ST.MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES

IMPACT OF CREDIT RISK ON THE PERFORMANCE OF COMMERCIAL BANKS IN ETHIOPIA

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Abstract

The objective of the study is to empirically examine the quantitative effect of credit risk on the performance of commercial banks in Ethiopia, considering variables related to lending activities, over the period of 5 years (2008-2012). The empirical investigation uses the accounting measure of Return on Assets (ROA), which is the dependent variable, to represent Banks' performance. The study fundamentally involves both descriptive and econometrics techniques. The econometrics method used in the study basically involves assessing the impact of selected internal variables, the provision to total loans, loan to total asset, credit administration (cost to total loans) and natural logarithm of total asset (Economies of scale), on the performance of the banking sector. To this end multiple linear regression model is used to measure the relative weighting of the independent variables above on a dependent variable.

Basic descriptive statistics was appliedfor trend analysis. A non- probability method in the form of judgmental sampling technique is employed in selecting the eight Banks into the sample and the data are sourced from the Annual Reports of the same Banks which account for over eighty percent of the total loan and advance in the industry. The study finds that the selected variables: the provision to total loans, loan to total asset, credit administration (cost to total loans) and Size (Economies of scale) have significant effect on the performance of Banks. However, a certain variation in the magnitude and direction of their effect on the selected profitability measure, Return on Asset. Based on the study it is recommended that Ethiopian banks need to develop their credit risk management capacity, there should also be control over overhead costs related to lending, and increasing the loan book size without compromising the sound credit planning should be a priority task.

Keywords: *Determinants, Credit Risk, Bank, Performance, Ethiopia*

List of Abbreviations and Acronyms Used

AB	Abay Bank S.C
ADIB	Addis International Bank S.C
AIB	Awash International Bank S.C
BBI	Bunna International Bank S.C
BCBS	Basel Committee on Banking Supervision
BIB	Berhan International Bank S.C
BOA	Bank of Abyssinia S.C
CBB	Construction and Business Bank
CBE	Commercial Bank of Ethiopia
CBO	Cooperative Bank of Oromia S.C
CRM	Credit Risk Management
DB	Dashen Bank S.C.
DGB	Debub Global Bank S.C
EB	Enat Bank S.C
LIB	Lion International Bank S.C
NBE	National Bank of Ethiopia
NIB	Nib International Bank S.C
OIB	Oromia International Bank S.C
SPSS	Statistical Package for the Social Sciences
UB	United Bank S.C
WB	Wegagen Bank S.C
ZB	Zemen Bank S.C

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CHAPTER ONE

1   INTRODUCTION

1.1   Background of the Study

The role of Banks remain central in financing economic activity and its effectiveness could exert positive impact on overall economy as a sound and profitable Banking sector is better able to withstand negative shocks and contribute to the stability of the financial system (Athanasoglou, Brissimis, and Delis (2005).Consequently, the determinants of Bank performance have attracted the interest of academic research as well as of Bank management. Studies dealing with internal determinants employ variables such as size, capital, credit risk management and expenses management. Poor asset quality and low levels of liquidity are the two major causes of Bank failures and represented as the key risk sources in terms of credit and liquidity risk and attracted great attention from researchers to examine their impact on Bank profitability.

Credit risk is by far the most significant risk faced by Banks and the success of their business depends on accurate measurement and efficient management of this risk to a greater extent than any other risk (Giesecke, 2004). Increases in credit risk will raise the marginal cost of debt and equity, which in turn increases the cost of funds for the Bank (Basel Committee, 1999).

It is the potential that a contractual party will fail to meet its obligations in accordance with the agreed terms (Brown and Moles, 2012). The Basel Committee on Banking Supervision (2001) also defined it as the possibility of losing the outstanding loan partially or totally, due to credit events (default risk). It is true that, the credit function

of Banks enhances the ability of investors to exploit desired profitable ventures. Credit creation is the main income generating activity for the Banks. But this activity involves huge risks to both the lender and the borrower. The risk of a trading partner not fulfilling his or her obligation as per the contract on due date or anytime thereafter can greatly jeopardize the smooth functioning of Bank's business. On the other hand, a Bank with high credit risk has high bankruptcy risk that puts the depositors in jeopardy. In a bid to survive and maintain adequate profit level in this highly competitive environment, Banks have tended to take excessive risks. However, it exposes the banks to credit risk. The higher the Bank exposure to credit risk, the higher the tendency of the Banks to experience financial crisis and vice-versa. The Basel Committee on Banking Supervision (1999) asserts that loans are the largest and most obvious source of credit risk.

In Ethiopia, as of 2014 there are eighteen commercial Banks operating under the direct supervision of National Bank of Ethiopia. Sixteen of them are private Banks and the rest are government owned. Looking at the financial statements of these commercial Banks (2008-2012), most of them are maintaining significant amount of provisions for Loans and Advances that strengthen the Basel Committee's on Banking Supervision (1999) assertion that loans are the largest and most obvious source of credit risk.

Therefore, it is a requirement for every Bank worldwide to be aware of the need to identify measure, monitor and control credit risk while also determining how credit risks could be lowered. This means that a Bank should hold adequate capital against these risks and that they are adequately compensated for risks taken. *Narayan SETHI, Kalpana SAHOO, Sanhita SUCHARITA (2003).*

It is the realization of the high provision expense to the loan and advances made by the banks that this research work is inspired to see in detail the factors that are contributing to same and recommend solutions to mitigate the negative consequences on the profitability of the Ethiopian Commercial Bank

1.2 Statement of the Problem

Banks consciously take risk as they perform their role of financial intermediation in the economy. Consequently, they assume various risks, which include credit risk, interest rate risk, liquidity risk, foreign exchange risk and operational risk. Managing these risks is essential for their survival and prosperity. Losses from a single loan or a material breakdown in controls can eliminate the gain on many other transactions (National Bank of Ethiopia, 2010).

Majority of Ethiopian commercial banks recorded a huge amount of provision for their Loans and Advances. All commercial Banks' financial statement for year 2012 is taken as a data point to look at their provision for Loans and Advances status. These Banks have recorded an average of 3.7% provision for loan and advances for the period from 2008 to 2012 for the loan and advances made (Author Compilation from Banks' Financial Statements). For Loans and Advances under pass (Normal) status, as per National Bank of Ethiopia directive No. SBB43/2007, one percent of the total loan and advances has to be recorded as provision; however, the provision is almost more than double from the set standard.

Recently there are attempts being made to see in commercial banks of Ethiopia the impact of credit risk on profitability, as there is high loan provision expenses though declining ,which is above the standard, . However, there are no in-depth studies that have been conducted to investigate the impact of credit risk in the commercial Banks' performance in Ethiopia. The research made by Girma (2011) focuses on the risk management part and the models considered are Loan Provision to Total Asset, Loan Provision to Total Loan, NPL to Total Loan, and Loan Provisions to Non-Performing Loan. And Tseganesh' (2012) investigated some of Bank specific and macroeconomic factors affecting Banks liquidity and their impact on financial performance.

Local studies so far however did not consider some variables like age or size of banks(Economies of scale), and cost per loan asset(Credit administration cost) in relation to performance of banks .These variables were among the factors considered in studies made in different countries (Pasiouras and Kosmidou (2007), Appa(1996), Guru et al. (2002) and BenNaceur (2003).This study therefore fills the gap in respect of the variables considered in the study and it is further believed that such a study with complete recognition of all factors would contribute to policy making and devise risk mitigating mechanisms.

1.3 **Research Questions**

Given the various issues relating to the impact of credit risk on Banks performance in Ethiopia, a number of research questions can be raised as follows:

1. How does (loan to total asset) affect Banks performance?
2. What impacts do Bank's loan loss provisions have on performance?
3. What is the impact of credit administration (cost per loan) on performance?
4. What is the impact of Bank size (Economies of scale) on performance?

1.4 **Objective of the Study**

The general objective of the study is to measure the impact of credit risk on the financial performance of Banks.

The specific objectives are:

1. To assess if there is an impact relationship between Loan to total asset and loan loss provisions with the performance of commercial Banks.
2. To assess if there is an impact relationship between credit administration (cost per loan) and the performance of commercial Banks.
3. To assess if there is an impact relationship between Bank size (Economies of scale) and the performance of commercial Banks.

1.5   Definition of Terms

Credit Risk means the possibility of losing the outstanding loan partially or totally, due to credit events (default risk) (BCBS, 2001).

Credit risk Exposure means the total amount of credit extended to a borrower by a lender (Croatian National Bank, 2010).This definition is adopted for the purpose of this paper.

Credit risk management means the process of risk identification, measurement, monitoring and control (NBE, 2010).

Loan and advances means any financial assets of a Bank arising from a commitment to advance funds by a Bank to a person that is conditioned on the obligation of the person to repay the funds, either on a specified date or dates or on demand, usually with interest (NBE, 2008).

Provision for loan and advances means a balance sheet valuation account established through charges to provision expense in the income statement in respect of possible losses in the loans or advances portfolio (NBE, 2007).

Bank performance means profitability .Gilbert (1984) in a survey of literatures argued that bank profit is an appropriate measure of bank performance.

1.6 **Significance of the study**

The aim of this paper is to assess the impact of credit risk on the performance of Ethiopian Commercial Banks over a period of five years (2008-2012). The study is made because of the damaging effect of credit risk on Bank performance and would be of utmost relevance as it addresses how credit risk affects Banks' profitability using a judgmental sampling and the findings would serve as the basis for possible recommendations and provides policy measures to the various stakeholders to tackle the effect of credit risk in order to enhance the quality of Banks' risk assets. Plus, it provides also insight in to the local context by considering similar researches made in different countries and hence help fill gap in the literature.

1.7 **Scope and delimitation of the study**

A total of eighteen commercial Banks operate presently in Ethiopia, out of which a sample of eight is drawn. The eight are selected primarily since the Banks account for over eighty percent of the total loan and advance in the industry. Besides the composition is both from the government owned and private company with varied capital basis and hence risk exposure.

Due to confidentiality of the data; credit risk exposure assessed by loan loss provision which is proxy to same and five years data from year 2008 - 2012 is used to see the short term effect of both dependent and independent variables like the trends of Loan and Advances with respective provisions, operation cost , asset positions and return on asset . The data is collected from secondary sources which are obtained directly from Banks audited financial statements that are prone to variation in accounting years. In addition, this study is quantitative primarily because both the dependent and independent variables are quantifiable hence measurable over the time period to see the trend.

The independent variables are few as other variables like interest income/total loan, loan provision / total asset have high multicolinearity relationship and hence have the same implication with the one already considered. Finally the study excluded recently established Banks so as to avoid bias related to limited observations.

Determinants of banks Performance closely tied with profitability measures like ROA than the pricing measures which only focuses on interest rates and stock pricing which needs stock market which is not the case in the local banking industry context. Therefore, in the research performance is measured through return on asset.

1.8 Structure of the paper

The remainder of the paper organized in such a way that chapter two reviews relevant literature on the factors that impacts Bank performance. Chapter three defines variables and discusses the methodology. Chapter four focuses on data analysis and provides the findings and major results. Chapter five presents the conclusion and recommendations.

CHAPTER TWO

2 LITERATURE REVIEW

2.1 What is Risk?

Risk is "the variability of the actual return from the expected returns associated with a given asset or investment" (Khan and Jain, 2004). Ehrhardt and Brigham (2011) also defined risk as "the chance that some unfavorable event (both financial and physical) will occur".

2.2 What is Credit Risk?

Credit risk is a financial exposure resulting from a Bank's dependence on another party (counterparty) to perform an obligation as agreed (National Bank of Ethiopia 2010).

Credit risk, as defined by the Basel Committee on Banking Supervision (2001), is also the possibility of losing the outstanding loan partially or totally, due to credit events (default risk). It can also be defined as the potential that a contractual party will fail to meet its obligations in accordance with the agreed terms. Credit risk is also variously referred to as default risk, performance risk or counterparty risk (Brown and Moles, 2012).

A Bank exists not only to accept deposits but also to grant credit facilities, therefore inevitably exposed to credit risk. Credit risk is by far the most significant risk faced by Banks and the success of their business depends on accurate measurement and efficient management of this risk to a greater extent than any other risks (Gieseche, 2004). According to Chen and Pan (2012), credit risk is the degree of value fluctuations in

debt instruments and derivatives due to changes in the underlying credit quality of borrowers and counterparties. Coyle (2000) defines credit risk as losses from the refusal or inability of credit customers to pay what is owed in full and on time. Credit risk is the exposure faced by Banks when a borrower (customer) defaults in honoring debt obligations on due date or at maturity. This risk interchangeably called 'counterparty risk' is capable of putting the Bank in distress if not adequately managed. Credit risk management maximizes Bank's risk adjusted rate of return by maintaining credit risk exposure within acceptable limit in order to provide framework for understanding the impact of credit risk management on Banks' profitability (Kargi, 2011).

The main source of credit risk include, limited institutional capacity, inappropriate credit policies, volatile interest rates, poor management, inappropriate laws, low capital and liquidity levels, direct lending, massive licensing of Banks, poor loan underwriting, laxity in credit assessment, poor lending practices, government interference and inadequate supervision by the central Bank (Kithinji, 2010).Credit risk is critical since the default of a small number of important customers can cause large losses, which can lead to insolvency (Bessis, 2002).

An increase in Bank credit risk gradually leads to liquidity and solvency problems. Credit risk may increase if the Bank lends to borrowers it does not have adequate knowledge about. Robert and Gary (1994) state that the most obvious characteristics of failed Banks is not poor operating efficiency, however, but an increased volume of non-performing loans.

Koehn and Santomero (1980), Kim and Santomero (1988) and Athanasoglou et al. (2005), suggest that Bank risk taking has pervasive effects on Bank profits and safety. Bobakovia (2003) asserts that the profitability of a Bank depends on its ability to foresee, avoid and monitor risks, possible to cover losses brought about by risk arisen. This has the net effect of increasing the ratio of substandard credits in the Bank's credit portfolio and decreasing the Bank's profitability (Mamman and Oluyemi, 1994).

The Banks supervisors are well aware of this problem, it is however very difficult to persuade Bank mangers to follow more prudent credit policies during an economic upturn, especially in a highly competitive environment. They claim that even conservative mangers might find market pressure for higher profits very difficult to overcome.

2.3   Banks Performance and its Determinants

The role of Bank remains central in financing economic activity and its effectiveness could exert positive impact on overall economy as a sound and profitable Banking sector is better able to withstand negative shocks and contribute to the stability of the financial system (Athanasoglou et al, 2005). Therefore, the determinant of Bank performance have attracted the interest of academic research as well as of Bank management, financial markets and Bank supervisors since the knowledge of the internal and external determinants of Banks' profits and margins is essential for various parties.

In many of the literature reviewed, it is explained that bank performance is represented mainly by quantifiable financial indicators. The literature on the determinants of bank performance has closely tied same with profitability measures such as ROA, ROE and NIM. Smirlock(1985), Civelec and Al-Almi(1991),Agu(1992) and Chirwa (2001).Profitability accounts for the impact of better financial soundness on bank risk bearing capacity and on their ability to perform liquidity transformation (Rauch et al. 2008; Shen et al. 2010). According to Popa et al. (2009), popular measures of bank performances are return on assets (ROA), return on equity (ROE), net banking income and the efficiency ratio. Gilbert (1984) in a survey of literatures argued that bank profit is an appropriate measure of bank performance.

On the other front, different researchers assessed performance in terms of bank prices (as measured by interest rates) rather than bank profitability. The justification as

explained by Berger (1989) and Chirwa(2001) is that the use of price-concentration relationship instead of profit concentration relationship measures the performance of banks and their market structure. They argued that the price-concentration relationship imply that high levels of concentration allow for non-competitive behavior that would result in lower interest rates given to depositors and/or higher lending rates to borrowers. However, as explained in Chirwa(2001), Molynex and Forbes(1995) argued that price measures of performance create problems of cross subsidization of multi-product firm.

During the last two decades the Banking sector has experienced worldwide major transformations in its operating environment. Both external and domestic factors have affected its structure and performance. Correspondingly, in the literature, Bank profitability is usually expressed as a function of internal and external determinants.

Molyneux and Thornton (1992) is one of the first works who nicely illustrated this approach by investigating Bank profitability of 18 European countries over the period 1986-1989. Demirguq-Kunt and Huizinga (1999) underlined the internal and external determinants of profitability for Banks of 80 countries over the period 1988-1995. Most researchers have measured performance using either Return on Equity (ROE) or Return on Assets (ROA).The major studies dealing with micro-specific factors employ variables such as size, risk, capital adequacy and operational efficiency.

The internal determinants refers to the factors originate from Bank accounts (balance sheets and/or profit and loss accounts) and therefore could be termed micro or Bank specific determinants of profitability. The external determinants are variables that are not related to Bank management but reflect the economic and legal environment that affects the operation and performance of financial institutions. A number of explanatory variables have been proposed for both categories, according to the nature and purpose of each study (Yuqi Li, 2007).

2.3.1 **Internal determinants**

Most researchers have measured performance using either Return on Equity (ROE) or Return on Assets (ROA).The major studies dealing with micro-specific factors employ variables such as size, risk, capital adequacy and operational efficiency and test the relationship with either Return on Equity (ROE) or Return on Assets (ROA).

In addition, as Short (1979) argues, size is closely related to the capital adequacy of a Bank since relatively large Banks tend to raise less expensive capital and, hence, appear more profitable. Taking the similar approach, Haslem (1968), Short (1979), Bourke (1989), Molyneux and Thornton (1992) and Goddard, J., Molyneux, P., Wilson, J.O.S., (2004), all link Bank size to capital ratios, which they claim to be positively related to size, indicated that as size increase especially in the case of small to medium-sized Banks, Profitability rises. However, many other researchers suggest that little cost saving can be achieved by increasing the size of a Banking firm (Berger et al., 1987), which suggests that eventually very large Banks could face scale inefficiencies.

The Bank size is generally introduced to account for existing economies of scale in the Banking market. The relationship between size and profitability is an important part of the firm's theory. Since larger Banks are more capable to realize economies of scale and reduce the cost of gathering and processing information (Demerguq-Kunt and Huizingha (1999), Toni Uhomoibhi, (2008), Dietrich and Wanzenried (2011), the Bank size should be positively associated with its performance. However, extremely large Banks might illustrate a negative relationship between size and profitability. This is due to agency costs, the overhead of bureaucratic processes, and other costs related to managing large firms (e.g. Stiroh and Rumble, 2006; Pasiouras and Kosmidou, 2007).

Smirlock (1985) find a positive and significant relationship between size and Bank profitability. More recently, Pasiouras and Kosmidou (2007) report the same result and argue that larger Banks might have a higher degree of production and loans diversification than smaller ones. Other studies suggest that small cost saving can be

achieved by increasing the size of a Banking firm (Berger et al., 1987). Ayadi and Boujelbene (2012) in their Banking performance study of twelve Tunisian deposit Banks over the period of 1995- 2005, notice a significant positive relation between size and Return on Average Assets proving the existence of economies of scale in the Tunisian Banking sector. On the contrary, Ben Naceur, and Goaied (2010), show that size impact negatively on profitability which involves that Tunisian Banks operating above their optimum level. Similarly, Sinkey (1991) concludes that larger Banks are more profitable than smaller ones. So, the impact of Bank size on its profitability cannot be theoretically anticipated.

While some studies considered the overall Bank risk as a determinant of their performance, other studies focus on one particular and major risk affecting Bank profit, such as the credit risk. In the literature on Bank profitability, the Bank loans over total assets ratio is mainly used as a proxy for credit risk when data do not permit the calculation of the non-performing loans (Maudos and De Guevara, 2004). Assessing the impact of loan activities on Bank risk, Brewer (1989) uses the ratio of Bank loans to assets (LTA). The reason to do so is because Bank loans are relatively illiquid and subject to higher default risk than other Bank assets, implying a positive relationship between LTA and the risk measures. In contrast, relative improvements in credit risk management strategies might suggest that LTA is negatively related to Bank risk measures (Altunbas, 2005). Bourke (1989) reports the effect of credit risk on profitability appears clearly negative. This result may be explained by taking into account the fact that the more financial institutions are exposed to high risk loans, the higher is the accumulation of unpaid loans, implying that these loan losses have produced lower returns to many commercial Banks (Miller and Noulas, 1997).

DelisDietrich, and Wanzenried (2011) was the first study approximating credit risk or credit quality by the Loan loss provisions over total loans ratio.

The ratio of Loan Loss Reserves to Gross Loans (LOSRES) is a measure of Bank's asset quality that indicates how much of the total portfolio has been provided for but not charged off. Indicator shows that the higher the ratio the poorer the quality and

therefore the higher the risk of the loan portfolio will be. In the studies of cross countries analysis, it also could reflect the difference in provisioning regulations (Demirguc-Kunt, A. and Huzinga, H. 1999).

The findings of Felix and Claudine (2008) also shows that return on equity ROE and return on asset ROA all indicating profitability were negatively related to the ratio of non-performing loan to total loan, NPL/TL, of financial institutions therefore decreases profitability.

In addition, many researchers include operational efficiency as a specific-Bank factor affecting their profitability. Theoretically more operational efficient Bank is expected to be more profitable. Cost per loan asset (CLA) is the average cost per loan advanced to customer in monetary term. Purpose of this is to indicate efficiency in distributing loans to customers (Appa, 1996). CLA ratio can be calculated as: *CLA Ratio= Total Operating Cost/ Total amount of loans.*

However, measured by the cost-income ratio or by overhead costs to total assets ratio, some empirical literature found a negative relationship between operational efficiency and Bank's profitability (Athanasoglou et al., 2008; Goddard et al., 2009). Others authors, show a positive relationship between profitability and expenses. Molyneux and Thornton (1992) provide the evidence that Bank's expenses affect positively the European Banking profitability. Their results defend the efficiency wage theory, which states that employee's productivity increases with the wage's rate. Similarly, Guru et al. (2002) and BenNaceur (2003), suggest that Banks are able to pass their overheads to depositors and borrowers in terms of lower deposit rates and/or larger lending assets. Nevertheless, BenNaceur and Omra (2011) on MENA countries, find the opposite results when they consider the total operating costs divided by the sum of total earning assets and total deposits as a proxy of operational efficiency.

2.3.2 External determinants

Turning to the external determinants, several factors have been suggested as impacting on profitability and these factors can further distinguish between control variables that describe the macroeconomic environment, such as inflation, interest rates and cyclical output, and variables that represent market characteristics. The latter refer to market concentration, industry size and ownership status (Athanasoglou et al, 2005).

Market Risk is the risk of asset value change associated with systematic factor. According to Santomero (1997), market risk by its nature can be hedged but cannot be diversified away completely. Two market risks that are of concern to the Banking sector are interest rates and relative value of currencies. The Banking operation is solely dependent on these as it impacts on performance. For instance most Banks track interest rate risk closely. They measure and manage the firm's vulnerability to interest rate variation as well. Liquidity Risk, according to Santomero (1997), can be described as the risk of a funding crisis, such as unexpected event in the form of large charge off, loss of confidence, or a crisis of national proportion like existence crisis. Risk management here centers on liquidity facilities and portfolio structure. Recognizing liquidity risk leads the Banks to recognize liquidity itself as an asset, and portfolio design in the face of illiquidity concerns as a challenge.

2.4   Review of empirical literature

Bourke's (1989) reports on the effect of credit risk on profitability appear clearly negative in Europe, North America and Australia. This result may be explained by taking into account the fact that the more financial institutions are exposed to high risk loans, the higher is the accumulation of unpaid loans, implying that these loan losses have produced lower returns to many commercial Banks in U.S.A(Miller and Noulas, 1997). The findings of Felix and Claudine (2008) also shows that return on equity ROE and return on asset ROA all indicating profitability were negatively related to the ratio of non-performing loan to total loan (NPL/TL) of financial institutions therefore decreases profitability.

Achou and Tenguh (2008) show that there is a significant relationship between Bank performance (in terms of return on asset) and credit risk management (in terms of loan performance). Better credit risk management results in better Bank performance. Thus, it is of crucial importance that Banks practice prudent credit risk management and safeguarding the assets of the Banks and protect the investors' interests.

Credit risk is a serious threat to the performance of Banks; therefore various researchers have examined the impact of credit risk on Banks in varying dimensions. Kargi (2011) evaluated the impact of credit risk on the profitability of Nigerian Banks. Financial ratios as measures of Bank performance and credit risk were collected from the annual reports and accounts of sampled Banks from 2004-2008 and analyzed using descriptive, correlation and regression techniques. The findings revealed that credit risk management has a significant impact on the profitability of Nigerian Banks. The study concluded that Banks' profitability is inversely influenced by the levels of Loans and Advances, Non-Performing Loans and deposits thereby exposing them to great risk of illiquidity and distress.

Epure and Lafuente (2012) examined Bank performance in the presence of risk for Costa-Rican Banking industry during 1998-2007. The results showed that performance improvements follow regulatory changes and that risk explains differences in Banks and Non-performing loans negatively affect efficiency and return on assets while the capital adequacy ratio has a positive impact on the net interest margin.

Kithinji (2010) assessed the effect of credit risk management on the profitability of commercial Banks in Kenya. Data on the amount of credit, level of non-performing loans and profits were collected for the period 2004 to 2008. The findings revealed that the bulk of the profits of commercial Banks are not influenced by the amount of credit and non-performing loans, therefore suggesting that other variables other than credit and non-performing loans impact on profits.

Felix and Claudine (2008) investigated the relationship between Bank performance and credit risk management. It could be inferred from their findings that return on equity (ROE) and return on assets (ROA) both measuring profitability were inversely related to the ratio of non-performing loan to total loan of financial institutions thereby leading to a decline in profitability. Ahmad and Ariff (2007) examined the key determinants of credit risk of commercial Banks on emerging economy banking systems compared with the developed economies. The study found that regulation is important for banking systems that offer multi-products and services; management quality is critical in the cases of loan-dominant Banks in emerging economies. An increase in loan loss provision is also considered to be a significant determinant of potential credit risk. The study further highlighted that credit risk in emerging economy Banks is higher than that in developed economies.

Al-Khouri (2011) assessed the impact of Bank's specific risk characteristics, and the overall Banking environment on the performance of 43 commercial Banks operating in 6 of the Gulf Cooperation Council (GCC) countries over the period 1998-2008. Using

fixed effect regression analysis, results showed that credit risk, liquidity risk and capital risk are the major factors that affect Bank performance when profitability is measured by return on assets while the only risk that affects profitability when measured by return on equity is liquidity risk. Ben-Naceur and Omran (2008) in attempt to examine the influence of Bank regulations, concentration, financial and institutional development on commercial Banks' margin and profitability in Middle East and North Africa (MENA) countries from 1989-2005 found that Bank capitalization and credit risk have positive and significant impact on Banks' net interest margin, cost efficiency and profitability.

Bourke's (1989) reports the effect of credit risk on profitability appears clearly negative. This result may be explained by taking into account the fact that the more financial institutions are exposed to high risk loans, the higher is the accumulation of unpaid loans, implying that these loan losses have produced lower returns to many commercial Banks (Miller and Noulas, 1997).

Ahmed, Takeda and Shawn (1998) in their study found that loan loss provision has a significant positive influence on non-performing loans. Therefore, an increase in loan loss provision indicates an increase in credit risk and deterioration in the quality of loans consequently affecting Bank performance adversely.

Some empirical literature found a negative relationship between operational efficiency and Bank's profitability (Athanasoglou et al., 2008; Goddard et al., 2009). Others authors, show a positive relationship between profitability and expenses. Molyneux and Thornton (1992) provide the evidence that Bank's expenses affect positively the European Banking profitability.

Ayadi and Boujelbene (2012) in their Banking performance study of twelve Tunisian deposit Banks over the period of 1995- 2005, notice a significant positive relation between size and Return on Average Assets proving the existence of economies of

scale in the Tunisian Banking sector. On the contrary, Ben Naceur, and Goaied (2010), show that size impact negatively on profitability which involves that Tunisian Banks operating above their optimum level. Similarly, Sinkey (1991) concludes that larger Banks are more profitable than smaller ones. So, the impact of Bank size on its profitability cannot be theoretically anticipated.

2.4.1 Summary and Knowledge Gap

From the above theoretical as well as empirical review, credit risk is affecting the performance of the Banking industry. Correspondingly, in the literature; the Bank profitability is usually expressed as a function of internal and external determinants. Various studies have been made in different countries regarding these variables. Among others, the most important internal determinants that are affecting performance include Bank Size (Age), Provision to Total Loans, Cost per Loan and Loan to Total Asset.

The studies made shows consistent results with respect to loan to total asset, Provision to Total Loans, however the empirical results for cost per loan and Bank size (Age) were mixed. Looking into the analysis of the audited financial statements for the banks for the past consecutive five years (2008-2012) depicts that, the provision to loan of the banks is above 1% which should have been the case had the entire loan and advances were under normal status i.e in alignment of the repayment modality. The maximum was 5.7% in 2008 which is even higher than National Bank tolerable limit of 5% and the lower being 2.4% in 2012. The loan to total asset has shown a decrease from 2008 to 2011 which shows a negative implication as it is one of the major source of revenue for the banking industry. Contrary however Cost per loan asset has increased.

Thus the research tried to examine the impact of credit risk on the profitability of Ethiopian commercial Banks and identifies the relationships between the Loan Loss

Provision, Loan and Advance to Total Asset, Cost per Loan and Bank Size with Banks Profitability. The research fills the gaps below that exist in the country;

Academic (Literature) gap, the studies made in the Ethiopia so far do not consider variables like Age or Size, Cost per Loan Asset in relation to performance of the banks which however were done well in different countries. Therefore the research serves as additional complement as reflecting the local banking industry context.

As the research is applied one, it is further believed that such a study with recognition of these variables would contribute to policy making and devise risk mitigating mechanisms.

CHAPTER THREE

3   RESEARCH DESIGN

The preceding chapter has indicated the literature on the determinants of bank performance and the impact of the variables on financial performance. Both theoretical and empirical reviews were made and indicated the absence of empirical studies in Ethiopia regarding bank size, cost per loan determinants and their impact on financial performance.

The purpose of this chapter is to empirically examine the quantitative effect of credit risk on the performance of Banks in Ethiopia over the period of 5 years (2008-2012) as both the independent and dependent variables are measurable. To this end multiple linear regression is used to measure the relative weighting of the independent variables considered here on a dependent variable and test the hypothesis. Using the (P) weighting, this regression model calculates how many standard deviation units are changed in the dependent variables for each standard deviation unit of change in each of the independent variables.

The chapter is arranged as follows. Section 3.1 presents the data sources and collection techniques. This is followed by population of the study considered by the research under section 3.2. Next, sampling size and techniques employed for the study explained in section 3.3. Then, data analysis and presentation techniques are explained under section 3.4. Finally, the regression model for the study is discussed under section 3.5.

3.1 Data Sources and Collection Techniques

The study is based on secondary data obtained from published statements of accounts of the commercial Banks in Ethiopia. The published accounts mainly of the balance sheet and income statements of Commercial Banks for the period 2008-2012 are used. In addition, the various annual and quarterly publications of the NBE , publications (including the annual report) of the Central Statistical Authority of Ethiopia (CSA), Ministry of Finance and Economic Development (MoFED), Ethiopian Economic Association (EEA-Ethiopia) were consulted. Also, references with regard to the existing commercial code of the country, Banking proclamations, various directives of the NBE were made.

3.2 Population of the study

The target populations of the study are all commercial Banks operating in Ethiopia which are 18 Banks. Among 18 Banks, 16 are private and 2 are government ones. Among the 16 private Banks, 4 of them are newly established i.e. below 5 years in the industry.

3.3 Sample Size and Techniques

The objective of the study is to empirically examine the quantitative effect of credit risk on the performance of Banks in Ethiopia over the period of 5 years (2008-2012) to see the short term effect of the variables for the latest period which is more favorable for private banks to avoid time bias. A non- probability method in the form of judgmental sampling technique is employed in selecting Banks into the sample.

Eight Banks were chosen from the nineteen existing commercial Banks. Data are sourced from the Annual Reports of the Banks in the sample.

> **The justifications for Banks in the sample;**

Researchers usually draw conclusions about large groups by taking a sample. Ideally, the sample should be representative and allow the researcher to make accurate estimates of the thoughts and behavior of the larger population (Leedy and Ormrod, 2005).

Out of the eighteen Commercial Banks operating in the country 16 are private and 2 are government Banks (CBE, CB). As per NBE classification the private are divided as peer 1, peer 2 and peer 3 based on their time of entry. Peer 1 consists (AIB, DB, BOA, WB, UB, and NIB), peer 2 consists (CBO, LIB, ZB, OIB, BBI, and BIB) and peer 3 consists (AB, ADIB, DGB, and EB). Out of nineteen, eight Banks were selected, three from peer one (AIB, DB and BOA) and three from peer two (CBO, LIB and ZB) and commercial Bank of Ethiopia (CBE) and Construction and Business Bank (CBB) on purposive method. Since the Banks in peer three have a lifetime below five years, which is less than the span of years used for analysis, no Bank has been selected.

As of year 2012, the asset size of the government owned banks shared 68% of the industry which on average is Birr 82 billion. The banks in peer two groups together held 23% market share with average asset size of Birr 9 billion. The small sized banks were having asset size less than 5 billion taking the remaining market share with average asset size of Birr 3 billion. Hence, based on the above classification banks that are in peer one and two in the industry are considered for the study.

Besides the composition is both from the government owned and private company with varied capital basis and hence risk exposure. Thus, taking eight banks as a sample is enough as the results can apply for the remaining banks.

3.4 Data analysis techniques

The data collected from secondary sources is presented using tables and graphs. Secondary data is analyzed using trend analysis to show to what extent Banks are exposed to credit risk. To analyze, interpret and summarize the data, the researcher has also used descriptive and inferential statistics.

Descriptive statistics is used to show the trends of Banks Return on Asset with the help of graphs. The inferential statistics used to make inference based on the findings regarding the effect and relationship between Return on Asset and Bank's the different variables indicated above. This is done by establishing a regression model.

3.5 Model Specification

The econometric model used in the study (which is in line with the literature) is given as:

$Y= P_0 + pF_{it} + e_{it}$ .... **(Equation 1)**
(Basic econometrics, 2009)

Where, Y is the dependent variable.

p_o = Constant term,

P =Coefficient of explanatory variable,

Fit= Explanatory variable and

eit=Error term (assumed to have zero mean and independent across time period.

The regression function determines the relation of **Fit** to **Y**. **p0** is the constant term and P is the coefficient of the function, it is the value for the regression equation to predict the variances in dependent variable from the independent variables. This means that if P coefficient is negative, the predictor or independent variable affects dependent variable negatively: one unit increase in independent variable will decrease the dependent variable by the coefficient amount.

In the same way, if the P coefficient is positive, the dependent variable increases by the coefficient amount. **p0** is the constant value which dependent variable predicted to have when independent variables equal to zero Finally, eit is the disturbance or error term, which expresses the effect of all other variables except for the independent variables on the dependent variable.

By adopting the econometric model as in equation above specifically to this study, equation 5 below evolves.

Performance=f (Credit risk, control variables)...................................(Equation 2)

ROA it=f (PRTL it , Z it)...(Equation 3)

By graphical test, the variables have a linear relationship and hence the equation can be stated as;

ROA it= PRTL it , + Z it +error...(Equation 4)

Therefore, substituting the control variables in the equation 4, yields equation 5 below.

Performance (ROA) = p0+ piPRTL + P2CLA+ P3LTA+ p LOG TA+ eit .... (Equation 5)

3.6 Definition of variables:

. A. Dependent variable

> **Return on Asset (ROA)** - It is a ratio that measures company earnings before interest & taxes (EBIT) against its total assets. The ratio is considered an indicator of how efficient a company is in using its assets to generate before contractual obligation must be paid. It is calculated as: ROA= EBIT/ Total Assets.

B. Independent variable

> **Provision to Total Loans (PRTL)** - proxy measure for default rate. Default rate (DR) is usually computed, the term for a practice in the financial services industry for a particular lender to change the terms of payment schedule, as a

Non Performing Loans/ Total loans. However due to the unavailability of data related to NPLs, a proxy measure is used.

> **Cost per Loan Asset (CLA)** - is the average cost per loan advanced to customer in monetary term. Purpose of this is to indicate efficiency in distributing loans to customers. CLA ratio can be calculated as: CLA Ratio= Total Operating Cost/ Total amount of loans.

> **Loan to Total Asset (LTA)** - measures the exposure level of the Bank to credit risk. Banks with higher loan to total asset ratio have high exposure to credit risk .Brewer(1989) and Altunbas(2005).

> **Bank Size (log TA) -** measures the size of the Bank in terms of its asset position. Large Banks are expected to have low credit risk that emanate from their capacity to establish sound credit risk management framework. **.**

CHAPTER FOUR

4   RESULTS AND DISCUSSION

In presenting findings and discussion of the data, this chapter is organized in a way to answer the research questions. First, the findings that answer the research questions are presented to show the relationship of the independent variables to dependent variables. Then, the result of the regression model presents how the independent variables affect the dependent variable and finally the result of the model will be discussed in line with the empirical results.

4.1   Results/Findings of the study

4.1.1   Trends and Descriptive statistics

Table 4.1 Descriptive Statistics of dependent and independent variables

The mean, standard deviation, minimum and maximum values are for eight banks over the period of five years.

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	8	2.91738	.2849763	2.7052	3.3939
PRTL	8	3.69778	1.297384	2.4246	5.6961
LTA	8	.39068	.0332796	.3484	.4332
CLA	8	1.08192	.4816557	.4966	1.791
Log TA	8	5.11582	.1823705	4.9072	5.3577

Source: Author Compilation from Banks' Financial Statements- analyzed through SPSS

Return on Asset is an indicator of how efficient a company is using its assets to generate before contractual obligation must be paid. The mean value ROA is 2.9% which is more than the international standard of ROA of 1 to 2%, Basel Committee on Banking Supervision (2001) .The standard deviation the earnings before interest and

taxes (EBIT) against total asset ratio from its mean for Commercial Banks in Ethiopia is 0.28% . The minimum and maximum values of ROA are 2.7% and 3.4% respectively.

One of the specific factors that affect profitability is the provision to total loan which is a proxy measure of the default rate of the banks. The mean value of the percentage of the provision to the total loans and advances to customers is 3.7% with the minimum and maximum value of 2.4% and 5.7%. This by large exceeds the 1% provision requirement had all loans were under pass status showing the credit risk. Thus there is problem in loan quality and hence high credit risk level persists in l the Commercial Banks.

The other variable is the Loan to total asset (LTA) which measures the level of exposure of the banks to credit risk. Bank loans are expected to be the main source of income and are expected to have a positive impact on bank performance. Other things constant, the more deposits are transformed into loans, the higher the interest margin and profits. However, if a bank needs to increase risk to have a higher loan-to-asset ratio, then profits may decrease. The mean value of loan to total asset is 0.4% with the minimum and maximum value of 34% and 43% respectively. It can be said that the variation from the mean is low as it is .033% which indicates that the commercial banks are not transferring the deposits into loan. It also provides indication of the excessive liquidity status of the Ethiopian Banks. However, the current government regulation which forced the banks to purchase bond has strained their capacity to extend loan as they wish but to put it almost in a zero risk investment.

Cost per loan asset measures the cost per loan advanced to customer in monetary term and the function of this is to point out efficiency in distributing loans to customers. The mean percentage for CLA is 1.08% with .48% variations which is not that significant.

The remaining variable is the size of the bank which is included as an independent variable to account for size related economies and diseconomies of scale. In most of the finance literature, the total assets of the banks are used as a proxy for bank size. Since the other dependent variable in the model, ROA, is deflated by total assets it is the log to total assets that is used in the model. The mean value of log TA is 5.11% with minimum and maximum value of 4.9% and 5.3% respectively.

4.1.1.1 Trends of the variables

**Figure 4.1: Trends of the variables**
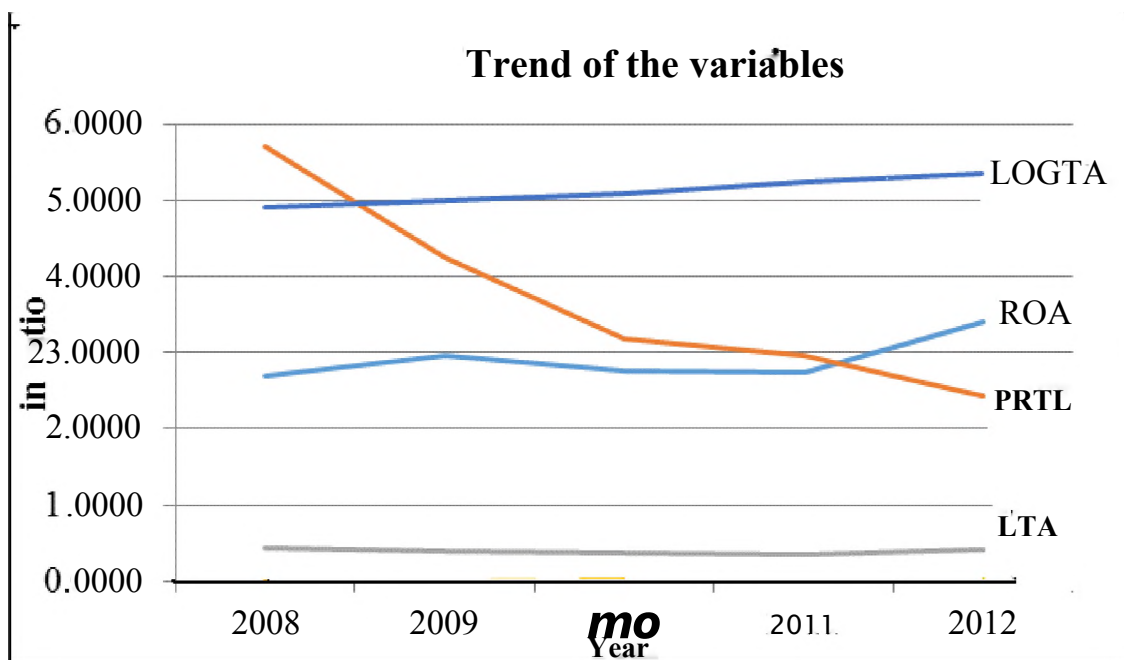
Source: Financial Statement of the Banks

The ROA shows increasing trend since 2008 but intermittent decline between the year 2009 and 2011.The provision and cost per loan asset have decreased and increased respectively during the same period the ROA decreased. Besides, the ratio of loan to total asset has decreased during the period the ROA decreased. The decrease in loan to total asset indeed reduce the exposure to the credit risk.

The size variable shows increasing trend continuously for the period concerned.

Figure 4.2 Provisions to Total Loans

Trend of the variables
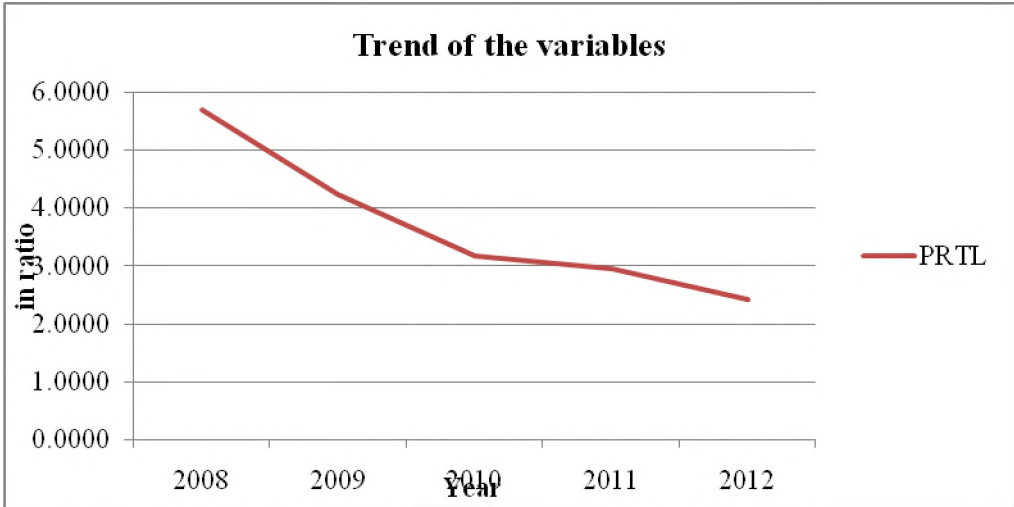
Source: Financial Statement of the Banks

Provisions to total loans improvements depicted in the graph as it is decreasing from 5.7% in the year 2008 to 2.42% in the year 2012. And almost the graph is linear. . The decrease in provision, though it is above the 1% requirement and still a lot to do, is an indication that credit risk level is also reducing..

Figure 4.3 Loans and Advance to Total Assets
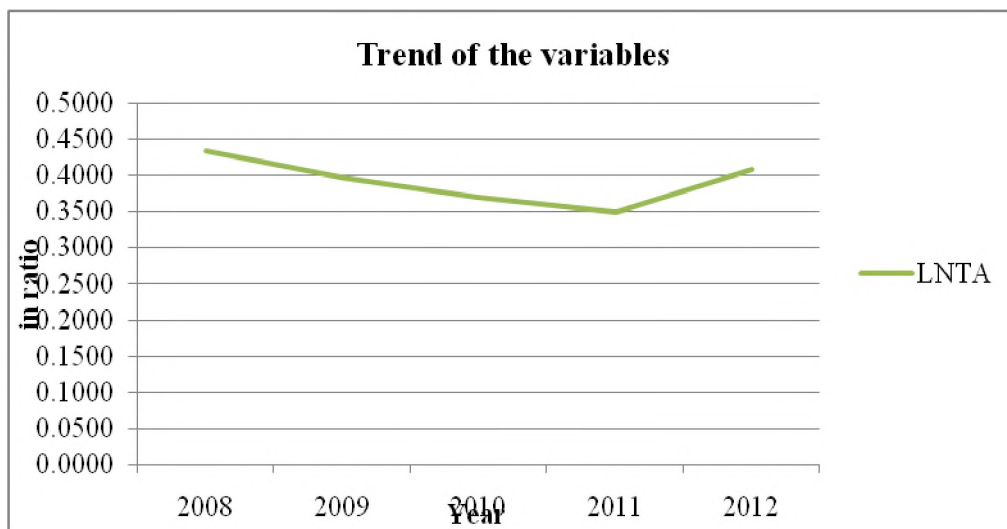
Source: Financial Statement of the Banks

Not only that the proportion of Loan to Total asset is low but also decreased from the year 2008 from 43% to 34% in the year 2011, this is partly because of the effect of the policy framework which require the purchase of government bond upon disbursement of a new loan to customer which is indeed low interest earning but low risk investment.

Figure 4.4 Bank Size (Log TA)

Trend of the variables
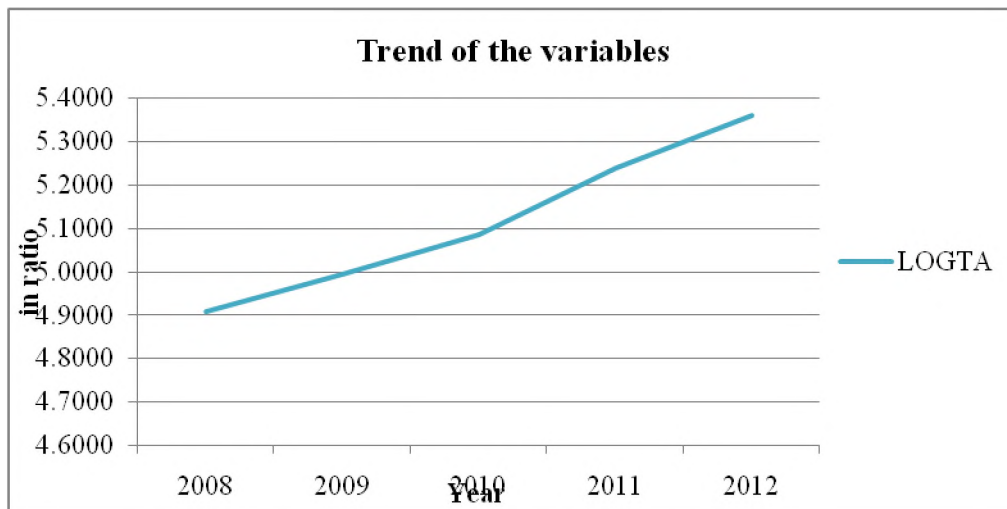
Source: Financial Statement of the Banks

The Log TA increases from 4.9% in the year 2008 to 5.4% in the year 2012. Thus the bigger the size of the banks, the better they would be to utilize the economies of scale and reduce the credit risk. but the growth should be without compromising the sound credit planning of the banks.

Figure 4.5 Cost per Loan Asset (CLA)
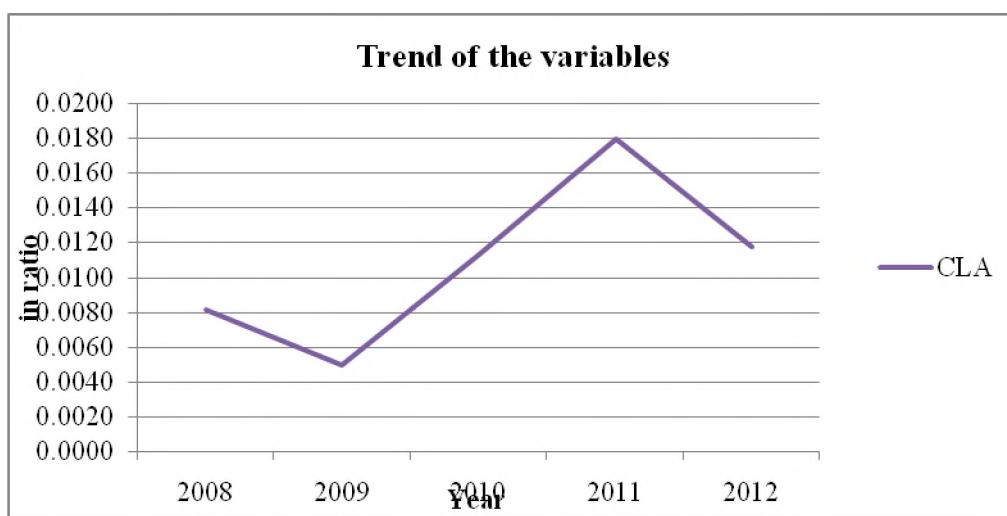
Source: Financial Statement of the Banks

There is a decrease in cost per loan asset from year 2008 to 2009 which has reached its lowest point of .5% but later it has increased to 1.8% in the year 2011. During the same period the cost per loan increases, the graph for ROA shows declining trend as depicted in the Figure 4.1 above. . Thus, banks need to further improve their efficiency in terms of distributing cost to the customers.

Figure 4.6 Returns on Asset (ROA)
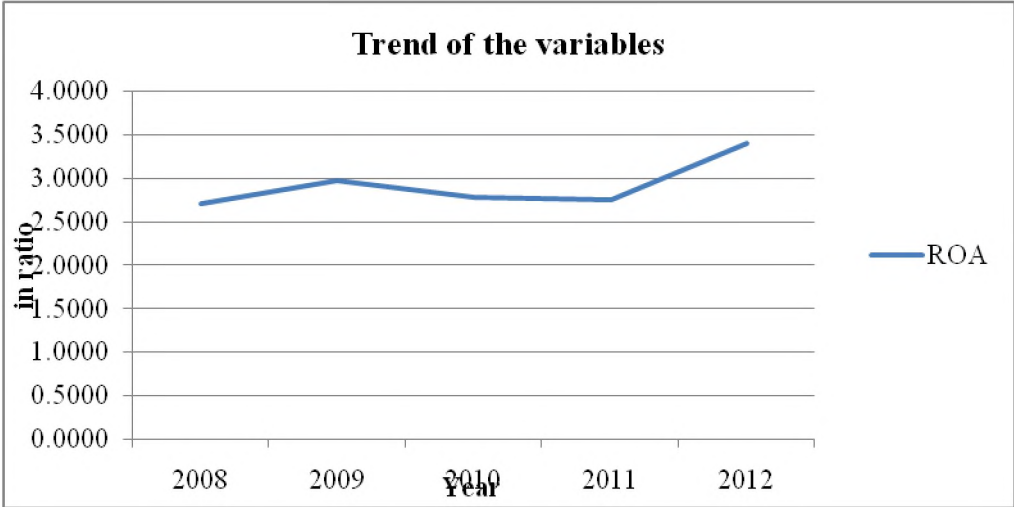
Source: Financial Statement of the Banks

The ROA shows increasing trend since 2008 but intermittent decline between the year 2009 and 2011.The decrease in provision, cost per loan asset, loan to total asset might have positive or negative impact on ROA which will further be checked with the regression model later.

4.1.2 Regression Analysis

The model estimated in the regression is mostly pointed out variables that have close link with credit risk. Nevertheless, there is a consideration for the cost of lending and bank size aspect in order to explain the impact of experience in lending which has high association with the age and bank size. Also, the impact of the cost efficiency parameter on performance parameter (RoA) is considered so as to assess the impact of non-provision costs on the profitability of Banks. The variable tested in the study includes:

Return on Asset (ROA)

Loan to Total Asset (LTA)

Provision to Total Loans (PRTL)

Cost per Loan Asset (CLA)

Bank Size (log TA)

4.1.3 Analysis of Variance (ANOVA)

The ANOVA table for the selected variables shows the explanatory variables in the regression model are significant in explaining the impact of credit risk on performances. The calculated F value appears larger than the significance value. In other words the calculated significance value stood below 0.05.

As shown in the table 4.2 the calculated significance value (0.0029) is lower than the expected significance value (0.05).

Table 4.2: ANOVA

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	42.8642905	4	4 10.7160726	5	.0029
	Residual	.016084387	4	1 .016084387		
	Total	42.8803749	8			
a. Dependent Variable: ROA , Predictors: (Constant), LTA, PRTL, CLA, LOGTA						

Source: Authors Compilation from the Banks' financial statements

4.5. Explanatory Power of the Model

The coefficient of determination, the R and the R-square is relatively high witnessing the high explanatory power of the model. As shown in table 4.3, the adjusted R-square figure is 0.7086 revealing that around 70% of the impact of credit risk is explained by the variables in the model. This is significantly high.

Table 4.3: Explanatory Power of the Model

Model Summary				
Model	R	R Square	Adjusted R	Std. Error of
Explanatory Power	0.8801	0.7746	.5943	.80055

Source: Authors Compilation from the Banks' financial statements

4.1.4 Estimation

The table below shows the estimation result of the endogenous variables in the model. The result can be presented in the model form as follows:

ROA= 0.5435 - .2304 PRTL + 6.1083LTA - 23.6571CLA +.3204LOGTA

The beta coefficients for provision to total loan and cost per loan asset are negative. This implies an inverse relationship between the stated variables and performance measure, RoA. Thus a unit change for provision to total loan and per loan asset have an inverse effect in return of asset to the extent of 0.23 and 23.66 respectively. The surprising result is that the non-provision cost variable coefficient is larger than the provision effect.

The loan to total asset and bank size has a positive effect on return on asset. The coefficient of the two variables revealed that the impact of the loan to total asset is significant than the bank size.

Table 4.4: Estimation

Multiple Linear Regression Testing

Bj- Coefficients testing

H0: pj = 0;

H1: pj ^ 0; otherwise

The test statistics for the null hypothesis is as follows:

T= pj /se (Pj) ~ ta/2, n-1 thus the null distribution follows the student T distribution or

Where se (Pj) = SE= standard deviation of residuals/ summation of x2

Decision rule

If T > ta/2, n-1 ; then we reject the null hypothesis and accept the alternative hypothesis that the parameter estimate or the driver in question is significant to affect the credit risk of the banks.

Otherwise, we accept the null hypothesis that the driver is not significant.

ROA	Coef.	Std. Err.	t	Significance level@	[95% Conf.}	
PRTL	-.2304296	.0777593	-2.96	0.000	-1.218456	.7575964
LTA	6.108335	3.473785	1.76	0.000	-38.03029	50.24696
CLA	-23.65706	22.11636	-1.07	0.035	-304.6721	257.358
LOGTA	.3203612	.2640722	1.21	0.039	-3.034994	3.675716
Cons	0.5345			0.047		

@ 95% confidence level.

4.1.5 **Empirical Result vs the internal determinants**

As explained above, the identified credit risk related variables appear significant to affect profitability in the Ethiopian banking industry. These variables are the provision to total loans, loan to total asset, cost to total loans and natural logarithm of total asset. Detail description of each item is as shown below.

The coefficient of the ratio of provision to total loans (PRTL) variable in the regression model which is an indicator of the level of credit risk has negative effect on profitability. In addition the variable is significant in explaining the effect of credit risk on the return on assets of Ethiopian commercial banks. Also, this study finding is supported in the result of many literatures. Bourke (1989), (Miller and Noulas, 1997), Felix and Claudine (2008) also found out the same result, the highest risk facing a bank is loses derived from delinquent loans and it highly affects performance of Banks. Hence, the deterioration in credit quality reduces ROA and ROE. However, there are some studies, (Altunbas, 2005) which yielded a positive relationship between PRTL and profitability. Such situation can only happen in cases of countries having a well-managed credit risk as revealed in the lowest share of nonperforming loans from their loan books.

The ratio of loans to total asset which mainly measures bank's exposure to credit risk through converting the deposit liabilities they collected from customers to pertinent borrowers appear to have positive relationship with the profitability of Banks. In addition, the coefficient of the variable is significant and with large values. This is in line with the expected result because as revealed in the balance sheet, Ethiopian banks are mainly engaged in intermediation business. Other income generating activities including investments are not widely practiced and banks highly relay on interest income from loans as the main and the dominant source of income. Fee based services are few and cannot yet replaced or diluted the share of income from intermediation activities. The study finding is also supported by literature Brewer (1989), has found out positive relationship of the loan total asset with the profitability measures. Counter

findings are also revealed in the literature where (Altunbas, 2005) has found out that the size of the loan in the total asset has a negative relationship with bank's profitability. This might result from poor credit quality.

The cost to loan ratio, which reveals the intermediation efficiency in terms of cost, appears most important determinant variable on the profit of banks. The variable is incorporated in the model to compare the impact of provisions vs non-provision costs on the profitability of banks. The surprising result is that this variable appears significant to affect bank's performance. Hence, this questions the Bank's capacity to undertake lending at lowest possible cost and instigated further research work on the efficiency of Banks in conducting intermediation activities. Obviously the variable has a negative relationship with the profitability measure. Literature also supports the result of this finding. For instance, (Athanasoglou et al.,2008; Goddard et al.,2009) has found out the negative relationship between cost of lending and profitability for banks in other country.

The other variable the natural logarithm of total asset which is usually used measure for bank's size appear to have a positive relationship with performance. The addition of the variable in the model is explained by: in the Ethiopian context bank size usually has association with the age of banks. It's assumed that as banks' stay in the industry increases their exposure to credit risk management will increase due to the learning curve effect. . However, the counter argument that can arise might be bank's staying long will have high level of credit risk exposure due to high stock of loans. So, despite such controversies, the study aims to explore which effect is by large revealed in the Ethiopian banking system. The result of the study is that bank size has positive impact on profitability, hence supporting the argument that as bank's stay in the industry increases, their credit risk management system enables them to have limited level of credit risk exposures. The result also is supported by some literature, Smirlock (1985), Ayadi and Boujelbene(2012),Pasiouras and Kosmidou (2007) found out that bank size appear to be an important variable to affect profitability in Ethiopian banking industry.

On the counter, (Berger et al., 1987), Ben Naceur, and Goaied (2010), study shows that bank size doesn't have impact on credit risk and performance of banks.

CHAPTER FIVE

5   CONCLUSIONS AND RECOMMENDATIONS

5.1   Conclusions

The paper investigated the impact of credit risk on the performance of Ethiopian banks considering mainly variables related to lending activities. The coefficient of the ratio of provision to total loans (PRTL) variable in the regression model which is an indicator of the level of credit risk has negative effect on profitability. In addition the variable is significant in explaining the effect of credit risk on the return on assets of Ethiopian commercial banks.

The ratio of loans to total asset which mainly measures bank's exposure to credit risk through converting the deposit liabilities they collected from customers to pertinent borrowers ,by considering seriously the *7 "C's" of Credit,* appear to have positive relationship with the profitability of Banks. In addition, the coefficient of the variable is significant and with large values.

The credit administration cost (cost to loan ratio), which reveals the intermediation efficiency in terms of cost, appears most important determinant variable on the profit of Ethiopian commercial banks. The variable is incorporated in the model to compare the impact of provisions vs non-provision costs on the profitability of banks. The surprising result is that this variable appears significant to affect bank's performance.

The other variable, the natural logarithm of total asset (economies of scale) which is usually used to measure for bank's size appears to have a positive relationship with performance. The addition of the variable in the model is explained by: in the Ethiopian context bank size usually has association with the age of banks. It's assumed that as

banks' stay in the industry increases their exposure to credit risk management will increase due to the learning curve effect.

The study therefore finds that the selected variables : the provision to total loans, loan to total asset, cost to total loans and natural logarithm of total asset have significant effect on the performance of Banks. However, a certain variation in the magnitude and direction of their effect on the selected profitability measure, Return on Asset.

5.2 **Recommendations**

Based on the study it is recommended that:

Ethiopian banks need to develop their credit risk management capacity by considering the practice of other developing countries which have better experience in the industry- the high level of provision held for poorly performing assets mainly loans and advances is affecting the profitability of Banks. Hence, improving performance require to institute a strong credit risk management system that can efficiently identify bankable borrowers and a system that can monitor their performance after the loan is granted. In addition, the regulatory framework should support and make sure banks to have strong credit risk management practice. This can be done through strengthening the internal risk management system to assist the identification, measurement and monitoring of credit risk as well as directing the supervision focus towards credit risk.

There should also be control over overhead costs related to lending- the study's finding on the large impact of non-provisions related costs entails banks' to put in place a cost control mechanisms for intermediation activities.

Increasing the loan book size should be a priority task- the significant effect of the loan to total asset revealed that increasing the loan book size coupled with enhancing the intermediation activity should be the focus of the Ethiopian banking sector without compromising the sound credit planning that could arise as a result of diseconomies of scale.

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DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of Dr. Degefa Duressa. All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

Name   Signature & Date

ENDORSEMENT

This thesis has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.

Advisor   Signature & Date