Section 2. Finance, monetary circulation and credit

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REVIEW OF EMPIRICAL LITERATURE: THE RELATIONSHIP BETWEEN BANK CREDIT RISK MANAGEMENT INDICATORS AND BANK PROFITABILITY INDICATORS

Abstract: The profitability of the banking sector has received more and more attention in recent years. Nowadays there is an extensive empirical literature which has examined the relationship between credit risk management and bank profitability. Most studies in this field have concluded that credit risk management is the main contributor to the profitability of commercial banks. But there are also studies that have proven that the impact of credit risk management on bank profitability is negligible. The purpose of this paper is to make a summary of the empirical studies that have been carried out by different researchers in different countries and an analysis will be made of the results that have been achieved from each study.

Keywords: bank, credit risk, credit risk management indicators, profitability indicators, non-performing loans.

1. Introduction:

Banks, as institutions of financial intermediation, are defined as businesses that take and manage various risks. Banking risks are numerous, where each of these risks can have its own impact on the profitability of financial institutions. Credit risk has been defined by most researchers as the biggest risk among all other risks that affects the financial performance of a bank. Several studies in recent years have shown that excessive credit expansion, poor credit quality and inadequate credit risk management are the main reasons for the recent global financial crisis. Techniques for credit risk management are generally known in the world because the banking sector has had a long history of experience in this field, but nevertheless credit quality problems in commercial banks are one of the most important causes affecting failure.

Many researchers in their studies have shown that credit risk management in financial institutions has become crucial for the survival and growth of these institutions. Credit risk management is important for both banks and policy makers because a strong banking system can promote a country's financial stability as well as increase the economy's resilience to withstand economic crises. For the banks operating in Albania, credit risk and its management is one of the most important issues as long as lending is the main activity through which the Albanian economy is financed.

On the other hand, profitability is the main concern for all banks. The main objective of every bank is the maximization of shareholder value, therefore we found it important to treat a general framework and an empirical analysis of the relationship that exists between some of the most important indicators of credit risk management and the two indicators of bank profitability ROE and ROA.

2. Empirical studies related to the impact of credit risk management on bank profitability

There are numerous empirical studies on the impact of credit risk management on bank profitability and how effective credit risk management can help reduce the probability of failure and limit uncertainty to achieve the required level of bank profitability. Most of these studies support the idea that there is an impact of credit risk management on bank profitability, but there are also studies that have produced opposite results.

Berger and DeYoung[1] surprisingly find a strong positive relationship between the capital adequacy ratio and bank profitability in the US during the 1980s, but he finds that the relationship should be negative in certain situations. In another study, Kosmidou et al[2] also found similar results for commercial banks in the United Kingdom during the period 2000–2005.

Ahmed et al[3] in their study found that bad loans have a significant positive impact on provisions for bad loans. Therefore, an increase in bad loans leads to an increase in provisions for bad loans, which indicates an increase in credit risk and a deterioration in the quality of loans, thereby negatively affecting the bank's performance.

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[1] Berger A. N., & DeYoung R. "Problem loans and cost efficiency in commercial banks". Journal of Banking & Finance,– 21(6). 1997.– P. 849–870.

[2] Kosmidou K., Tanna S., Pasiouras F. "Determinants of profitability of UK domestic banks: panel evidence from the period 1995–2002". In: Proceedings of the 37th Annual Conference of the Money Macro and Finance (MMF) Research Group, Rethymno, Greece, September 1–3, 2005.

[3] Ahmed A. S., Takeda C. and Shawn T. "Bank Loan Loss Provision: A Reexamination of Capital Management and Signaling Effects". Working Paper, Department of Accounting, Syracuse University, 1998.– P. 1–37.

In another study, Ruziqa[1] investigates the joint effect of credit risk and liquidity risk on the profitability of the largest Indonesian banks and finds a negative effect of credit risk and a positive effect of liquidity risk on profitability.

Goddard at al[2] studied the factors affecting the profitability of banks in Europe. They found a positive relationship between capital adequacy ratio and profitability.

Authors Ben-Naceur and Omran[3] in an attempt to examine the impact of banking regulations, concentration, financial and institutional development on commercial bank margins and profitability in Middle Eastern and North African countries from 1989–2005, found that bank capitalization and credit risk have a positive and significant impact on banks' net interest margin, cost efficiency and profitability.

Kargi[4] assessed the impact of credit risk on the profitability of Nigerian banks. Financial reports as a measure of bank performance and credit risk were collected from the annual reports and relations of the banks selected as samples for the period 2004–2008, using descriptive analysis, regression and correlation techniques. The findings revealed that credit risk management has a significant impact on the profitability of Nigerian banks. He concluded that banks' profitability is negatively affected by the levels of loans and advances, non-performing loans and deposits, exposing them to a high risk of illiquidity and distress.

Felix and Claudine[5] investigated the relationship between bank performance and credit risk management. Their findings concluded that return on capital and return on assets, both indicators used to measure profitability, were inversely related to the ratio of non-performing loans to total loans of financial institutions, leading to a decline in profitability.

Haslem[6] identified that bank management; timing, location and size affect bank profitability. This remains of great interest to researchers to investigate the effect of credit risk on bank profitability.

[1] Ruziqa A. "The impact of credit and liquidity risk on bank financial performance: the case of Indonesian Conventional Bank with total asset above 10 trillion Rupiah". International Journal of Economic Policy in Emerging Economies,– 6(2). 2013.– P. 93–106.

[2] Goddard J., Molyneux P., & Wilson J. O. "The profitability of European banks: A cross-sectional and dynamic panel analysis". The Manchester School,– Vol. 72. 2004.– P. 363–381.

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Gremi[1] found that indicators such as the rate of non-performing loans, the rate of provisions for non-performing loans, the ratio of deposits to assets and the inflation rate have a direct negative impact on profitability, while the capital ratio, the loan-deposit ratio, the size of banks, the GDP rate and the loan interest rate have a direct positive impact on banking profitability in Albania measured by the ROE indicator. All the variables taken in the study with the exception of the capital adequacy rate and the GDP rate were statistically significant in the econometric model. We must emphasize that the author Gremi in her paper also tested the impact of these specific banking and macroeconomic indicators on profitability, specifically according to the group of banks G1, G2 and G3, from which she obtained different results according to the respective groups.

The scope of research does not reach convincing data regarding the effect of credit risk on bank profitability, which further motivates us to test the effect of credit risk on bank profitability in our country.

Hosna at al[2] in their study had the main purpose of determining the impact of credit risk management on the profitability of four commercial banks in Sweden. They used regression model to do the empirical analysis. In this model they took ROE as an indicator of profitability and NPLR and CAR as indicators of credit risk management. The data were collected from the annual reports of the banks included in the study for the period 2000–2008. Findings and analysis showed that credit risk management has an effect on profitability in the four banks included in the study. Among the two obtained indicators of credit risk management, they found that NPLR has a more significant effect than capital adequacy ratio, CAR on the profitability indicator ROE. Analyzes in each bank studied showed that the impact of credit risk management on profitability is not the same. The results obtained from the regression model showed that there is an impact of credit risk management on profitability at a reasonable level of 25.1%.

Kithinji[3] in her study evaluated the effect of credit risk management on the profitability of commercial banks in Kenya. ROA was used as the dependent variable representing bank profitability, while the ratio of loans and advances/total assets and the ratio of problem loans/total loans were used as independent variables representing credit risk management. The data were collected from the banks' annual reports for

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[1] Eliona Gremi. "Ndikimi i faktorëve specifikë bankarë dhe i atyre makroekonomikë në përfitueshmërinë e bankave shqiptare". 2014.

[2] Hosna A., Manzura B., & Juanjuan S. "Credit Risk Management and Profitability in Commercial Banks in Sweden". Master of Science in Accounting. 2009.

[3] Kithinji A. M. "Credit risk management and profitability of commercial banks in Kenya". Working paper, School of Business University of Nairobi, – Kenya. 2010. Available at: URL: http://erepository.uonbi.ac.ke

the period 2004–2008. The findings revealed that the majority of commercial banks' profits are not affected by the amount of loans and non-performing loans, suggesting other variables besides loans and NPLs. which should affect bank profits.

J. Aduda and J. Gitonga[1] in their study aimed to determine the relationship between credit risk management and profitability in commercial banks in Kenya. The data for the banks were obtained from the annual reports of the banks and their financial statements for a period of ten years 2000–2009. ROE was used as an indicator of profitability and NPLR as an indicator of credit risk management. The findings revealed that NPLR as an independent variable is positively related to the dependent variable ROE, so simple linear regression model can be used to predict ROE for commercial banks. They emphasized that despite this, care should be taken in using the model, because other independent variables should be included in the model when necessary.

Funso et al[2] in their study aimed to conduct an empirical investigation on the quantitative effect of credit risk on the performance of commercial banks in Nigeria over a period of 11 years (2000–2010). They selected five commercial banks out of twenty existing commercial banks in Nigeria. The model they used in this study was based on the model of Kargi[3] in his study "Credit Risk and Performance of Nigerian Banks" which measures profitability with ROA as a function of NPL ratio and total advances and ratio of total loans and advances / total deposits, which are used as indicators of credit risk. However, they improved the model in this study by including the provision ratio for bad loans/classified assets as a measure of credit risk. The results were such that a 100% increase in bad loans reduces profitability (ROA) by about 6.2%. A 100% increase in provisions for bad loans also reduces profitability by about 0.65%, while a 100% increase in total loans and advances increases profitability by about 9.6%

Li and Zou[4] in their study had the main purpose of investigating whether there is a relationship between credit risk management and profitability of commercial banks in Europe, as well as investigating whether this relationship is stable or fluctuating. In the research model, they defined ROE and ROA as representatives of profitability, while NPLR and CAR defined them as representatives of credit risk management. The study collects data from the 47 largest commercial banks in Europe for the period

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[1] Aduda J. dhe Gitonga J. "The Relationship Between Credit Risk Management and Profitability Among the Commercial Banks in Kenya". 2011. Funso et al (2012), shih "Credit risk ..."

[2] Ibid.

[3] Kargi H. S. "Credit Risk and the Performance of Nigerian Banks". AhmaduBello University, Zaria. 2011.

[4] Fan Li dhe Yijun Zou. "The Impact of Credit Risk Management on Profitability of Commercial Banks: A Study of Europe". 2014.

2007–2012. The findings showed that credit risk management has positive effects on the profitability of commercial banks. Among the two representatives of credit risk management, NPLR has a more significant impact on both ROE and ROA indicators. However, during the period under study, the relations between all the representatives were not stable but fluctuating.

Abiola and Olausi[1] (2014) in their study aimed to investigate the impact of credit risk management on the performance of commercial banks in Nigeria.

The financial reports of seven commercial banks in the country were used in the analysis for a period of seven years (2005–2011). The regression model was used for analysis. In the model, ROE and ROA were used as performance indicators, while NPLR and CAR were used as indicators of credit risk management. The findings revealed that credit risk management has a significant impact on the profitability of commercial banks in Nigeria. Surprisingly, in this study NPL is positive and statistically significant at the 1% significance level. This finding was unusual because theoretically NPLs are expected to have a negative effect on a bank's profitability. The results of this study showed a strong positive relationship between NPLs and the performance of commercial banks. We believe that an argument that supports this result is the possibility that banks in Nigeria, even though they have a high rate of non-performing loans, have given very risky loans with high interest rates and this has led to an increase in their profitability. So, the rate of increase in profitability is higher than the rate of increase in risk. On the other hand, it is theoretically acceptable that banks with a high capital adequacy ratio have a better profitability. The results in this study showed that although the capital adequacy ratio is positive, it is not significant.

Noman et al[2] in their study aimed to find out the impact of credit risk on profitability in the banking sector of Bangladesh. In this study, data was collected from 18 private commercial banks for the period 2003–2013. They used NPLR, provision ratio for bad loans/total loans, provision ratio for bad loans/problem loans and CAR as risk indicators. of credit and ROAA (return on average assets), ROAE (return on average equity) and NIM (net interest margin) as indicators of profitability. The results revealed a significant negative relationship between NPLR and the ratio of provision for bad loans/total loans and all profitability indicators of commercial banks in Bangladesh. Specifically, it was found that a one-unit increase in NPLR decreases ROAA by 0.05 units, ROAE by 0.54 units and NIM by 0.12 units, respectively, keeping the other variables in the regression unchanged, as well as a one-unit increase in the provisioning ratio for loans losses/total loans, decreases ROAA by 0.1 units, ROAE by 1.25 units,

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[2] Noman et al. "The Effect of Credit Risk on the Banking Profitability: A Case on Bangladesh". 2015.

and NIM by 0.02 units holding other explanatory variables constant. Other results showed that the effect of NPL ratio on profitability is mixed. It is worth noting that the results of the study highlighted that the impact of the ratio of provisions for bad loans/ non-performing loans on the various proxies of profitability is very small, despite the negative and significant finding in NIM and the positive and insignificant one in the other two indicators ROAA and ROAE. It was also found that the impact of CAR on ROAE is negative and significant, but its impact on NIM is significant and positive, while on ROAA it affects positively and significantly. Further results showed that the implementation of Basel II agreement increases commercial bank's NIM significantly but decreases ROAE significantly. In conclusion, this study revealed that credit risk negatively affects the profitability of commercial banks. Therefore, banks should use prudent credit risk management procedures in order to ensure higher profitability and safety while protecting banks from crises.

S. Kodithuwakku[1] in his study aimed to identify the impact of credit risk management on the performance of commercial banks in Sri Lanka. 8 banks out of 24 commercial banks in Sri Lanka were studied for the period 2009–2013. Data were collected from various sources such as the annual reports of the commercial banks studied, various articles, books, scientific journals, etc. ROA was used as a performance indicator and the ratio of provision for bad loans/total loans (LP/ TL), provision for bad loans/total assets (LP/TA), provision for bad loans/total non-performing loans (LP /NPL) and the ratio of non-performing loans/total loans (NPL/TL) were used as indicators of credit risk. The multiple linear regression model was used for analysis and the results showed that all independent variables except LP/TL have a negative impact on profitability. Banks' NPL/TL, LP/NPL and LP/TA have significant negative relationship with ROA. The results showed that 1% increase in NPL decreases ROA by 13.7587% and 1% increase in provision for bad loans decreases ROA by 1.0139%. Also 1% increase in LP/NPL decreases ROA by 0.0792%. The regression results showed that banks' LP/TA is significantly positively related to ROA. The model found that a 1% increase in the provision for bad loans increases ROA by 0.1035%. The results found proved the objective of the study that a better credit risk management leads to a better banking performance. The findings of the study indicated that banks need to ensure that they have put in place a strengthened framework for credit risk management.

Gizaw et al[2] in their study aimed to empirically investigate the impact of credit risk on the profitability of commercial banks in Ethiopia. The data were collected from

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[1] Kodithuwakku. "Impact of Credit Risk Management on the Performance of Commercial Banks in Sri Lanka". 2015.

[2] Gizaw et al. "The impact of credit risk on profitability performance of commercial banks in

eight selected commercial banks for a period of 12 years (2003–2014), which were collected from the annual reports of the respective banks and state-owned banks in Ethiopia. The data were analyzed using a descriptive analysis and regression model for the data. The dependent variables in this study that measured profitability were specifically ROA and ROE. The independent variables that measured credit risk were specifically NPLR, the ratio of provisions for bad loans/total loans (LLPR), capital adequacy ratio (CAR) and the loan/deposit ratio (LTDR). The results showed that non-performing loans, provisions for bad loans and capital adequacy have a significant impact on the profitability of commercial banks in Ethiopia. LTDR has no significant impact on bank profitability.

Alshatti[1] aimed to investigate the impact of credit risk management on the financial performance of commercial banks in Jordan. The data were collected from the annual reports of Jordanian commercial banks for the period 2005–2013. To make the analysis, the regression model was used, where as representatives of profitability, that is, the dependent variables were ROA and ROE. While as representatives of credit risk management, as independent variables, CAR, CI/CF, FL/NF, leverage ratio (LR) and NPLR were used. The researcher indicated that the NPLR ratio was used to evaluate the effectiveness and adequacy of a bank's credit risk management. Surprisingly, this ratio was found to have a positive effect on profitability. This result shows that despite the large number of outstanding loans, the NPL ratio has a positive impact on profitability. This means that Jordanian banks must create efficient arrangements to deal with credit risk management. The results also revealed that CAR, loan-to-collateral value ratio and leverage ratio do not affect Jordanian commercial banks' profits as measured by ROE, suggesting that variables other than these affect banks' profitability. The researcher found that the leverage ratio contributes negatively to the profitability of banks, and so companies should not be financed with too much debt, because a greater financial leverage will lead to an increase in the company's debt and thus their liabilities, which can negatively affect the company's performance.

Bayyoud and Sayyad[2] in their study aimed to investigate the relationship between credit risk management and profitability in commercial and investment banks in Palestine. The regression model was used to analyze the quantitative data. Findings from this model confirmed that there is no impact of credit risk on the profitability of investment and commercial banks in Palestine. Also, it was found that there are no differences between Palestinian investment and commercial banks regarding the

Ethiopia". 2015.

[1] Alshatti. "The effect of credit risk management on financial performance of the Jordanian commercial banks". 2015.

[2] Bayyoud dhe Sayyad. "The relationship between credit risk management and profitability between investment and commercial banks in Palestine". 2015.

relationship. ROE was used as an indicator of profitability in the model and NPLR was used as an indicator of credit risk. The empirical results in this study revealed that there is no relationship between credit risk and profitability in commercial and investment banks in the country.

Chin'anga[1] aimed to investigate whether credit risk management had an impact on the profitability of four major South African banks. A quantitative approach was used to prove the relationship between profitability, represented by ROE, and credit risk management, represented by two variables, CAR and NPLR. Data for the period 2002–2013 were analyzed using regression modeling and the study concluded that not only does credit risk management have an impact on the profitability of banks in South Africa, but that bank size, operating expenses and economic growth also affect the profitability of banks in South Africa. The study concluded that credit risk management has an effect on profitability and can be used to enhance profitability. This means that by increasing capital requirements to appropriate levels and reducing NPL, banks in South Africa are able to increase profitability as shown by the positive relationship between CAR and ROE as well as the negative relationship between NPLR and ROE. It has also been established that CAR and NPLR are the most appropriate representatives of credit risk management, as they were both found to be significant at the 1% level. The study also concluded that controllable variables such as bank size, operating expenses and economic growth also affect profitability.

3. Conclusions from the empirical literature review

- Numerous empirical studies have been done regarding the impact of credit risk management on bank profitability and how effective credit risk management can help reduce the probability of failure and limit the uncertainty to achieve the level required bank profitability;
- Most of these studies support the idea that there is an impact of credit risk management on bank profitability, but there are also studies that have produced opposite results. The scope of research does not reach convincing data regarding the effect of credit risk on bank profitability, which further motivates us to test the effect of credit risk on bank profitability in our country;
- Banks that are mainly exposed to credit risk result in reduced profitability. Profitability indicators (ROE and ROA) are two indicators of the effectiveness of management to generate income, both from the money invested by shareholders and from the total investments made in the form of assets. The reason these two indicators complement each other is that while ROE does

[1] Chin'anga. "The effect of credit risk management on the profitability of the four major south African banks". 2015.

not indicate anything about the debt financing situation, ROA does, so both are taken in our study as proxies of bank profitability;

- All empirical analysis helped us to become familiar with the most used credit risk management indicators and bank profitability indicators. Having as the purpose of our work to determine the empirical relationship that exists between credit risk management and bank profitability, we managed to determine not only the indicators but also saw what impact each credit risk management indicator has on the profitability indicators;
- All the empirical studies we saw regarding this phenomenon used the multiple linear regression model as a model for data analysis, where they took as dependent variables indicators of bank profitability and as independent variables indicators of risk management of the loan;
- Most of the above empirical studies have concluded that there is a strong and stable relationship between credit risk management and bank profitability. But there were also studies that claimed the opposite. Based on these results, we look with great interest at testing the effect of credit risk management on bank profitability for the Albanian banking system.

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