



ST.MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES
GENERAL MBA PROGRAM

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

BY
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ID: - SGS/0218/2007A

AUGUST 2016
ADDIS ABABA, ETHIOPIA

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**“A THESIS SUBMITTED TO ST. MARY’S UNIVERSITY, SCHOOL OF
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DEDICATION

To Dr. AlemneshWubeshet my wife who has helped me to reach here.

DECLARATION

I, the under signed, declare that this project paper is my original work under the guidance of Dr. Sewale Abate and has not been presented for a degree in any other University to the best of my knowledge, and that all source of materials used for the project have been duly acknowledged.

Name: GeletawAschis Signature: _____

St. Mary's university, Addis Ababa

August 2016

ENDORSEMENT

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

Advisor

Signature and Date

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LIST OF ABBREVIATIONS/ACRONYMS

AB-Abay bank
AIB-Addis International Bank
LIB-Lion International Bank
AIB-Awash International Bank
BIS-Bank of International Settlement
BOA –Bank of Abyssinia
BIB-Birhan International Bank
BUIB-Buna International Bank
CAD-Capital Adequacy ratio
CBE-Commercial Bank of Ethiopia
CBO-Cooperative Bank of Oromia
DB-Dashen Bank
DGB-Debut Global Bank
EB-Enact Bank
ISO-International Organization for Standardization
LDR-Loan to deposit ratio
LLP-Loan loss provision
NPLR-Non performing loan ratio
NIM –Net interest Margin
NIB-Nib International Bank
NBE-National Bank of Ethiopia
OIB-Oromia International Bank
ROE-Return on Equity
ROA-Return On asset
WB-Wogagen Bank
UB-United Bank
ZB-Zemen Bank

ABSTRACT

The objective of the study is empirically to examine the impact of credit risk on financial performance in Ethiopian Commercial banks. This study presents the level of credit risk impact which is measured by loan to deposit ratio and provision against loan outstanding have on financial performance which is measured by return on asset and return on equity. It consider all the 17 commercial banks that currently operate in Ethiopia by considering their financial performance for five years from 2011-2015. The researcher used SPSS 20 for analysis and interpretation of data and regression to see the strength of relationship and correlation how strongly they are related. The results of the study implied that the independent variables have positive impact on the dependent variables. Through the period considered the loan to deposit ratio has the significant positive impact on return on asset and return on equity than loan loss provision. The thesis has seen the trends of the variables and in the period considered return on asset has shown the highest fluctuation. The researcher recommends that Bank should manage better their LDR ratio because as this ratio increases more and more, the bank becomes more and more risky as the loan amount would be equal or sometimes greater than the deposit amount. As a result banks suffer with a liquidity problem and that may also makes the bank risky.

Key word: Credit risk, bank performance, Loan to deposit, loan provision, ROA and ROE

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Risk is the impact of uncertainty on objectives'(ISO 31000-2009). In this definition, uncertainties include events (which may or may not happen) and uncertainties caused by ambiguity or a lack of information. It also includes both negative and positive impacts on objectives. Various risks originate due to the uncertainty arising out of various factors that influence an investment or a situation which could be classified in to two major categories that is systemic risk and un-systemic risk. Most categories of risk have a financial impact, in terms of extra costs or lost revenue. But the category of financial risk refers specifically to the money flowing in and out of business, and the possibility of a sudden financial loss. Financial risk has not limited to credit risk rather it includes exchange rate risk, interest rate risk, liquidity risk, operations risk, payment system risk, refinancing risk, reinvestment risk, settlement risk, and sovereign risk. From this financial risk credit risk is the single most financial risk that financial institution exposed and has the largest and sever impact if it happens because it is the largest and the single earning engine of financial institution in general. Farther more, credit risk is the risk that a borrower or counterparty will fail to meet obligations in accordance with agreed terms of a contract. Hence the default of a small number of customers may result in a very large loss for the bank (Gestel&Baeseems, 2008).

The relationship between credit risk and financial performance of commercial banks has been the concern of emerging studies both in developed and developing countries. The management of the risk related to that credit affects the profitability of the banks (Li and Zou, 2014). The absence of effective credit risk management led to occurrence of the banking crisis, and inadequate risk management systems caused the financial crisis Njanike (2009). Nawaz and Munir (2012) found that credit risk management effected on the banks' profitability, and they recommended that management should be cautious in setting up a credit policy that might not negatively affect profitability.

Kurawa and (2014) revealed that the variables of credit risk impact on the banks profitability. This research improves on some of the existing studies, in that it investigates impact of credit risk and its indicators on financial performance of Ethiopian commercial banks using certain individual indicators of credit risk. Risk management is mainly focused on reducing earning volatility and avoiding large losses. One proper risk management procedure needs to identify the risk, measure and quantify risk then develop strategy to manage risk (Van Gestel&Baesens, 2008).

To the best of the researcher knowledge studies on the relationship between credit risk and financial performance of Ethiopian commercial banks are non existences or few by considering loan to deposit ratio as credit risk deriver. Of the study conducted in Ethiopia TibebuTefera (2011) and Mekasha (2011) each studied the effect of credit risk on the performance of commercial banks in Ethiopia. Both used secondary data from annual reports of commercial banks and survey of primary data from bank managers and officers which similarly showed that there is a negative relationship between credit risk and performance of commercial banks in Ethiopia.

The current study therefore aimed at contributing to the literature gap on the impact of credit risk on financial profitability of commercial banks in Ethiopia by taking all commercial banks that operate in the country so that a better picture of relationship between credit risk and performance can be portrayed for commercial bank managers and policy makers and by using variable that has not been considered by many researchers as credit risk deriver. Further, the study will contribute to the literature by dropping the context of Ethiopian private commercial banks using five year data up to the year 2014/15. The researcher also believes that there is no research conducted in Ethiopia by taking provision for doubtful debt to loan and loan to deposit ration as measuring credit risk and ROA and ROE as a measure of profitability. Hypothesis has developed to see the relationship between the variables and also correlation test and linear regression test has also been conducted.

1.2.STATEMENT OF THE PROBLEM

Existence of credit risk is considered by researchers as a major determinant of failure or success of a financial institution and managing it properly determine success of financial for banks. Across the banking industry whether domestic or international, the most single risk that erodes the mass of their profit is credit risk. Credit risk has affected much the commercial banks in Ethiopia than other risks which necessitate much attention to be given by the banks to understand its effect (NBE, 2009). This research work seeks to bring to light the need for financial institutions to pay attention to all determinates of credit risk as it is the major determinant of financial earning. There is the general belief that the banking sector in Ethiopia is highly regulated and collateral based and seems relatively stable. In managing their risk banks in our country are not proactive which can be evidenced by the fact that banks implement even the concept after the NBE issue guideline for establishing independent body to manage the major types of risk. A study conducted by NBE in 2009 about risk management of Ethiopian banks 73 % of the banks was not trained in any risk management related topic and 60% of the banks have no strategy for credit risk management. That research also identified that credit, operational and liquidity risks were key bank risks over the last two years before 2009 and would continue to be so over the next six year. But when we see the empirical studies; Engdawork T.(2014) in his research entitled the impact of credit risk on financial performance of Ethiopian commercial banks conducted using one dependent variable that is ROA using independent variables like provision to total loans ,loans to total assets and cost per loans in Eight commercial banks. Misker Buzayehu (2015) in his research entitled the impact of credit risk on financial performance of Ethiopian commercial banks conducted using one dependent variable that is ROE and various independent variables in eight commercial banks. So this study will fill the gap by considering the effect of LDR and provision as proxies of credit risk. Up to the best knowledge of the researcher, in Ethiopia context it's not possible to get a study which took all commercial banks to see the impact of credit risk on financial performance on the above mentioned variables. This study, therefore, attempted to fill this research gap.

1.3. Research question

Therefore, this research tries to answer the following main questions from the perspective of Ethiopian Commercial banks

- 1) Does provision have impact on the banks' financial performance which is measured by ROA and ROE?
- 2) What look like the impact of LDR on financial performance which is measured by ROA and ROE?

1.4. Objectives of The Study

1.4.1. General Objective the Research

The general objective of the study is to examine the impact of the credit risk on the financial performance of Ethiopian commercial banks.

1.4.2. Specific Objectives of The Study

- To examine the impact of loans loss provision on ROA.
- To examine the impact of loans loss provision on ROE
- To examine the impact of loans and advances to deposit ratio on ROA
- To examine the impact of loans and advances to deposit ratio on ROE
- To examine the relationship between loans loss provision and ROA.
- To examine the relationship between loans loss provision and ROE.
- To examine the relationship between loans and advances to deposit ratio and ROA.
- To examine the relationship between loans and advances to deposit ratio and ROE.

1.5. Limitation of the study

The study focused on credit risk as the major determinate of financial performance and did not include other risks that the NBE considered risks next to credit risk in the bank industry of the country that is market risk, operational risk and liquidity risk but if one might see their annual reports there is only about credit risk determined quantitatively and banks are not started to establish operational risk data base and the interest rate and the exchange rate which determine market risk are centrally regulated. Due to the confidentiality in getting

information in NPLR the researcher only used two other variables as independent.
Research hypothesis

Among other risks faced by banks, credit risk plays an important role on banks' financial performance since a large chunk of banks' revenue accrues from loans from which interest margin is derived (Kolapo, Ayeni&Oke, 2012, p.31). Up to the best knowledge of the researcher, in Ethiopia context it's not possible to get a study which took all commercial banks to see the impact of credit risk on financial performance by taking in to consideration LLP and LDR as independent variables and ROA and ROE as dependent variables and that could clearly explain the relationship of credit risk and financial profitability of commercial banks in Ethiopia.

Based on the study problem, its questions and its objectives, the hypotheses has formulated as follows: Loan loss provision and loan to deposit ratio are proxies of credit risk and ROA and ROE are proxies of financial.

Ho: Loans and advances provision and loan to deposit ratio have positive impact on ROA in commercial banks in Ethiopia.

Ha: Loans and advances provision and loan to deposit ratio have no positive impact on ROA in commercial banks in Ethiopia

H0: Loans and advances provision and loan to deposit ratio have impact on ROE in commercial banks in Ethiopia

Ha: Loans and advances provision and loan to deposit ratio have no impact on ROE in commercial banks in Ethiopia

1.6.Operational definition of Terms and Concepts

Credit risk refers to the probability of loss due to a borrower's failure to make payments on any type of debt.

Bank financial performances: Financial performance is a measure of how well a bank can use assets from its primary mode of business and generate revenues.

Loan Loss provision: A loan loss provision is an expense that is reserved for defaulted loans or credits. It is an amount set aside in the event that the loan defaults.

Loan to Deposit Ratio the loan/deposit ratio helps assess a bank's liquidity, and by extension, the aggressiveness of the bank's management. If the loan/deposit ratio is too high, the bank could be vulnerable to any sudden adverse changes in its deposit base. Conversely, if the loan/deposit ratio is too low, the bank is holding on to unproductive capital and earning less than it should.

Return on Asset is the net income for the year divided by total assets, usually the average value over the year.

Return on Equity is an internal performance measure of shareholder value, and it is by far the most popular measure of performance, since: (i) it proposes a direct assessment of the financial return of a shareholder's investment; (ii) it is easily available for analysts, only relying upon public information; and (iii) it allows for comparison between different companies or different sectors.

1.7. Significance of the study

First the study will be useful for Ethiopian commercial banks in order to understand the impact of credit risk measured by provision and LDR on their financial profitability which in return measured by ROA and ROE. Second it helps to know how much the independent variables explain the dependent variables in order to prioritize the degree of impact on profitability. Third the study can be used by other researcher as a reference who wants to study further in this or related areas or to serve as a reading material for anyone who is interested. Fourth it give alert that from the most commonly used variables in our country that determine profitability that is CAD and NPLR this research takes other variables that is provision and loan to deposit ratio as a determinant of profitability. Last but not least this research will alert bankers tomorrow's problems today in order to get the intended financial performance as credit risk management can be said it is at infant stage in the banking industry of the country.

1.8. Scope of The Study

In assessing the impact of credit risk on financial performance seventeen commercial banks over five years (2010/11-2014/15) have been considered as total population. The researcher use five years financial data of the commercial banks because of the NBE conducted the banking industry survey report on risk management in 2009 so the researcher take this year as a starting point to have five year data.

These banks are Commercial Bank of Ethiopia(CBE), Awash International Bank(AIB),Dashen Bank(DB),Cooperative Bank of Oromia(CBO),Oromia International Bank(OIB), Wogagen Bank(WB) ,Nib International Bank(NIB),United Bank(UB) ,Bank of Abyssinia(BOA),Buna International (BUIB), Lion International Bank(LIB), Zemen Bank(ZB), Birhan International Bank(BIB), Abay Bank(AB), Addis International Bank(AIB), Dehub Global Bank (DGB) and EnatBank(EB).

1.9.Organization of the Study

The study is organized in to five chapters. The first chapter deals with background of the study, statements of the problem, objective of the study, the research questions, and scope and significant of study, limitations of the study, and organization of the research. The second chapter presents previous related research done on credit risk and financial performance in the country and outside country (empirical study) and theoretical background of issues related. The third chapter explains types and source of data that have been used for the study, method of statistical data analysis tools. The fourth chapter presents the analysis and result of the study that have been arrived using SPSS and inferential statistical tools. The last chapter presents conclusion and recommendation of the study.

CHAPTER TWO

REVIEW OF RELATED LITERATURES

The purpose of this research is to explore whether there is an impact of credit risk on financial performance of commercial banks in Ethiopia. In line with this chapter were discussed the concepts and definitions of credit risk, and concepts and theories of financial performance of Ethiopian banks.

2.1. Concepts and Definitions of Credit Risk

2.1.1. 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”. Risk is the position where the actual return of an investment is different than expected return. Risk means the possibility of losing the original investment and the amount of interests accrued on it.

2.1.2. 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 (NBE 2010). Credit risk is the risk that a borrower defaults and does not honor its obligation to service debt. It can occur when the counterpart is unable to pay or cannot pay on time (Gestel and Baesens, 2008). 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). Credit risk is the risk that a borrower defaults and does not honor its obligation to service debt. It can occur when the counterpart is unable to pay or cannot pay on time (Gestel and Baesens, 2008).

Credit risk denotes to the risk that a borrower will default on any type of debt by failing to make required payments. The risk is primarily that of the lender and includes lost principal and interest, disruption to cash flows, and increased collection costs (BIS).

Credit risk is one of significant risks of banks by the nature of their activities. Through effective management of credit risk exposure banks not only support the viability and profitability of their own business but also contribute to systemic stability and to an efficient allocation of capital in the economy (Psillaki, Tsolas, and Margaritis, 2010). 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. 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.

Koehn and Santomero (1980) 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).

2.2.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).

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), Molyneux and Forbes(1995) argued that price measures of performance create problems of cross subsidization of multiproduct firm. 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).

2.2.1. 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).

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 Goaid (2010), show that size impact negatively on profitability which involves that Tunisian Banks operating above their optimum level. 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).

Delis Dietrich 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. CLA ratio can be calculated as: $CLA \text{ Ratio} = \frac{\text{Total Operating Cost}}{\text{Total amount of loans}}$.

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., 2005). 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 Ben Naceur (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, Ben Naceur 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.Review of Empirical literature

A lot of researchers examined the impact of credit risk on financial performance using different methods in deferent countries. They came to different conclusions depending on the country, method and time of study. This section presents the various studies done, the methods used, the countries of research and the results obtained.

There are numerous researches on the impact of credit risk on financial performance, and how could the impact of credit risk management assist in reducing the possibility of failure and restricting the uncertainty of achieving the required financial performance. Most of these researches support the notion that there is a positive relationship between effective credit risk management and banks' profitability, and some of these studies support the notion that there is a negative relationship between them, as follows.

The impact of credit risk on profitability appears 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).Chou 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. (2000-2010).

A slight different result is obtained by the research conducted with a title of Credit Risk and Commercial Banks' Performance in Nigeria: A Panel Model Approach (KOLAPO, T. Funso et-al, 2012). The study carried out an empirical investigation into the quantitative effect of credit risk on the performance of commercial banks in Nigeria over the period of 11 years (2000-2010). The traditional profit theory was employed to formulate profit, measured by Return on Asset (ROA), as a function of the ratio of Non-performing loan to loan & Advances (NPL/LA), ratio of Total loan & Advances to Total deposit (LA/TD) and

the ratio of loan loss provision to classified loans (LLP/CL) as measures of credit risk. Five commercial banking firms were selected on a cross sectional basis for eleven years. Panel model analysis was used to estimate the determinants of the profit function. The results showed that the impact of credit risk on bank performance measured by the Return on Assets of banks is cross-sectional invariant. The impact is similar across banks in Nigeria, though the degree to which individual banks are affected is not captured by the method of analysis employed in the study.

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. Felix and Claudine (2008) investigated the relationship between bank performance and credit risk management. 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. 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. Hosna Manzura and

Juanjuan (2009) found that Non-performing loans indicator affected on profitability as measured by (ROE) more than capital adequacy ratio, and the effect of credit risk on profitability was not the same for all the banks included in their study. Njanike (2009) found that the absence of effective credit risk management led to occurrence of the banking crisis, and inadequate risk management systems caused the financial crisis. Aduda and Gitonga (2011) found that the credit risk effected on profitability at a reasonable level. Aruwa and Musa (2012) investigated the effects of the credit risk, and other risk components on the banks' financial performance. They found a strong relationship between risk components and the banks' financial performance.

Gakure, Kolapo, Ayeni and Oke (2012) showed that the effect of credit risk on bank performance measured by ROA was cross-sectional invariant, though the degree to which individual banks were affected was not captured by the method of analysis employed in the study. Poudel (2012) explored the various credit risk indicators that affected banks' financial performance; he found that the most indicators affected the bank financial performance was the default rate. Musyoki and Kadubo (2012) seek to assess various parameters pertinent to credit risk as it affects banks' financial performance. They concluded that credit risk had an inverse impact on banks' financial performance; however the default rate was the most predictor of bank financial performance, on the contrary of the other indicators of credit risk. Nawaz and Munir (2012) found that credit risk effected on the banks' profitability, and they recommended that management should be cautious in setting up a credit policy that might not negatively affect profitability.

Ogboi and Unuafe (2013) concluded that bank's financial performance had been affected by sound credit risk management and capital adequacy. Abiola and Olausi (2014) revealed that banks' profitability had been affected by credit risk management. Singh (2013) revealed that Effective risk management was critical to any bank for achieving financial soundness. Idowu and Awoyemi (2014) revealed that credit risk management had an effect on the banks' profitability. I and Zou (2014) found that the indicator of Nonperforming loans had positive impact on banks profitability as measured by return on equity (ROE) and return on assets (ROA). Kurawa and Garba (2014) revealed that the variables of credit risk management effected on the banks profitability. Engdawork T.(2014) in his research entitled the impact of credit risk on financial performance of Ethiopian commercial banks conducted using one dependent variable that is ROA using independent variables like

provision to total loans, loans to total assets and cost per loans in Eight commercial banks found that 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. Minyahil Assefa(2013) the performance of Commercial banks in Ethiopia mainly changes in accordance with NBE directives. The directives imposed at different time affected all components of CAMEL negatively or positively. However, regardless the tight monetary directives of NBE their performance had been improved. Habtamu N. (2012). Found that capital adequacy, managerial efficiency, bank size and macro-economic factors; levels of GDP and regulation have a strong influence on the profitability of private commercial banks in Ethiopia. Capital adequacy, Asset Quality and Management efficiency have negative relation whereas earning and liquidity shows positive relationship with both profitability measures with strong statically significance except Capital Adequacy which is insignificant for ROA whereas Asset quality for ROE Mulalem Gerahun(2015).

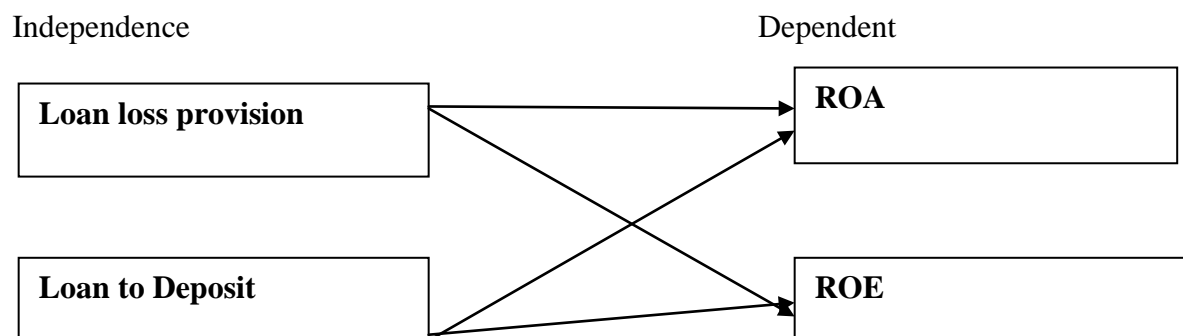
Misker Buzayehu (2015) in his research entitled the impact of credit risk on financial performance of Ethiopian commercial banks conducted using one dependent variable that is ROE and various independent variables in 8 commercial banks found that credit risk which is measured by nonperforming loan ratio had a significant inverse impact on banks financial performance and capital adequacy also same impact on profitability and loan to deposit ratio and bank size have a positive significant impact on banks financial performance.

Summary and Knowledge Gap

This research improves on some of the existing studies, in that it investigates by taking the provision and loan to deposit ratio as independent variables to the researcher knowledge there has not been any study conducted by taking these two independent variables with the dependent variable which are ROA and ROE by including all commercial banks by using five years data in Ethiopia. For instance Engdawork T.(2014) in his research entitled the impact of credit risk on financial performance of Ethiopian commercial banks conducted using one dependent variable that is ROA using independent variables like provision to total loans ,loans to total assets and cost per loans in Eight commercial banks finds that 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. Misker Buzayehu (2015) in his research entitled the impact of credit risk on financial performance of Ethiopian commercial banks conducted using one dependent variable that is ROE and various independent variables in 8 commercial banks found that credit risk which is measured by nonperforming loan ratio had a significant inverse impact on banks financial performance. Up to the best knowledge of the researcher, in Ethiopia context it's not possible to get a study which took all commercial banks to see the effects of credit risk on financial performance on the above mentioned variables.

2.5 Conceptual framework



The above conceptual frame work depicts a framework of the relationships between determinates of Credit Risk impact on financial performance (ROA and ROE) of Commercial Banks in Ethiopia.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

This chapter of the research report consists of the research design, study population, sample size and selection, sampling techniques procedure, sources of data, data collection methods, data collection tools and instruments, data processing, data summary and presentation data analysis.

3.1. Research Design

Of the three types of research design based on specific objectives that is descriptive, exploratory and explanatory the explanatory study has used for this research because explanatory research is typically concerned with understanding the relationship between things, and how they are in the past and the future and attempts to connect ideas to understand cause and effect. This often takes the form of a quantitative approach so that statistical tests can be conducted and based on its approaches quantitative research approach describes this research.

3.2. Population And Sampling Techniques

3.2.1. Study Population

A population study is a study of a group of individuals/institutions or any other things taken from the general population who share a common characteristic. In this study the population has all commercial banks in Ethiopia Hence, the result obtained from this study are a reference for all banks which are working in the industry. As Ethiopia does not allow any foreign owned banks to invest and work in the industry the owner of the banks in the industry are government and Ethiopians.

3.2.2. Population Size

There are 16 privately owned commercial banks and 1 government owned commercial bank. Hence, the target population of this study is seventeen commercial banks in Ethiopia which are: Commercial Bank of Ethiopia, Awash International Bank, Dashen Bank, Bank of Abyssinia, Wegagen Bank, United Bank, Lion International Bank, Cooperative Bank of Oromia, Nib International Bank, Zemen Bank, Oromia International Bank, Bunna Bank, Birhan International Bank, Abay Bank, Addis International Bank, Dehub Global Bank and Enat Bank.

3.2.3. Sample Frame and simple size

As the numbers of banks in the industry are very small, no need of taking the sample from the total population as a result all population has been included.

3.3.Types of Data and Tool/Instruments of Data collection

This study has used panel data. The researcher has prefers to use panel data since panel data can take heterogeneity among different units into account over time by allowing for individual-specific variables. Besides, by combining time series and cross-section observations, it gives more informative data.

The main sources of data for the study were obtained from the audited balance sheet and income statement of all commercial banks for 5 consecutive years' (i.e. from 2010/11-2014/15) balance sheet and income statement reports have been used for the study. Data from balance sheet and income statements were used for this research and to run the model. The main reason to take all banks stayed in the industry is to avoid sample error.

3.4.Data processing, Data Analysis, Data summary and presentation

Data processing is, broadly, "the collection and manipulation of items of data to produce meaningful information." In this sense it can be considered a subset of information processing, "the change (processing) of information in any manner detectable by an observer.

In this part to test the proposed hypotheses, statistical analyses carried out using the following methods: First, descriptive statistics of the variables (both dependent and independent) has been calculated over the sample period which is used to show the trends of banks return on asset and equity with the help of graphs. This is in line with Malhotra (2007), which states using descriptive statistics methods helps the researcher in picturing the existing situation and allows relevant information. Second, a statistical package for social sciences (SPSS) package was used to aid in analysis. Then, the inferential statistics used to make inference based on the findings regarding the impact of independent variables on the dependent variables. This is done by establishing a regression model. The assumptions has been tested to see the applicability of the regression models developed first to test the effect between banks credit risk and its impact on financial performance.

Expected Sign:

Expected sign is a statistical technique which shows the relationship between two variables. The positive expected sign means that one variable increase, the other variable will also increase while negative expected sign means that when one variable increase, the other variable will be decrease.

Table 1: Summary of explanatory variables and their expected effect on the dependent variable

Independent variables	Dependent variable	Expected Sign
Provision	ROA	Negative
Loan to deposit ration	ROA	Positive
Provision	ROE	Negative
Loan to deposit ration	ROE	Positive

Model specification

$$ROA = a_0 + b_1x_1 + b_2x_2 + e$$

$$ROE = a_0 + b_1x_1 + b_2x_2 + e$$

Where ROE and ROA are dependent variables

a_0 -is the constant value which dependent variable predicted to have when independent variables equal to zero

b_1 and b_2 -the regression change coefficient of the independent variable which determine the amount of effect

x_1 and x_2 -are the independent variables that is provision and loans to deposit ratio

e - Is the disturbance or error term, which expresses the effect of all other variables except for the independent variables on the dependent variable?

Model test

Model test result graphs are in appendix

Linearity relationship test

The relationship graph between dependent variables that is ROA and independent variables that is Loan loss provision and loan to deposit ratio is linear. And also the relationship graph between the other dependent variables that is ROE and independent variables that is Loan loss provision and loan to deposit ratio is linear (**Annex 1**).

Normality test

Descriptive statistics was undertaken to examine the distribution of data using SPSS and the result shows that the regression standardized residual are bell shaped which supported by what Brooks (2008) states; if the residuals are normally distributed, the histogram should be bell shaped(Annex 2).

Test for Heteroscedasticity

Heteroscedasticity is the econometric problem where there is omission of reasonable independent variable that originally should be included into the model. It occurs when the variance of error term is not constant across the number of observations. The researchers have to make sure that the model is free from heteroscedasticity to obtain a precise and interpretable result (Annex 3).

Multi co-linearity test

Different empirical studies show different argument towards the multi co-linearity problem. Mashotra (2013) stated that multi co-linearity problems exist when the correlation coefficient among variables greater than 0.75. Cooper & Schindler (2006) suggested that a correlation above 0.8 between explanatory variables should be corrected for. Lastly, Hair et al. (2010) argued that also correlation coefficient below 0.9 may not cause serious multi co-linearity problem. To test the independence of the explanatory variables the study used a correlation matrix of independent variables and the result is less than the above three figure stated(Annex 4).

3.5 Ethical consideration

The researcher has used the audited financial statements of the banks which exists in their website and from the hard copy published for regulatory requirement and concerned stakeholders. Since the source documents are publically available unethical things had not happened by using this source of data for this research.

CHAPTER FOUR

ANALYSIS AND INTERPRETATION OF DATA

4.1.Descriptive Statistics and Trends in Variables

Table 2: Result of descriptive statistics

	Descriptive statistics				
	N	Mean	Stander deviation	Maximum	Minimum
LLP	85	1.9197	1.67212	9.48	.00
LDR	85	53.0975	18.00118	91.45	.00
ROA	85	3.3148	1.61466	7.56	-3.75
ROE	85	27.4441	16.84021	68.74	-11.21

Source: Financial statements of banks' analyzed through SPSS

Loan loss provision to total assets shows the percentage of nonperforming assets against total loans advances which measure the credit risk of the banks against it exposure risk and also shows the loan quality of the bank and higher ratio means higher non-earning assets. The mean value of loan loss provision to total loans outstanding is 1.92% it is lower than the study conducted by Habtamu (2012) which was 5.74% by taking seven private commercial banks financial statement from year 2002-2011 in Ethiopia , the study conducted by Mulalem (2015) which was 2.78% by taking fourteen commercial banks financial statement from year 2010-2014 in Ethiopia and the study conducted by Engdawork (2013) which was 3.70% by taking eight commercial banks financial statement from year 2008-2012 in Ethiopia but it is higher than the study conducted by Minyahil (2013) by taking seven commercial banks from year 2005-2008. The standard deviation is 1.67% against total asset ratio from its mean and comparison of the result with the above studies reveals the same as above. The minimum and maximum values are 0 and 9.48% respectively for this study.

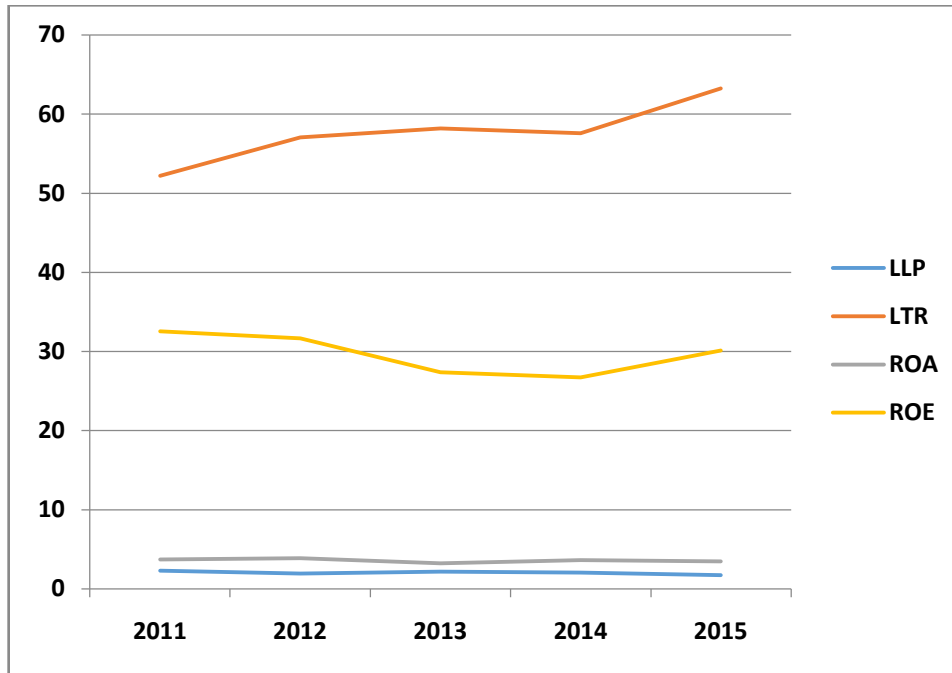
Return on equity is a measure of profitability that calculates how many dollars of profit a company generates with each dollar of shareholders' equity. The mean value ROE is 27.44% which is higher than the study conducted by Mulalem (2015) which was 22.90%

by taking fourteen commercial banks financial statement from year 2010-2014 in Ethiopia and the study conducted by Milion et al (2013) by taking 8 commercial banks and 12 year data from 2001-2012 which was 0.2258%. The standard deviation is 16.84% against owner equity from its mean and also higher than the above study which is 12.51%. The maximum and minimum values of ROE are 68.74 and -11.21% respectively.

Loan to deposit ratio is measure of liquidity and at the same time it shows that banks appetite in taking credit risk. A higher rate of loan to deposit ratio means high loan portfolio balance which also means high earning assets. The mean value of loan LDR is 53.10%, the standard deviation is 18.00%, the maximum value is 91.45 and the minimum value is 0.

Return on asset is an indicator of how profitable a company is relative to its total assets or it means how efficient a company is using its assets to generate income. The mean value of ROA is 3.31% which is more than the international standard of ROA of 1 to 2%, Basel Committee on Banking Supervision (2001) and also it is higher than the study conducted by Engdawork (2013) which was 2.9% by taking eight commercial banks financial statement from year 2008-2012 in Ethiopia and the study conducted by Milion et al (2013) by taking 8 commercial banks and 12 year data from 2001-2012 which was 0.0236%. It is also higher than the study conducted by Mulalem (2015) which was 2.78% by taking fourteen commercial banks financial statement from year 2010-2014 in Ethiopia. The standard deviation is 1.61% against total asset ratio from its mean while its. The minimum and maximum values of ROA are -3.75 and 7.56% respectively.

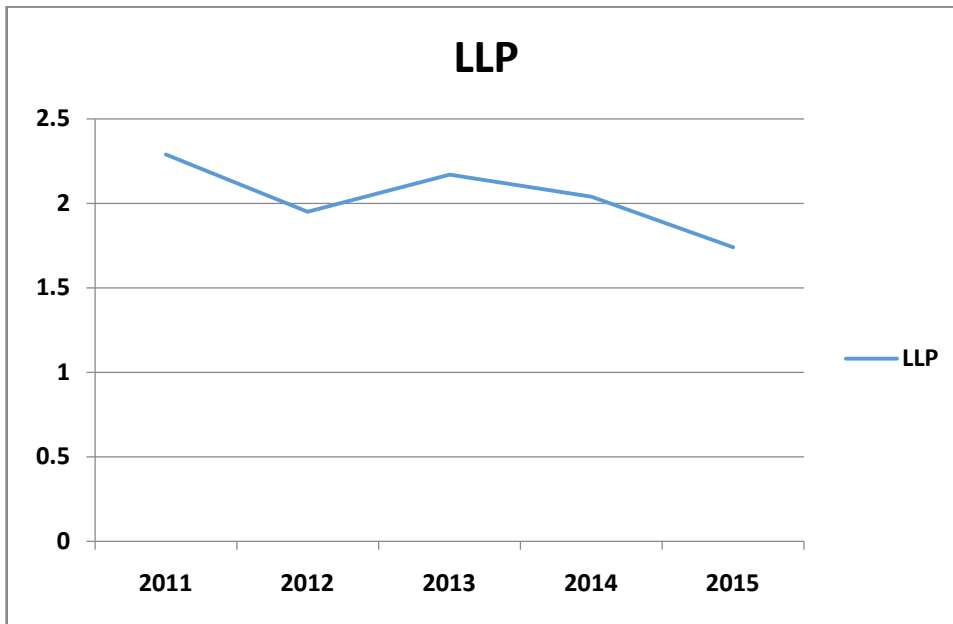
Figure 1: Trends in variables



Source: Calculation of each year average ratio from the financial statement of the banks

From the above when we draw all the variables both dependents and independents the result graph shows LLP and ROA were less in fluctuation and seem near to constant growth from year to year where as LDR and ROE shows fluctuation.

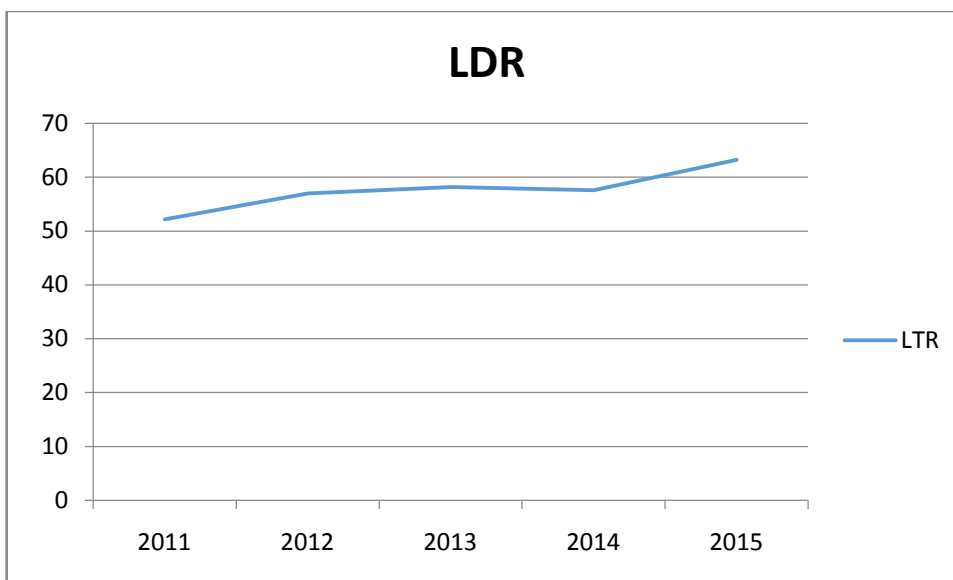
Figure 2: Trends in loan loss provision



Source: Financial statement of banks

For loss loan provision it has been higher in the year 2011 and 2013 and started to decrease after 2013 onwards. From this we infer that LLP of the industry indicate decreasing.

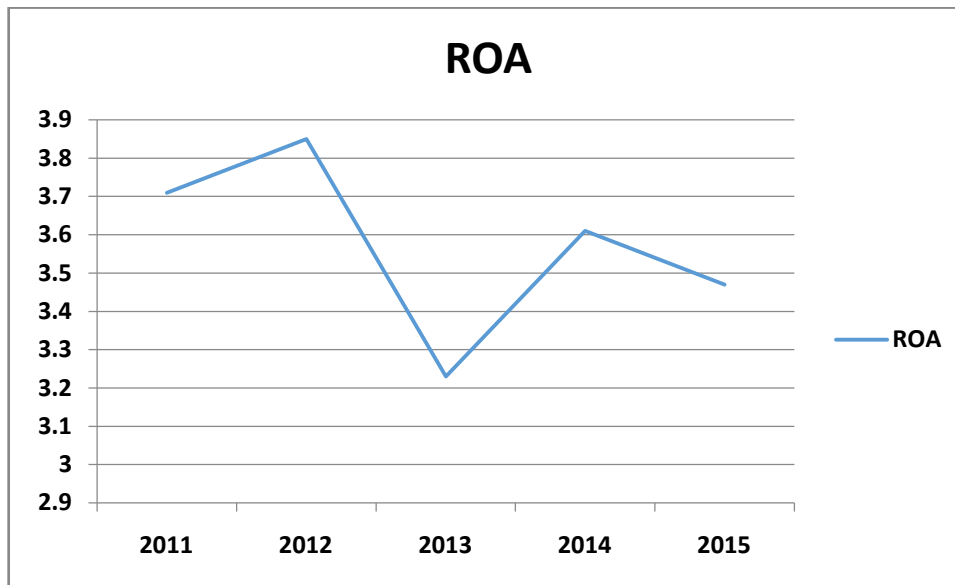
Figure 3: Trends of Loan to deposit ratio



Source: Financial statement of banks

LDR has shown increment from 2011-2015 except a little bit decreasing on year 2014. from this we conclude that the risk appetite of Ethiopian banks increasing from year to year by lending more.

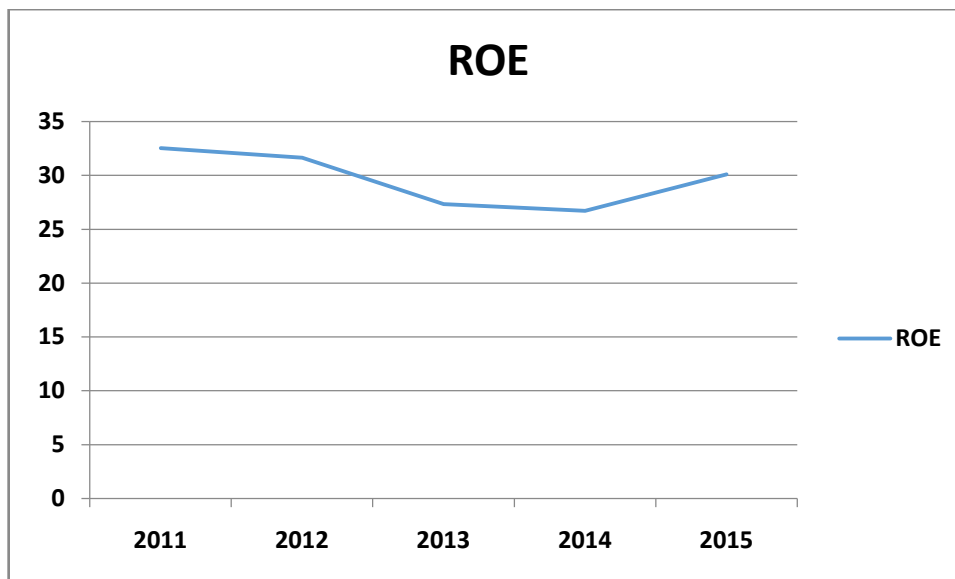
Figure 4: Trends of Return on Asset



Source: Financial statement of banks

ROA shows the highest fluctuation when it shown independently and the highest amount was in year 2012 but the lowest amount was in year 2013.

Figure 5: Trends of Return on Equity



Source: Financial statement of banks

The fluctuation in ROE is less than return on assets as it shows a little down wards and upwards.

4.2. Correlation and Regression Coefficients of Independent variables

A correlation matrix used to ensure the correlation between explanatory variables. Cooper & Schindler (2009) suggested that a correlation coefficient above 0.8 between explanatory variables should be corrected for because it is a sign for multi co-linearity problem. Mashotra (2007) argued that the correlation coefficient can be 0.75. Lastly Hair et al (2006) argued that also correlation coefficient below 0.9 may not cause serious multi-collinearly problem.

Table 3: Pearson Correlation between independent variables and ROA

Variables	ROA
LLP	.354**
LDR	.532**

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Financial statements of banks' analyzed through SPSS

As shown in table 2 there was a statistically significant positive correlation between ROA and predictor variables LLP and LDR. The firs strong correlation was between ROA and LDR, $r = 0.532$, $p < 0.001$. The next strong correlation was between ROA and LLP, $r = 0.354$, $p < 0.001$. These positive correlations between ROA and variables LLP and LDR imply that as ROA increases when LLP and LDR increases and ROA decreases when LLP and LDR decreases.

Table 4: Pearson Correlation between independent variables and ROE

Variables	ROE
LLP	.372**
LDR	.392**

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Financial statements of banks' analyzed through SPSS

As can be seen in table 3 there was a statistically significant correlation between ROA and LLP and LDR. The first strong correlation was between ROE and LDR, $r = 0.392$, $p < 0.001$. The second correlation was between ROE and LLP, $r = 0.372$, $p < 0.001$. These

positive correlation between ROE and the variables that is LLP and LDR indicate that as ROE increases LLP and LDR also increase and as ROE decreases LLP and LDR also decreases.

Table 5: Regression Model Summary of ROA

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.593a	.351	.335	1.31624

Source: Financial statements of banks' analyzed through SPSS

a. Predictors: (Constant), LLP, LDR

b. Dependent Variable: ROA

As shown in table 4 the value of R square is 0.351. This value tells how much of the variance in the dependent variable (ROA) is explained by the model (LLP and LDR). In other words, multiplying R Square value with 100, the model explains 35.1% of the variance in the dependent variable (ROA), $F = 22.20$, $df = 2.82$, $p < 0.001$.

Table 6: Regression coefficients of predictor variables in predicting the dependent variable ROA

Model	Un-standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.521	.456		1.144	.256
LLP	.256	.087	.265	2.930	.004
LDR	.043	.008	.483	5.341	.000

Source: Financial statements of banks' analyzed through SPSS

a. Dependent Variable: ROA

Model specification

$$ROA = .521 + 0.265 \text{ LLP} + 0.483 \text{ LDR}$$

To evaluate the contribution/impact of each independent variable to the dependent variable, one can see the Beta value of predictor variables like LLP and LDR. In the table 5 above, the Beta value for predictor variable LDR equals to 0.483 which implies that LDR made

the first strong positive and statistically significant impact on the dependent variable (ROA) when the variance explained by all other variables in the model is controlled for. The Beta value of LLP was 0.265 which implies that LLP made the second strong impact the criterion variable ROA.

Table 7: Regression Model Summary of ROE

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.496a	.246	.228	14.79847

Source: Financial statements of banks' analyzed through SPSS

a. Predictors: (Constant), LLP, LDR

b. Dependent Variable: ROE

It can be seen in table 6 that the value of R square is 0.246. This value tells how much of the variance in the dependent variable (ROE) is explained by the model (LLP and LDR). In other words, multiplying R Square value with 100, the model explains 24.6% of the variance in the dependent variable (ROE), $F = 13.39$, $df = 2.82$, $p < 0.001$.

Table 8: Regression coefficients of predictor variables in predicting the dependent variable ROE

Model	Un-standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	4.837	5.123		.944	.348
LLP	3.119	.983	.310	3.175	.002
LDR	.313	.091	.335	3.429	.001

Source: Financial statements of banks' analyzed through SPSS

Dependent Variable: ROE

$$ROE = 4.837 + 0.310LLP + 0.335LDR$$

In order to evaluate the contribution/impact of each independent variable to the dependent variable, we can see the standardized Beta value of predictor variables. For instance the Beta value for predictor variable LDR was equal to 0.335 which indicates that LDR made

the first strong positive and statistically significant effect the dependent variable (ROE) when the variance explained by all other variables in the model is controlled for. Predictor variables LLP made the second strong statistically significant effect on ROE with Beta value of 0.31 from this we can conclude that loans loss provision ratio has higher positive impact on ROE than loan to deposit. This finding is in line with also with the researcher expectation.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1. Summary of The Findings

The minimum and maximum values of ROA are -3.75 and 7.56% respectively and the mean value of ROA is 3.31% which is more than the international standard of ROA of 1 to 2%. The maximum and minimum values of ROE are 68.74 and -11.21% respectively and the mean value ROE is 27.44%. These results tell us there had been variation between banks in return on asset and equity. There was high variation among banks in loan to deposit ratio followed by the ratio of return on equity than loss loan provision to total loan and return on assets. Loan loss provision was highest it has in the year 2011 and 2013 for the commercial banks. The loan to deposit ratio had shown a constant increment trend in the period considered. Return on assets showed the highest fluctuation and the highest amount was in year 2012 but the lowest amount was in year 2013 which implies the asset utilization by the commercial banks was better in 2012 and weak in 2013 from the year considered. The fluctuation in ROE is less than return on assets as it shows a little down wards and upwards.

Loan loss provision highly affects ROA and ROE than loan to deposit ratio. There was a statistically significant positive correlation between the dependent variables ROA and ROE and predictor variables LLP and LDR. These positive correlations between ROA and ROE and variables LLP and LDR imply that as independent variable (LLP and LDR) increases the dependent variable (ROA and ROE) also increase and vice verse.

5.2. Conclusions

The main objective of this study was to examine the impact of credit risk on financial performance of commercial banks in Ethiopia based on panel data analysis for the period 2010/11 to 2014/15. The data was analyzed by using statistical package for social sciences (SPSS) package was used to aid in analysis.

The study concluded that Loan loss provision and Loan to deposit had a statistically significant impact on the level of ROA and ROE. Through the period considered the loan to deposit ratio has positive significant impact on return on asset and return on equity than loan loss provision.

The trends of the variables in the period considered return on asset has shown the highest fluctuation.

The positive statistically significant impact of Loan to Deposit on ROA and ROE shows that the bank charge more than what the bank incurring as interest expense for the depositors and the more loan the bank give will have a significant impact on banks profitability.

According to the regression results, the findings indicated that credit risk measured in terms of LLP has positive and statistically significant impact on ROE. This result is unusual since provision impact the amount of loan fund. On the other side one would expect a riskier business will have the bigger return.

In general, the results of the study implied that the independent variables have positive impact on the dependent variables.

5.3.Recommendations

Based on the research findings and conclusions, the following recommendations are put forward for policy consideration and implementation by commercial banks in Ethiopia

- ✓ Banks which have shown the lowest return on assets and return on equity should manage to narrow the gap
- ✓ Bank should implement effective and efficient asset liability management policies in order to avoid the fluctuation of return on asset from year to year.
- ✓ Bank should manage better their LDR ratio because as this ratio increases more and more, the bank becomes more and more risky as the loan amount would be equal or sometimes greater than the deposit amount. As a result banks suffer with a liquidity problem and that may also makes the bank risky.
- ✓ Ethiopian commercial banks need to develop their credit risk management capacity.

Areas for further research

The researcher tried in this study to cover the effect of credit risk on financial performance commercial banks in Ethiopia. The research also considered specific determinant in measuring Credit Risk. The result of the multiple regression analysis suggest that LLP and LDR used as independent variable in the study were explaining 35.1% and 24.6% of ROA and ROE respectively. Hence, 64.9% and 75.4% are determined by other variable. Hence, the study suggests that a further study should be done on the effect of credit risk on financial performance of commercial banks in Ethiopia by taking additional variables as credit risk is highly determine how banks can be profitable with the risk amount they take to do the business.

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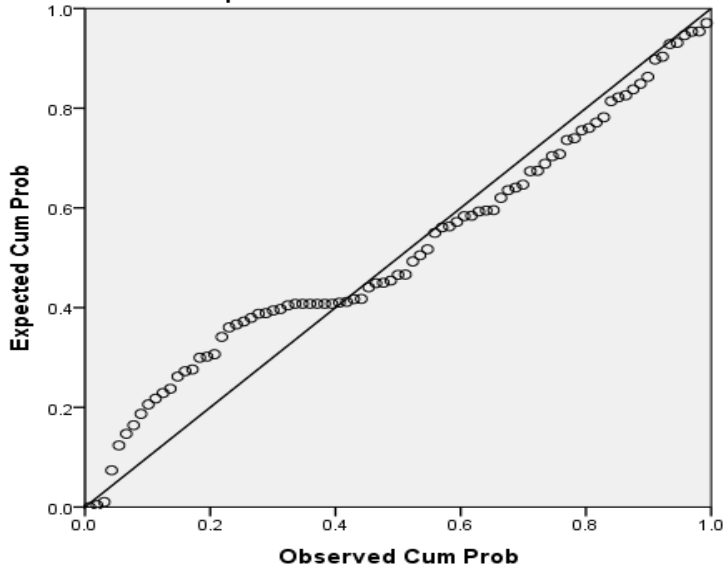
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APPENDICES

Annex- 1 Graphs of test of linearity

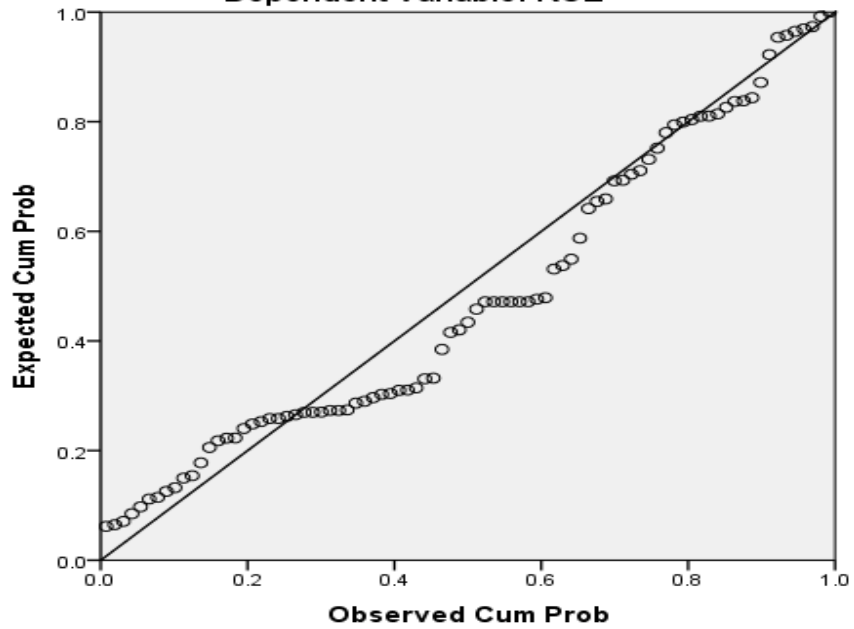
Normal P-P Plot of Regression Standardized Residual

Dependent Variable: ROA



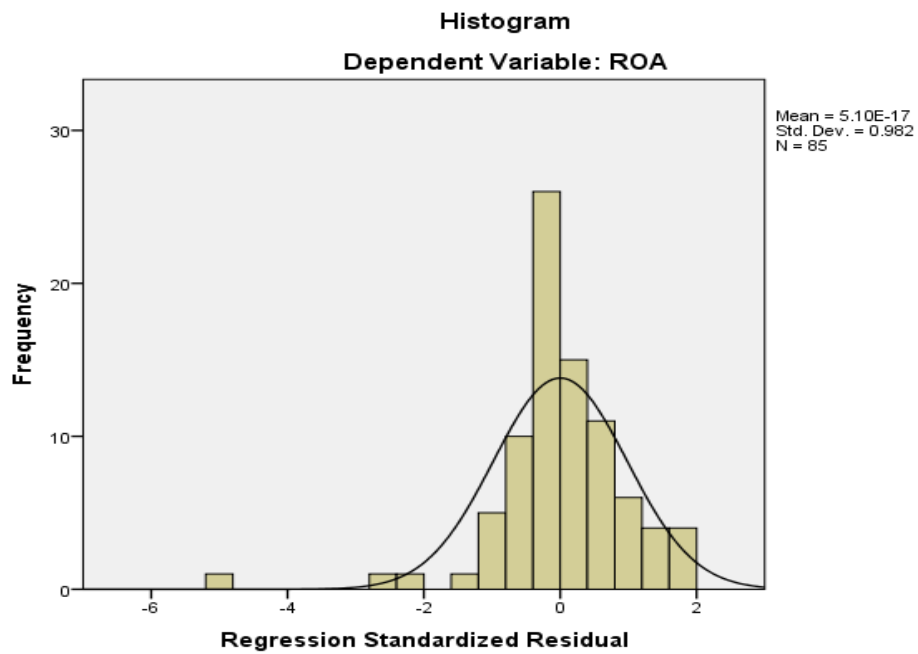
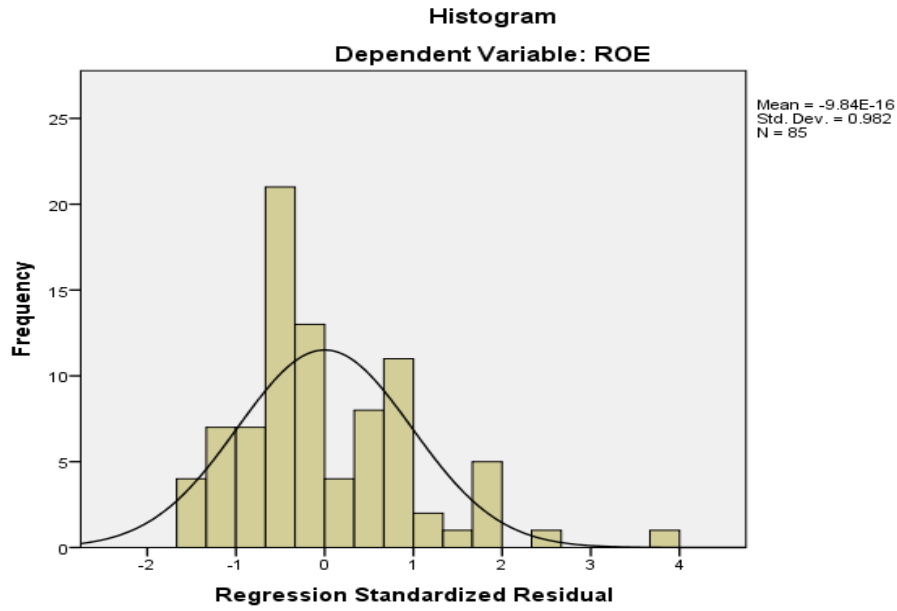
Normal P-P Plot of Regression Standardized Residual

Dependent Variable: ROE

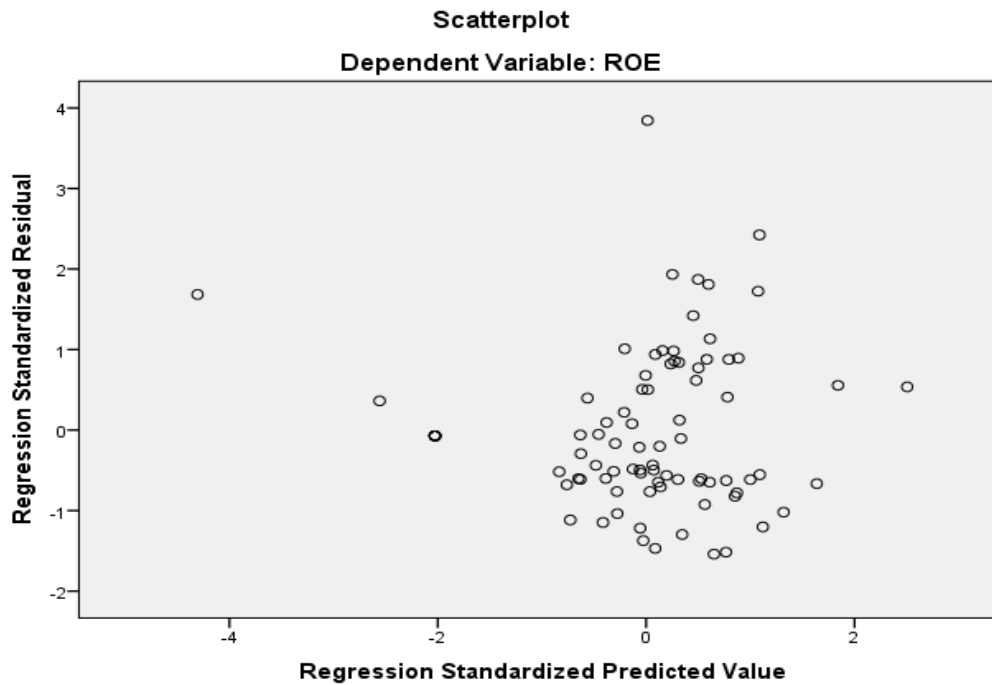
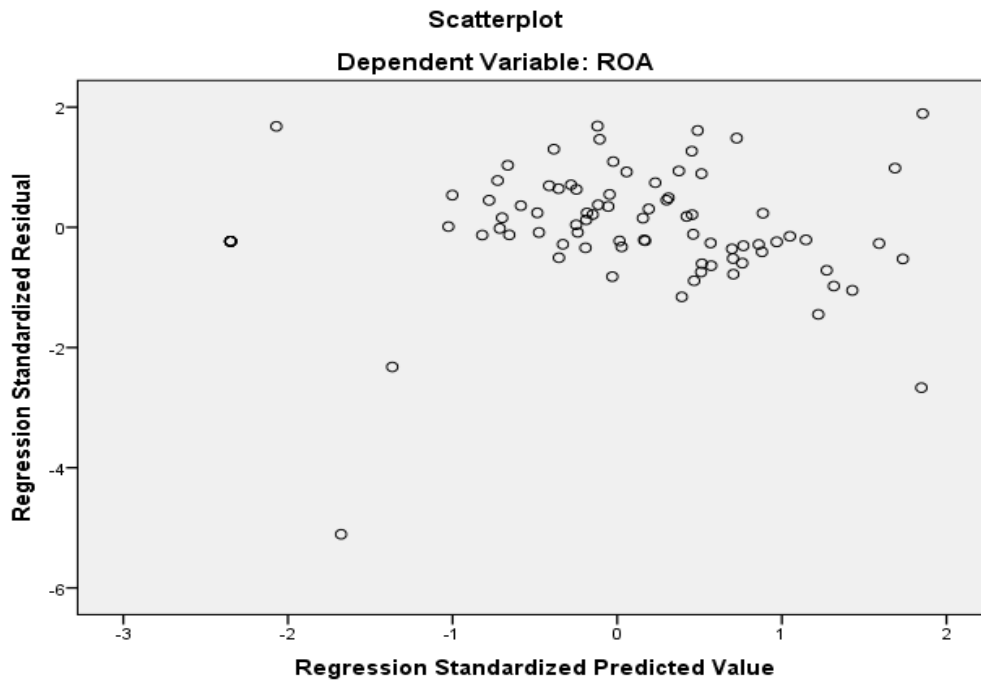


Annx-2 Graphs of test of normality

Plot of Variables at Level



Annx-3 Graphs of test of heterocidity



Annx-4 Multi co-linearity test

Pearson Correlation between independent and dependent variables

	LLP	ROA	ROE	LD
LLP	1	.690**	.708**	.519*
ROA		1	.812**	.700**
ROE			1	.494*
LDT				1

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Ratios

As at June 30, 2011

S/N	Name of Banks	LLP	LDR	ROA	ROE
1	CBE	2.451091534	42.431386	2.5055649	9.7160922
2	AIB	3.637732062	51.473561	4.5540626	48.651252
3	DB	1.994210357	52.512457	4.3098076	54.676943
4	BOA	3.317562846	54.576884	3.5446909	51.448644
5	WB	4.536007653	48.846931	5.6832868	41.876577
6	UB	2.77696571	54.021728	4.1752774	44.508784
7	NIB	4.120697396	53.641782	4.8379469	35.878497
8	CBO	9.477526415	40.499848	2.7300871	32.972066
9	LIB	1.500314316	51.375124	3.4292035	19.745223
10	ZB	1.057401813	43.381389	2.9051988	21.755725
11	OIB	1.092896175	74.541752	3.4571063	12.385321
12	Bunna	1.780774149	55.500389	7.55886	66.151552
13	Birhan	1.118384174	47.794692	2.886836	17.857143
14	AB	0	59.988686	-0.6943524	-2.3528743
15	AdIB	0	0	0	0
16	DGB	0	0	0	0
17	EB	0	0	0	0

As at June 30, 2012

S/N	Name of Banks	LLP	LDR	ROA	ROE
1	CBE	2.205128364	53.449983	3.4216941	12.86798
2	AIB	2.704859923	59.806719	4.0316032	40.349756
3	DB	2.037530285	44.225772	5.0985101	67.688103
4	BOA	2.568401213	57.560282	3.5015966	40.068964
5	WB	2.431564649	61.925576	5.4909247	33.899962
6	UB	2.331053103	63.818162	4.6261137	47.267048
7	NIB	2.711644045	63.530314	4.7003383	30.557738
8	CBO	1.443425271	49.446556	3.8136747	41.416624
9	LIB	1.549824231	55.881606	4.2669103	27.950532
10	ZB	1.292029065	48.162325	2.3322569	16.049383
11	OBI	1.07	72.203765	3.0267914	15.590831
12	Bunna	1.790478824	56.692764	5.1541686	60.042944
13	Birhan	1.171852323	53.599893	3.6179921	22.033743
14	AB	0	58.042091	2.5449341	12.602514
15	AdIB	0	0	2.1861558	5.9206735
16	DGB	0	0	0	0
17	EB	0	0	0	0

As at June 30, 2013

S/N	Name of Banks	LLP	LDR	ROA	ROE
1	CBE	2.613482501	46.949564	3.0983128	13.656418
2	AIB	2.304725517	61.457713	3.2783455	34.647004
3	DB	2.246213809	55.909205	4.1167115	54.02323
4	BOA	1.989346165	55.343597	3.4592873	38.643455
5	WB	2.23950507	62.11412	4.3263028	28.543396
6	UB	1.858865886	61.187791	3.7468696	39.339887
7	NIB	2.502164998	68.262154	4.1398888	27.351957
8	CBO	1.717398468	47.391752	4.0835248	48.582697
9	LIB	1.297895633	62.590228	5.1181199	34.038085
10	ZB	1.461347301	53.147394	2.6116562	20.864399
11	OIB	1.199330906	61.348131	3.7746429	23.994989
12	Bunna	8.522444355	54.771637	3.8126017	29.884486
13	Birhan	1.522115107	61.450157	3.1858293	20.598196
14	AB	1.281014184	57.121874	2.6071193	16.412449
15	AdIB	1.001955789	58.440594	4.0455826	18.11585
16	DGB	0.911450458	63.352182	-3.7538583	-11.208563
17	EB	0	0	0	0

As at June 30, 2014

S/N	Name of Banks	LLP	LDR	ROA	ROE
1	CBE	2.680401547	46.381928	2.7181939	12.708663
2	AIB	2.274946697	61.014186	3.7492382	40.187513
3	DB	1.854704482	54.338773	4.3601717	47.645749
4	BOA	1.78996451	56.653369	3.1170321	26.499759
5	WB	1.669850906	54.9118	3.5892375	21.717132
6	UB	1.440941277	56.904074	3.0398408	27.024327
7	NIB	2.095791603	69.712177	3.8578528	24.891985
8	CBO	1.841358892	68.117603	6.4738483	57.613995
9	LIB	1.335518238	58.133124	3.5199056	23.619477
10	ZB	1.31889199	50.991989	3.3306702	32.356028
11	OIB	1.20518678	63.194623	3.5728695	23.091522
12	Bunna	8.830812632	47.179809	4.1930469	29.326427
13	Birhan	1.633500606	58.88722	4.3228665	24.971306
14	AB	1.23404137	58.566332	2.3674648	18.486614
15	AdIB	1.095591771	64.491861	4.759832	21.315842
16	DGB	1.387767077	54.054746	2.112616	10.161139
17	EB	0.999999934	55.071346	2.3576928	12.428803

As at June 30, 2015

S/N	Name of Banks	LLP	LDR	ROA	ROE
1	CBE	2.6499753	46.098572	3.2086316	68.742246
2	AIB	1.739004846	67.396105	3.4161261	33.035346
3	DB	1.682216651	58.175695	3.8919971	40.544989
4	BOA	1.506643123	53.926574	2.7361484	23.444363
5	WB	1.581574648	60.380147	3.3007099	21.049496
6	UB	1.222622059	61.445507	2.49455	24.28328
7	NIB	1.502282328	71.609466	3.3252608	24.297286
8	CBO	2.556864648	91.453944	4.1963438	42.311931
9	LIB	1.658895876	64.573564	4.7034488	42.097512
10	ZB	1.27121308	59.545079	3.0831647	35.542127
11	OIB	1.145842732	69.86402	4.0423102	30.705714
12	Bunna	5.531288456	59.772084	4.1136197	30.84782
13	Birhan	1.385472552	61.990357	3.321325	21.37046
14	AB	1.253313681	64.591727	3.6665155	26.996089
15	AdIB	1.193591575	69.535424	4.5687814	19.536025
16	DGB	1.17768831	41.362871	1.9765099	10.925294
17	EB	0.585609271	73.190652	2.9187321	15.907481

Amount in Ethiopian Birr**Provision for Doubtful Debt- In Millions of Birr**

	Review Period				
	2010/11	2011/12	2012/13	2013/14	2014/15
CBE	882	1,374	1,870	2,403	2,937.00
AIB	145	149	178	209	217
DB	124	127	199	178	194
BOA	110	100	94	92	90
WB	132	87	105	77	98
UB	91	95	88	73	84
NIB	114	101	114	116	105
CBO	76	20	36	68	172
LIB	10	15	17	21	48
OIB	7	13	24	34	61
BUNA	4	7	11	16	28
ZB	11	18	117	126	126
Birhan	4	6	15	19	26
AB			11	18	29
AdIB			3	6	9
DGB			1	4	4
EB				5	7

Outstanding Loans and Advances-In Millions of Birr

	Review Period				
	2010/11	2011/12	2012/13	2013/14	2014/15
CBE	35,981	62,314	71,545	89,665	111,435
AIB	3,986	5,505	7,710	9,176	12,482
DB	6,218	6,221	8,862	9,608	11,527
BOA	3,316	3,897	4,702	5,153	5,996
WB	2910	3,566	4,690	4,604	6,169
UB	3277	4,085	4,711	5,070	6,860
NIB	2,767	3,709	4,543	5,524	6,999
CBO	802	1,384	2,116	3,712	6,738
LIB	667	971	1,318	1,562	2,878
OIB	662	1,020	1,621	2,552	4,767
BUNA	366	652	949	1,360	2,446
ZB	645	1013	1370	1430	2,283
Birhan	332	500	979	1185	1,902
AB	158	452	843	1,475	2,341
AdIB			328	511	772
DGB			100	270	339
EB				512	1,145

Total Deposits- In Millions of Birr

	Review Period				
	2010/11	2011/12	2012/13	2013/14	2014/15
CBE	84,799	116,584	152,386	193,319	241,732
AIB	7,744	9,204	12,545	15,040	18,520
DB	11,841	14,066	15,851	17,681	19,814
BOA	6,075	6,771	8,496	9,096	11,118
WB	5,957	5,758	7,551	8,385	10,218
UB	6,066	6,402	7,699	8,909	11,164
NIB	5,157	5,838	6,655	7,923	9,774
CBO	1,980	2,798	4,465	5,450	7,368
LIB	1,297	1,737	2,106	2,687	4,457
OIB	1,526	2,117	3,050	5,004	8,006
BUNA	491	903	1,548	2,152	3,501
ZB	1,163	1,786	2,501	3,031	3,819
Birhan	694	932	1,593	2,012	3,068
AB	263	779	1,476	2,518	3,624
AdIB		211	561	792	1,110
DGB			158	500	819
EB				929	1,565

Net-Income- In Millions of Birr

	Review Period				
	2010/11	2011/12	2012/13	2013/14	2014/15
CBE	2,863	5,434	6,107	6,685	8,865
AIB	505	531	583	829	861
DB	630	893	813	958	964
BOA	258	288	351	351	374
WB	458	458	450	414	453
UB	323	406	374	361	358
NIB	344	389	379	415	441
CBO	68	140	267	476	481
LIB	62	105	151	127	276
OIB	57	65	102	205	294
BUNA	27	41	80	108	182
ZB	122	123	124	165	201
Birhan	25	46	70	122	139
AB	(4)	32	51	76	168
AdIB	-	9	37	60	78
DGB	-	-	(14)	18	23
EB	-	-	-	33	64

Total Equity -In Millions of Birr

	Review Period				
	2010/11	2011/12	2012/13	2013/14	2014/15
CBE	29,466	42,230	44,718	52,598	12,896
AIB	1,038	1,315	1,683	2,062	2,607
DB	1,152	1,320	1,505	2,010	2,377
BOA	501	720	910	1,326	1,595
WB	1,094	1,352	1,575	1,905	2,150
UB	725	860	951	1,336	1,475
NIB	959	1,273	1,384	1,666	1,814
CBO	207	338	549	826	1,137
LIB	314	376	442	538	655
OIB	262	405	490	633	827
BUNA	218	265	335	466	592
ZB	184	206	414	561	650
Birhan	140	211	340	487	648
AB	161	250	310	409	622
AdIB		157	205	282	401
DGB			127	182	207
EB				269	405

Total Assets- In Millions of Birr

	Review Period				
	2010/11	2011/12	2012/13	2013/14	2014/15
CBE	114,265	158,814	197,104	245,917	276,286
AIB	11,089	13,161	17,784	22,106	25,211
DB	14,615	17,520	19,747	21,962	24,764
BOA	7,278	8,239	10,160	11,276	13,668
WB	8,061	8,347	10,394	11,529	13,711
UB	7,725	8,787	9,986	11,876	14,361
NIB	7,112	8,276	9,145	10,747	13,256
CBO	2,500	3,671	6,537	7,350	11,462
LIB	1,808	2,463	2,942	3,613	5,859
OIB	1,962	2,787	3,911	6,152	9,535
BUNA	781	1,365	2,128	3,012	4,500
ZB	1,614	2,394	3,248	3,925	4,874
Birhan	866	1,285	2,197	2,814	4,172
AB	547	1,238	1,951	3,197	4,582
AdIB		425	916	1,263	1,715
DGB			381	875	1,144
EB				1,417	2,209