheet exposures of all debtors and the credit portfolio of the bank. The creation of an efficient and effective credit monitoring system would help senior management to monitor the quality of the total loan portfolio and its trend. Policies provide information about responsible people, frequency of monitoring, periodic review of collateral, identification of deteriorated loans.

The internal audit operates independently and provides that the handbook of credit risk management is subject to full and effective reviews. The Internal Audit ensures the Audit Committee that internal controls and credit risk practices are appropriate and sufficient for the type and complexity of risky activities.

Risk Review: The purpose is to assess the credit management process, the accurate assessment of loans and the quality of the total credit portfolio.

Management of non-performing loans: The bank must have a clear risk policy on how it should manage non-performing loans.

2.1.2-The Basel Committee

The Basel Committee has identified the areas in which banks need to ensure full and fair transparency and they are: accounting policies and practices, the credit risk management, the credit quality, earnings. Monitors banks for credit risk transparency. Basel II has established rules about how much should be the capital of financial institutions to cover potential losses. For the measurement of credit risk are proposed two options. The first is the traditional standardized way, the second is the basis of internal rating, IBR will provide a unique framework through which risk components will be translated into minimum capital requirements.

3. Net foreign currency exposure

The very first research question is to check whether there is Any Net Foreign Currency Exposure assumed by the commercial banks in Kenya. For this purpose, Annual Financial Statements of listed commercial banks are studied. As per the statutory requirements, all the banks operating in Kenya including commercial banks have to mention in the notes to financial statements "Net Foreign Currency Exposure" in Kenyan shillings, the calculated net position by bank, under the heading of "Foreign Exchange Risk". Whether this Net Foreign Currency Exposure varies from bank to bank or there is a set rule for all the banks? If a bank has zero Net Foreign Currency Exposure, it means it has all of its assets and liabilities hedged and offset against other currencies or in the same currency. It can be analyzed either relative to Total Assets or Net Assets of the bank; however, it is more appropriate to analyze it with its relativeness to Net Assets. Therefore, a new variable is constructed i.e. "Net Foreign Currency Exposure relative to Net Assets.

3.1-Foreign exchange risk in commercial banks

Foreign Exchange Trading Activities include:

a. The purchase and sale of foreign currencies to allow customers to partake in and complete international commercial trade transactions.
b. The purchase and sale of foreign currencies to allow customers (or the financial institution itself) to take positions in foreign real and financial investments.
c. The Purchase and Sale of foreign currencies for hedging purposes to offset customer exposure in any given currency.
d. To purchase and sale of foreign currencies for speculative purposes base on forecasting or expecting future movements in Foreign Exchange rates. The above mentioned Trade Activities do not expose a commercial bank to foreign exchange risk as a result of all of the above. The commercial bank is exposed to foreign exchange risk only up to the extent to which it has not hedged or covered its position. Wherever there is any uncertainty that the future exchange rates will affect the value of financial instruments, there lies the foreign exchange risk of a commercial bank. Foreign Exchange risk does not lie where the future exchange rate is predefined by using different instruments and tools by the bank

3.2-Kinds of Foreign Exchange Exposure

Risk management techniques vary with the type of exposure (accounting or economic) and term of exposure. Accounting exposure, also called translation exposure, results from the need to restate foreign subsidiaries' financial statements into the parent's reporting currency and is the sensitivity of net income to the variation in the exchange rate between a foreign subsidiary and its parent. Economic exposure is the extent to which a firm's market value, in any particular currency, is sensitive to unexpected changes in foreign currency. Currency fluctuations affect the value of the firm's operating cash flows, income statement and competitive position, hence market share and stock price. Currency fluctuations also affect a firm's balance sheet by changing the value of the firm's assets and liabilities, accounts payable, accounts receivables, inventory, loans in foreign currency, investments in foreign banks; this type of economic exposure is called the balance sheet exposure.

Transaction exposure is a form of short term economic exposure due to fixed price contracting in an atmosphere of exchange-rate volatility. The most common definition of the measure of exchange-rate exposure is the sensitivity of the value of the firm proxies by the bank's stock return, to an unanticipated change in an exchange rate.

4. Methodology and model of the research

The study analyze 41 observations, which include quarterly data from December 2005 to December 2015. The data used are secondary data published by the Bank of Albania:

1. ROE which is a dependent variable and it is expressed in Million Lek (Albanian Currency).
2. Credit risk is an independent variable and it is expressed in Million Lek.
3. Exchange rate risk is an independent variable and it is expressed in Million Lek.

In order to determine the effect of liquidity risk management on banks profitability the Ordinary least squares *(OLS)* methode is used through applying the statistical program *Eviews* on the quantitative data published by the Bank of Albania for the period December 2005 - December 2015.

A regression model is employed in order to analyze the relation between Credit risk, Exchange rate risk, and ROE:

$Y_i = \beta_0 + \beta_1 X_i + u_i$

As the study has more than one independent variable a multiple regression model should be employed. The regression equation will be:

$Y_i = \beta_0 + \beta_1 X_i + \beta_2 X_i + \beta_3 X_i + ...+ \beta_n X_i + u_i$

Based on the above equation and the variables used in this study, the econometric equation for the model is specified as following:

Hypothesis: $ROE_t = \boldsymbol{\beta}_0 + \beta_1 CreditRisk_t + \beta_2 ExchangeRateRisk_t + u_i$

4.1-Analysis and data interpretation

To test the hypothesis of this research the following variables are analyzed:

a. dependent variables (ROE) ; and
b. independent variables (Credit risk, Exchange rate risk,).

The model is based on the analysis of a multiple regression equation and statistical program Eviews is applyed on the data. The results of the tests are presented in the following tables.

Hypothesis : Credit risk has an impact on Albanian commercial bank ROE while exchange rate risk does not have an impact on Albanian commercial bank ROE.

$ROE_t = \boldsymbol{\beta}_0 + \beta_1 CreditRisk_t + \beta_2 ExchangeRateRisk_t + u_i$

Dependent Variable: ROE

Method: Least Squares

Date: 09/07/17 Time: 13:34

Sample: 1 41

Included observations: 41

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	14.25640	2.222397	6.414873	0.0000
CREDIT_RISK	-0.240772	0.050526	-4.765269	0.0000
EXCHANGE_RATE_RISK	-0.000135	9.31E-05	-1.453415	0.1543

R-squared	0.421654	Mean dependent var	3.123942
Adjusted R-squared	0.391215	S.D. dependent var	2.852229
S.E. of regression	2.225443	Akaike info criterion	4.508144
Sum squared resid	188.1986	Schwarz criterion	4.633528
Log likelihood	-89.41696	Hannan-Quinn criter.	4.553802
F-statistic	13.85232	Durbin-Watson stat	1.566405
Prob(F-statistic)	0.000030		

Source: *Author's computation, 2017*

The established multiple linear regression equation becomes:

ROE = *14.25640 -0.240772*CreditRisk *-0.000135*ExchangeRateRisk

F-statatistic, which measures the common importance of the explanatory variables, is statistically significant at the 5 % level, according to the corresponding value of probability 0.000030. According to this, the model used is appropriate. Results show that the coefficient Credit Risk is statistically significant at the 5% level with a probability of 0.0005 and implies a negative correlation between the variables. Keeping all other coefficients constant, an increase of 1 unit in the variable Credit Risk will lead to a decrease in the variable ROE by 0.240772 units. The regression analysis shows that the coefficient of Interest Rate Risk is not statistically significant at the 5% level because the probability is 0.1543.

Adjusted R^2 0.421654 (42,16%) suggests that 42.16% of the total variation in ROE of commercial banks in Albania is explained by joint variations in the independent variables.

Conclusion/ recommendations

This paper studies the impact of credit risk and exchange rate risk on the profitability of commercial banks in Albania during the period 2005-2015. To analyze the relationship between credit risk and exchange rate risk with profitability of banks secondary data published by the Bank of Albania were collected for 16 commercial banks operating in Albania during the period 2005-2015.

ROE was used as indicators to measure the profitability of banks,while credit risk and exchange rate risk as indicators of financial risk. Statistical program Eviews was applied on the collected data to test the hypothesis of this research.

The results of the regression analysis indicate that the correlation between Credit Risk and ROE is statistically significant at the 5% level with a probability of 0.00001 and implies a negative correlation between the variables. Keeping all other coefficients constant, an increase of 1 unit in the variable Credit Risk will lead to a decrease in the variable ROE by 0.240772 units.

Also the results of the regression analysis show that there exist a negative correlation between Exchange Rate Risk and ROE.

Results show that the coefficient of Exchange Rate Risk is not statistically significant at the 5% level because the probability is 0.1543.

Based on these results the commercial banks in Albania should be more focused on Credit Risk.

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