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ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

**THE IMPACT OF CREDIT RISK MANAGEMENT ON THE PERFORMANCE OF
SELECTED PRIVATE COMMERCIAL BANKS IN ETHIOPIA**

BY:

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ID. SGS\0023\2010B

JUNE, 2020

ADDIS ABABA, ETHIOPIA

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ATHESIS SUBMITTED TO ST.MARY'S UNIVERSITY, SCHOOL OF GRADUATE
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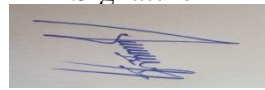
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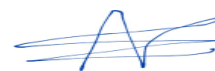
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DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of my advisor Simon Tareke (Asst. Pro). All sources of materials used for the thesis have been duly acknowledged. 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

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LIST OF ACRONYMS

AIB- Awash International Bank

BIS - Bank for International Settlement

BOA- Bank of Abyssinia

CAMEL- Capital adequacy, Asset Quality, Management quality, Earning Ratio, Liquidity ratio

CIC- Credit Information Center

CRM- Credit Risk Management

DB- Dashen Bank

EVA- Economic Value Added

GDP- Gross Domestic Product

KYC- Know Your Customer

LIB- Lion International Bank

NBE- National Bank of Ethiopia

NII- Net Interest Income

NIM- Net Interest Margin

NIB- Nib International Bank

NPL- Non-performing loan

OIB- Oromia International Bank

RM- Relationship Manager

ROA-Return On Asset

ROE- Return on equity

VIF-Variation Inflation Factor

WB- Wegagen Bank

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ABSTRACT

The objective of this study is to assess the impact of credit risk management on selected private commercial banks financial performance in Ethiopia. Quantitative data was gathered from secondary data sources which are financial data for the years of 2013 up to 2019 from annual reports of the stated eight selected private banks namely Awash International Bank (AIB), Dashen Bank (DB), Bank of Abyssinia (BOA), Wegagen Bank (WB), Oromia International Bank (OIB), Lion international bank (LIB), United bank (UB) and Nib international bank (NIB). Having been collected these data; it was analyzed and processed through CAMEL approach and ROE to test the existence of the relationship between the selected CAMEL factor measurements with the performance measures for the case of interpretation. A linear regression model was applied to examine the impact of independent variables on the dependent variable for one performance measures. Regression outputs were obtained by using STATA. The regression results revealed that, Capital adequacy ratio and management efficiency ratio has negative significant relationship with ROE but Asset quality ratio has positive significant relationship with ROE and liquidity ratio and earnings ratio has negative in significant relationship with ROE at 95% confidence interval and at 5% level of significance. On the basis of these findings, the study recommends that all CAMEL variables are the key driver of profitability of private banks in Ethiopia similarly the study also identified capital adequacy , management efficiency ,earning ability and therefore, Bank managers are advised to give due attention to those variables and to use other mechanisms to improve profitability.

Key words: Credit Risk Management, Financial Performance, CAMEL approach, ROE.

CHAPTER ONE

INTRODUCTION

This section of study contains background of the study, statement of the problem, general and specific objective of the study, Hypothesis, basic research questions, significance of the study, scope of the study, limitation of the study, and organization of the study.

Background of the Study

Banks are financial institutions that are established for lending, borrowing, issuing, exchanging, taking deposits, safeguarding or handling money under the laws and guide lines of a respective country. Among their activities, credit provision is the main service which banks provide to potential business entrepreneurs as a main source of Generating income. They also provide loans, credit and payment services such as checking accounts, money orders, and cashier's checks. Banks also may offer investment and insurance products and a wide whole range of other financial services. The credit function of banks enhances the ability of investors to exploit desired profitable ventures. It's crystal clear that credit creation is the main income (Sahlemichael , 2009).

The Basel Committee on Banking Supervision (2001) defined credit risk as the possibility of losing the outstanding loan partially or totally, due to default risk. Credit risk is an internal determinant of bank performance. The higher the exposure of a bank to credit risk, the higher the tendency of the bank to experience financial crisis and vice-versa. As stated by Basel Accord (2001) Credit risk is the risk that a borrower or counterparty will fail to meet obligations in accordance with agreed terms of a contract. And it arises from the potential that the borrower or counterparty is either unwilling to perform on an obligation or its ability to perform such obligation is impaired resulting in accounting losses and economic exposures to the bank. .

Increasing amount of non-performing loans in the credit portfolio is unfavorable to banks in achieving their objectives. Non-performing loan is the percentage of loan values that are not

serviced for three months and above (Ahmed and arif, 2007). Due to increasing of non-performing loans and its attendant consequences, the Central Bank authorities entered into agreement in December 1987 known as Basel I and II Accord which emphasized on credit risk management practices. Compliance with the Accord means a sound approach to tackling credit risk has been taken and this ultimately improves bank performance.

This indicates that credit provision should be accompanied by appropriate and attractive credit policies and procedures that enhance performance of credit management and protects the banking industry from failure. However, payment of the debt should not be postponed for too long as delayed payments and bad debts are a cost to the company. Thus, Efficiency and effectiveness in performing each steps of loan processing using various parameters has significant effect on performance of credit management. Credit management is the total process of lending starting from inquiring potential borrowers up to recovering the amount granted. In the sense of banking sector, credit management is concerned with activities such as accepting application, loan appraisal, loan approval, monitoring, and recovery of non-performing loans (Shekhar, 1985).According to Hettihewa, 1997, Credit Management is extremely important as granting credit is considered to be the equivalent of investing in a customer.

Credit risk management is very important to banks as it is an integral part of the loan process (Shahbazhaneef et-al, 2012). It maximizes bank risk, adjusted risk rate of return by maintaining credit risk exposure with view to shielding the bank from the adverse effects of credit risk (Olausi, 2014). Risk management is simply a practice of systematically selecting cost effective approaches for minimizing the effect of threat realization to the organization. All risks can never be fully avoided or mitigated simply because of financial and practical limitations (Moteff, 2005).

Banking industry in Ethiopia was dominated until very recently by the public owned commercial banks namely Commercial Bank of Ethiopia and Development Bank of Ethiopia. The sector was opened for private investors since the 90s. Since then some 16 private banks have been established and have been a significant engine for the growing economy. Commercial banks in Ethiopia extend credit to different types of borrower for many different purposes. For most customers, bank credit is the primary source of available debt financing and for banks good loans

are the most profitable assets (Mishkin, 2004). Even if credit creation is the main income generating activity, it also involves huge risks to banks.

Statement of the problem

Banks deliberately take risk as they perform their role of financial intermediation economy (Tenguh , 2008). Consequently, they assume various risks, which include credit risk, interest rate risk, liquidity risk, internal control & compliance risk, money laundering risk, foreign exchange risk and operational risk. (Funso et-al.,2012). Managing risks is essential for their survival and prosperity.

Credit risk in banks may arise due to internal weaknesses in any financial institutions such as management inefficiency. Management deficiency affects liquidity causing an increase in nonperforming loans (Mwaurah, 2013). The non-performing loan (NPL) in the balance sheet of a financial institution represents the ratio of aggregate non-performing loans and the total gross loan. Banks performance with regards to credit risk depends on various internal and external factors. Internal factors are bank specific determinants and the external factors are the determinants related to economic environment (Naceur and Omran, 2011) as cited in (Mwaurah, 2013). Appropriate credit management is a precondition for any financial institutions' stability and continuing profitability.

Credit risk management is a robust process that enables banks to proactively manage loan portfolios in order to minimize losses and earn an acceptable level of return for shareholders. It is essential for banks having robust credit risk management policies and procedures that are sensitive and responsive to these changes (Shawn, 1998). The goal of Credit Risk Management is to maximize banks' risk-adjusted rate of return by maintaining credit risk exposure within acceptable parameters. Banks need to manage the credit risk inherent in the entire portfolio as well as the risk in individual credits or transactions. Banks should also consider the relationships between credit risk and other risks. Effective management of credit risk is a critical component of a comprehensive approach to risk management and essential to the long-term success of any banking organization (Basle committee on banking supervision, 2001). Hence, the credit management is one of the major issues of banks that concern many stakeholders where better credit risk management results in better bank profitability.

A study carried out by Boahene *et al.* (2012) on the topic “Credit risk and profitability of some selected governmental banks” that credit risk constituents do not reduce the profitability of a bank. This implies that, banks in Ethiopia experience high profit irrespective of the huge credit risk exposure.

A survey study by the National Bank of Ethiopia (2009), presented that regardless of the strengths by Ethiopian commercial banks in the management of risks, weaknesses dominate Ethiopian commercial banking sector risk management. And the report revealed that credit and operational risks were key bank risks over the last years and would continue to be so over the next years.

Although there were some studies on credit risk management system in Ethiopian commercial banks (Case of public and private banks). Those studies made on this issue are not comprehensive and credit risk management system may differ and change over time. Nevertheless, the studies did not assess whether credit risk management has an impact on the profitability of private commercial banks of Ethiopia based on the CAMEL approach and profitability measures ROE, which is used to evaluate the overall safety and soundness of the banks. And there is a gap among the prior studies in relation to some variables in both dependent and independent variables like ROE and CAMEL respectively. So, the current study wants to add those new variables.

CAMEL model reflects excellently the conditions and performances of banks over years as well as enriches the on-site and off-site examination to bring better assessments towards banks' conditions. Its purpose is to provide an accurate and consistent evaluation of a bank's financial condition and operations in the areas such as capital, asset quality, management, earning ability and liquidity (Barr *et al.*, 2002). Muhammad (2009) claims that the strength of these factors would determine the overall strength of the bank. The quality of each component further underlines the inner strength and how far it can take care of itself against the market risks. And why the researcher selects ROE from the other profitability measures is because it is a time-honored metric designed to measure a company's ability to return assets into profits. A company with the highest ROE among its peers is most likely to bring the best returns to shareholders.

Research Questions

This study tried to find out some possible answers for the following questions

- How does Capital adequacy ratio affect banks performance in relation to return on equity?
- What relationship exists between liquidity ratio and return on equity?
- What impacts dose asset quality ratio has on banks performance in relation to return on equity?
- How does management quality ratio affect banks' performance in relation to return on equity?
- How does earnings ratio affect banks' performance in relation to return on equity?

Objective of the study

General Objective

The main objective of this study is to evaluate the impact of credit risk management on selected private commercial banks financial performance in Ethiopia.

Specific Objectives

To achieve this general objective, the study has the following specific objectives:

- ❖ To examine the effect of Capital adequacy ratio on banks performance in relation to return on equity.
- ❖ To identify the relationship exists between liquidity ratio and return on equity.
- ❖ To investigate the impacts of asset quality ratio on profitability in relation to return on equity.
- ❖ To examine management quality ratio affects banks' profitability in relation to return on equity.
- ❖ To determine the effect of earnings ratio on banks' performance in relation to return on equity.

Hypothesis

The objective of this study is to find out the relationship between bank specific factors on the banks' performance using CAMEL model. Up to the knowledge of the researcher there is no separate studies conducted in private commercial banks in Ethiopia in relation to CAMEL approach and bank performance. Hence, based on the objective, the present study seeks to test the following five hypotheses:

Ho₁: There is no a significant relationship between capital adequacy ratio and return on equity of the banks.

Endaweke (2015) found that Capital adequacy ratio had positive statistically insignificant impact on banks performance, Boahene, Dasah and Agyei (2012) also suggests that higher capital requirement contributes positively to bank's profitability. A study by Abdelrahim (2013) has also found that there is no significant relationship between capital adequacy ratio and return on equity of the banks. while a study by Mwangi (2012) revealed inverse but significant relationship between capital adequacy ratio and return on equity.

Ho₂: There is significant relationship between asset quality ratio and return on equity of the banks.

A study conducted by Aduda and Gitonga (2011) have found that there is no significant relationship between asset quality ratio and return on equity of the banks. Whereas Boahene, Dasah and Agyei (2012), Afriyie and Akotey (2013) and Charles and Kenneth (2013) have revealed positive and statistically significant association between asset quality and return on equity.

Ho₃: There is a significant relationship between management efficiency ratio and return on equity of the banks.

A study conducted by Abdelrahim (2013) has found that there is no significant relationship between management efficiency ratio and return on equity of the banks.

Salas and Saurina, (2002) suggest that Inefficient managers will not cope successfully with the process of granting and monitoring loans that will lower the banks' credit quality and bring about a growth in problem loans.

Ho₄: There is a significant relationship between earnings ratio and return on equity of the banks.

A study by Abdelrahim (2013) has also revealed that there is no significant relationship between earnings ratio and return on equity of the banks.

Ho₅: There is a significant relationship between liquidity ratio and return on equity of the banks.

Liyugi (2007) found negative relationship between credit risk and liquidity on banks performance, also Endaweke (2015) found that Liquidity risk management indicator and operational risk indicator had negative and statistically significant impact on banks performance.

Another studies conducted by Li and Zou (2014) and Afriyie and Akotey (2012) have revealed negative but significant association between liquidity ratios and return on equity

Significance of the study

The result of this study is important to all private commercial banks who provide credit service to their customers, it creates an opportunity to identify determinates of impacts of credit risk management and find out a way how to solve it, and to protect existing healthy credit management system to competing with public commercial banks. It helps them to find out their weak and strong sides and to draw a better way to fill the gap in their work. This improves the operation of the department and it contributes to the growth in economy as a whole.

In addition to the above, conducting study on credit risk management and their impact on the performance will equip the researcher with the necessary skill and technique to undertake investigation in similar area in future. Finally, this study will serve as an input or stepping stone for those who want to conduct further studies in similar area.

Scope of the Study

The research sample contains eight private commercial banks named Awash Bank (AB), DashenBank(DB), Bank of Abyssinia(BOA), Wegagen Bank(WB), Lion International Bank(LIB) , Oromia International Bank(OIB)United Bank (UB) and Nib International Bank (NIB) and their 7 years' annual reports from 2013to 2019.

Limitation of the Study

It is limited on identifying the relationship of credit risk management and profitability of private commercial banks in Ethiopia. The variables used were delimited in to one dependent and five independent variables i.e. the dependent variable is ROA and the independent variables are Capital Adequacy, Asset Quality, Management Efficiency, Earning Ratio and Liquidity Ratio. Due to the time and finance constraints the researcher is limited in to only 8 private commercial banks and their 7 year annual report.

Organization of the study

The paper is organized in to five chapters. The first chapter is about Introduction part of the paper includes background of the study statement of problem, objective of the study, significance

of the study, scope or delimitation of the study and limitation of the study. The second chapter provides related theoretical and empirical literatures while the third chapter provides the methodology to be used for answering the research questions. The fourth chapter on the other hand presents the empirical data collected and briefs out its results analysis and discussions. And the last chapter concludes the results and forwarded recommendations based on the findings of the study.

CHAPTER TWO

RELATED LITERATURE REVIEW

Theoretical Literature Review

Introduction

This chapter considers other research works and article review conducted on credit risk management and its impact on profitability. Additionally, it shows relationship analysis and tries to assess the credit risk management strategies in relation to banks profitability. This chapter reviews the concept of credit risk management on profitability of banks and also brings to bear some internal and external determinants of banks profitability.

Financial institutions, which are composed of banks, micro finances, and insurances, have comprehensive roles in serving the needs of the society within the economy. The service is rendered through providing three major financial functions: intermediation, or allocation, operational and payment systems. Operational and allocation functions are the provisions of financial resources to meet borrowing needs of individuals and other economic agents. The main microeconomic function of banks is the provision of Facilities to collect deposits and invest these deposits as credits. Provision of a sound payment mechanism is also the other expected service from banks. Hence, the Performance of banks is measured in terms of the above major roles of the banking Business and relies on the provision of these functions. As Hoff and Stiglitz in 1990 denoted, in the past decades there have been major advances in theoretical understanding of the workings of credit markets. These advances have evolved from a paradigm that emphasis the problems of imperfect information and imperfect enforcement. They pointed out that borrowers and lenders may have differential access to information concerning a business risk, they may form different appraisal of the risk. What is clearly observed in credit market is asymmetric information where the borrower knows the expected return and risk of his/her business, whereas

the lender such as bank knows only the expected return and risk of the average business in the economy (Hagos, 2010).

The Concept of Risk

Financial institutions through their role as a financial intermediary help circulate funds deposited by the various surplus units to the deficit units. In the course of performing this role, they are confronted with risk which remains one of the topical issues of current financial studies that had attracted special attention from both scholars and professionals. One key factor that determines the success of any banking institution is risk management. According to Boahene *et al* (2012), the business of banking is full of risk and hence a banks' ability to generate profit and maximize the wealth of their shareholders depends on their attitude toward risk and management of the risk.

Risk is the probability that the actual will be different from the expected value. Thus it is the possibility that the actual may be different from the expected return. In banking, "risk is defined as the sum of threats likely to occur until the money loaned and all other committed are settled by the borrower. Financial institutions in the quest to make profit and maximize shareholders' wealth often engage in some activities which expose them to various types of risks. In 2001, the Basel Committee divided bank risk into three major parts. Namely, credit risk, operational risk and market risk. According to this committee, credit risk is the failure of a borrower to honor his or her debt obligations.

Credit Risk

Credit risk is the risk of a loss resulting from the debtor's failure to meet its obligations to the Bank in full when due under the terms agreed (Raghavan 2003). It has the highest weight among risks taken by the Bank in the course of its banking activities.

Credit risk is defined as the probability that some of a bank's assets, especially its loans, will decline in value and possibly become worthless. Because banks hold little owners' capital relative to the aggregate value of their assets, only a small percentage of total loans need to go bad to push a bank to the brink of failure. Thus, management of credit risk is very important and central to the health of a bank and indeed the entire financial system. As banks make loans, they need to make provisions for loan losses in their books. The higher this provision becomes, relative to the size of total loans, the riskier a bank becomes. An increase in the value of the

provision for loan losses relative to total loans is an indication that the bank's assets are becoming more difficult to collect (Tshore, Aboagy and Koyerhoah Coleman 2011).

Types of Credit

There are four basic types of credit. By understanding how each works, financial Institutions will be able to get the most solution for their loan recovery and avoid paying unnecessary charges.

- **Service credit:** are monthly payments for utilities such as telephone, gas, electricity, and water. You often have to pay a deposit, and you may pay a late charge if your payment is not on time.
- **Loans:** Loans can be for small or large amounts and for short or long periods. And can be repaid in one lump sum or in several regular installment payments until the amount borrowed and the finance charges are paid in full. Moreover, loans can be secured or unsecured.
- **Installment credit:** is described as buying on time, financing through the store or the easy payment plan. The borrower takes the goods home in exchange for a promise to pay later. Cars, major appliances, and furniture are often purchased this way. You usually sign a contract, make a down payment, and agree to pay the balance with a specified number of equal payments called installments. The finance charges are included in the payments. The item you purchase may be used as security for the loan.
- **Credit cards:** are issued by individual retail stores, banks, or businesses. Using a credit card can be the equivalent of an interest-free loan--if you pay for the use of it in full at the end of each month, (<http://www.urbanext.illinois.edu/ww1/04-03.html>).

Definition of Credit Management

There are many definitions given for credit management by different scholars. Among these some are here cited as follows:

According to Nath (2013) Credit management in a bank is a dynamic sector where a certain standard of long range planning is needed to allocate the fund in diverse field and to minimize the risk and maximizing the return on the invested fund. The objective of the credit management is to maximize the performing asset and the minimization of the non-performing asset as well as ensuring the optimal point of loan and advance and their efficient management. Credit management is implementing and maintaining a set of policies and procedures to minimize the

amount of capital tied up in debtors and to minimize the exposure of the business to bad debts (Hagos, 2010).

Process of Credit Management

The process of credit management begins with accurately assessing the credit-worthiness of the customer base and his/her business viability. This is particularly important if the company chooses to extend some type of credit line or revolving credit to certain customers. Hence, proper credit management is setting specific criteria that a customer must meet before receiving the proposed credit arrangement. As part of the evaluation process, credit management also calls for determining the total credit line that will be extended to a given customer.

Several factors are used as part of the credit management process to evaluate and qualify a customer for the receipt of some form of commercial credit. This includes gathering data on the potential customer's current financial condition, including the current credit track record that discloses the character of a customer in meeting obligations as well as collateral value. The current ratio between income and Outstanding financial obligations will also be taken into consideration.

Competent credit management seeks to not only protect the bank or any financial institutions involved from possible losses, but also protect the customer from creating more debt obligations that cannot be settled in a timely manner. When the process of credit management functions efficiently, everyone involved benefits from the effort. The financial institution such as banks has a reasonable amount of assurance that loans granted to a client will be paid back within terms, or that regular minimum payments will be received on credit account balances.

Customers have the opportunity to build a strong rapport with the creditor and thus create a solid credit reference. (Hagos, 2010).

Credit policies & procedures

A Credit Policy is not something that is only operated by the Credit and risk Department. All employees involved with customers, in any way, need to be aware of the credit policy and ensure that it is operated consistently. In order to be effective, credit policies must be communicated throughout the organization, implemented through appropriate procedures, monitored and periodically revised to take into account changing internal and external circumstances.

Economic conditions and the firm's credit policies are the chief influences on the level of a firm's account receivable. Economic conditions, of course, are largely beyond the control of the financial manager. As with other current assets, however, the manager can vary the level of receivables in keeping with the tradeoff between profitability and risk. Lowering quality standards may stimulate demand, which, in turn, should lead to higher profitable receivables, as well as a greater risk of bad debt.

The examination of certain policy variables implies that the competitive process is accounted for in the specification of the demand function as well as in the opportunity cost associated with taking on additional receivables. The policy variables include the quality of the trade accounts accepted; the length of the credit period, the cash discount, any special terms such as seasonal dating and the collection program of the firm. Together, these elements largely determine the average collection period and the proportion of bad debt losses (Horne, 1995: 361).

Credit analysis

Credit analysis is the primary method in reducing the credit risk on a loan request. This includes determining the financial strength of the borrowers, estimating the probability of default and reducing the risk of non-repayment to an acceptable level. In general credit evaluations are based on the loan officer's subjective assessment (or judgmental assessment technique).

Once a customer requests a loan, bank officers analyze all available information to determine whether the loan meets the bank's risk-return objectives. Credit analysis is essentially default risk analysis, in which a loan officer attempts to evaluate borrower's ability and willingness to repay.

Similarly Compton (1985) identified three distinct areas of commercial risk analysis related to the following questions: 1) what risks are inherent in the operations of the business?

2) What have managers done or failed to do in mitigating those risks? 3) How can a lender structure and control its own risks in supplying funds?

The first question forces the credit analyst to generate a list of factors that indicate what could harm a borrower's ability to repay. The second recognizes that repayment is largely a function of decisions made by a borrower. Is management aware of the important risks, and has it responded? As Tomothy (1995:665) quoted, the last question forces the analyst to specify how risks can be controlled so the bank can structure to an acceptable loan agreement.

A bank's credit analysts often use the five C's of credit to focus their analysis on the key dimensions of an applicant's creditworthiness.

Lawrence (1997:776-777), identified five C's of credit. They include; Character, Capacity, Capital, Collateral, and Conditions.

1. **Character:** The applicant's record of meeting past obligations, financial, contractual, and moral. Past payment history as well as any pending or resolved legal judgments against the applicant would be used to evaluate its character.

2. **Capacity:** The applicant's ability to repay the requested credit. Financial statement analysis, with particular emphasis on liquidity and debt ratios, is typically used to assess the applicant's capacity.

3. **Capital:** The financial strength of the applicant as reflected by its ownership position. Analysis of the applicant's debt relative to equity and its profitability ratios are frequently used to assess its capital.

4. **Collateral:** The amount of assets the applicant has available for use in securing the credit. The larger the amount of available assets, the greater the chance that a firm will recover its funds if the applicant defaults.

A review of the applicant's balance sheet, asset value appraisals, and any legal claims filed against the applicant's assets can be used to evaluate its collateral.

5. **Conditions:** The current economic and business climate as well as any unique circumstances affecting either party to the credit transaction. For example, if the firm has excess inventory of the items the applicant wishes to purchase on credit, the firm may be willing to sell on more favorable terms or to less creditworthy applicants.

Analysis of the general economic and business conditions, as well as special circumstance that may affect the applicant or firm is performed to assess conditions.

The credit analyst typically gives primary attention to the first two C's-character and Capacity- because they represent the most basic requirements for extending credit to an applicant. Consideration of the last three C's-Capital, Collateral, and Conditions- is important in structuring the credit management and making the final credit decision, this is affected by the credit analyst's experience and judgment.

Credit information

Adequate and timely information that enables a satisfactory assessment of the credit worthiness of borrowers applying for a bank loan is crucial for making prudent lending decisions. Prudent lending decisions made on the basis of adequate information on the credit worthiness of borrowers are one of the principal factors in ensuring the financial soundness of banks.

But, there has been serious difficulty in Ethiopia of getting accurate and timely information on prospective borrowers that facilitates the making of such prudent lending decisions. One of the means for alleviating this difficulty of getting accurate and timely information on prospective borrowers is the establishment of a Credit Information Center (CIC) where relevant information on borrowers is assumed to be pooled and made available to lending banks. According to article 36 of the Licensing and Supervision of Banking Business Proclamation No. 84/1994, the National Bank Ethiopia (NBE) has issued these directives to establish such a CIC.

Credit Collection Techniques

Effective credit collection techniques are one of the necessities for financial institutions in any economic climate. Knowing how to encourage customers to pay their outstanding debts to financial institutions like banks on time can increase the cash flow of banks.

Therefore a number of collection techniques are employed. Under normal circumstances loan clients are expected to pay in cash or deposit or keep their installment repayment as per the agreement made. As the loan account becomes past due or overdue the collection effort becomes more personal and strict. The basic techniques are:

- **Telephone Calls:** If the loan client passes the due date, a telephone call may be made to the customer to request immediate repayment and up to date his or her account.
- **Personal visits:** - If the telephone call made is not resulted positive response visiting his business and discussing the issue with the customer can be a very effective collection procedure.
- **Letters:** - If the efforts made so far is unsuccessful and not resulted positive response polite letter is to be served reminding the customer of its obligation followed by warning letters for the action to be taken in future and its consequence. Collection letters are the first step in the collection process for past due and overdue loan accounts.

- **Using Collection Agencies:** Firms can turn uncollectible accounts over to a collection agency or an attorney for collection. The fees for this service are typically quite high; the firm may receive less than fifty percent on accounts collected in this way.
- **Legal Action:** legal action is the most stringent step in the collection process. It is an alternative to the use of a collection agency not only is direct legal action expensive, but it may force the debtor into bankruptcy, thereby reducing the possibility of future business without guaranteeing the ultimate receipt of overdue amount.
(<http://www.articlesbase.com/finance-articles/3-top-credit-collection-techniques-that-can-improve-cash-flow-to-your-business-900152.html>).

Criteria for choosing bank

Individuals whose only contact with their bank is through the use of its checking services generally choose a bank for the convenience of its location and the competitive cost of its services. However, a business that borrows from banks must look at other criteria, and a potential borrower seeking banking relations should recognize that important differences exist among banks. Some of these differences are considered here.

a) Willingness to Assume Risks

Banks have different basic policies toward risk. Some banks are inclined to follow relatively conservative lending practice, while others engage in what are properly termed creative banking practices. These policies reflect partly the personalities of officers of the bank and partly the characteristics of the bank's deposit liabilities.

Thus, a bank with fluctuating deposit liabilities in a static community will tend to be a conservative lender, while a bank whose deposits are growing with little interruption might follow more liberal credit policies.

Similarly, a large bank with broad diversification over geographic regions or across industries can obtain the benefit of combining and averaging risks.

b) Advice and Counsel

Some bank loan officers are active in providing counsel and in stimulating development loans to firms in their early and formative years. Certain banks have specialized departments that make loans to firms expected to grow and thus to become more important customers. The personnel of these departments can provide valuable counseling to customers.

c) Loyalty to Customers

Banks differ in the extent to which they will support the activities of borrowers in bad times. This characteristic is referred to as the degree of loyalty of the bank. Some banks might put great pressure on a business to liquidate its loans when the firms' outlook becomes clouded, whereas other will stand by the firm and work diligently to help it get back on its feet.

d) Specialization

Banks differ greatly in their degrees of loan specialization. Large banks have separate departments that specialize in different kinds of loans for example, real estate loans, farm loans, and commercial loans. Within these broad categories, there might be a specialization by line of business, such as steel, machinery, cattle, or textiles. The strengths of banks also are likely to reflect the nature of the business and economic environment in which the banks operate. For example, some California banks have become specialists in lending to technology companies, while many Midwestern banks are agricultural specialists. A sound firm can obtain more creative cooperation and more active support by going to a bank that has experience and familiarity with its particular type of business. Therefore, a bank that is excellent for one firm might be unsatisfactory for another.

e) Maximum Loan Size

The size of a bank can be important factor. Because the maximum loan a bank can make to any one customer is limited to certain percent of the bank's capital account (capital stock plus retained earnings). It generally is not appropriate for large firms to develop borrowing relationships with small banks. (Hagos, 2010).

How to manage credit risk?

Credit risk management is a set of outlined activities aimed at managing credit risk. These activities will cover the range from credit granting to credit collection. They are risk identification, measurement, assessment, control and monitor. The first step is to identify the risk involved in the credit process, and then risk is measured by evaluating the consequence if it is not well managed. After the evaluation phase, the risk is then assessed to know the impact, the likelihood of occurrence, and possibility for it to be controlled. The control and monitoring phase then comes in. these phase are not distinct like the other three. In the control phase, measures which can be used to avoid, reduce, prevent or eliminate the risk. The monitoring phase is used to make a constant check so that all processes or activities which have been put in

place for the risk management process are well implemented for desired results to be gotten and in case of any distortions, corrections are then made. All this is done because credit risk is a very important and delicate risk that banks face and needs to be managed with great care/ precaution because its consequences are always very detrimental to the bank. Despite the changes in the financial service sector, credit risk remains the major single cause of bank failure (Greuning & Bratanovic, 2003).

Credit assessment & risk grading

Credit Assessment

Credit and risk assessment should be conducted prior to the granting of loans, and at least annually thereafter for all facilities. The results of this assessment should be presented in a Credit Application that originates from the relationship manager/account officer (—RMII), and is approved by Credit Risk Management (CRM). The RM should be the owner of the customer relationship, and must be held responsible to ensure the accuracy of the entire credit application submitted for approval. RMs must be familiar with the bank's Lending Guidelines and should conduct due diligence on new borrowers, principals, and guarantors (Laurent Clerc, 2004)

It is essential that RMs know their customers and conduct due diligence on new borrowers, principals and guarantors to ensure such parties are in fact who they represent themselves to be. All banks should have established Know Your Customer (KYC) and Money Laundering guidelines which should be adhered to at all times.

Credit Applications should summaries the results of the RMs risk assessment and include, as a minimum, the following details:

- Amount and type of loan(s) proposed.
- Purpose of loans.
- Loan Structure (Tenor, Covenants, Repayment Schedule, Interest)
- Security Arrangements

In addition, the following risk areas should be addressed:

Borrower Analysis: The majority shareholders, management team and group or affiliate companies should be assessed. Any issues regarding lack of management depth, complicated ownership structures or inter group transactions should be addressed, and risks mitigated.

Industry Analysis: The key risk factors of the borrower's industry should be assessed.

Any issues regarding the borrower's position in the industry, overall industry concerns or competitive forces should be addressed and the strengths and weaknesses of the borrower relative to its competition should be identified.

Supplier/Buyer Analysis: Any customer or supplier concentration should be addressed, as these could have a significant impact on the future viability of the borrower.

Historical Financial Analysis: An analysis of a minimum of 3 years historical financial statements of the borrower should be presented. Where reliance is placed on a corporate guarantor, guarantor financial statements should also be analyzed. The analysis should address the quality and sustainability of earnings, cash flow and the strength of the borrower's balance sheet. Specifically, cash flow, leverage and profitability must be analyzed.

Projected Financial Performance: Where term facilities (tenor > 1 year) are being proposed, a projection of the borrower's future financial performance should be provided, indicating an analysis of the sufficiency of cash flow to service debt repayments. Loans should not be granted if projected cash flow is insufficient to repay debts.

Account Conduct: For existing borrowers, the historic performance in meeting repayment obligations (trade payments, checks, interest and principal payments, etc.) should be assessed.

Adherence to Lending Guidelines: Credit Applications should clearly state whether or not the proposed application is in compliance with the bank's Lending Guidelines. The Bank's Head of Credit or Managing Director/CEO should approve Credit Applications that do not adhere to the bank's Lending Guidelines.

Mitigating Factors: Mitigating factors for risks identified in the credit assessment should be identified. Possible risks include, but are not limited to: margin sustainability and/or volatility, high debt load (leverage/gearing), overstocking or debtor issues; rapid growth, acquisition or expansion; new business line/product expansion; management changes or succession issues; customer or supplier concentrations; and lack of transparency or industry issues.

Loan Structure: The amounts and tenors of financing proposed should be justified based on the projected repayment ability and loan purpose. Excessive tenor or amount relative to business needs increases the risk of fund diversion and may adversely impact the borrower's repayment ability.

Security: A current valuation of collateral should be obtained and the quality and priority of security being proposed should be assessed. Loans should not be granted based solely on security. Adequacy and the extent of the insurance coverage should be assessed.

Name Lending: Credit proposals should not be unduly influenced by an over reliance on the sponsoring principal's reputation, reported independent means, or their perceived willingness to inject funds into various business enterprises in case of need. These situations should be discouraged and treated with great caution. Rather, credit proposals and the granting of loans should be based on sound fundamentals, supported by a thorough financial and risk analysis.

Risk grading

All Banks should adopt a credit risk grading system. The system should define the risk profile of borrower's to ensure that account management, structure and pricing are commensurate with the risk involved. Risk grading is a key measurement of a Bank's asset quality, and as such, it is essential that grading is a robust process. All facilities should be assigned a risk grade. Where deterioration in risk is noted, the Risk Grade assigned to a borrower and its facilities should be immediately changed. Borrower Risk Grades should be clearly stated on Credit Applications.

The more conservative risk grade (higher) should be applied if there is a difference between the personal judgment and the Risk Grade Scorecard results. It is recognized that the banks may have more or less Risk grades however, monitoring standards and account management must be appropriate given the assigned Risk Grade.

what type of risk is being considered?

Commercial banks are in the risk business. In the process of providing financial services, they assume various kinds of financial risks. Over the last decade the understanding of the place of commercial banks within the financial sector has improved substantially.

Over this time, much has been written on the role of commercial banks in the financial sector, both in the academic literature and in the financial press. These arguments will be neither reviewed nor enumerated here. Suffice it to say that market participants seek the services of these financial institutions because of their ability to provide market knowledge, transaction efficiency and funding capability. In performing these roles they generally act as a principal in the transaction. As such, they use their own balance sheet to facilitate the transaction and to absorb the risks associated with it (Santomero 1997).

Bank risk management systems

The banking industry has long viewed the problem of risk management as the need to control four of the above risks which make up most, if not all, of their risk exposure, viz., credit, interest rate, foreign exchange and liquidity risk. While they recognize counterparty and legal risks, they view them as less central to their concerns. Where counterparty risk is significant, it is evaluated using standard credit risk procedures, and often within the credit department itself. Likewise, most bankers would view legal risks as arising from their credit decisions or, more likely, proper process not employed in financial contracting. Accordingly, the study of bank risk management processes is essentially an investigation of how they manage these four risks. In each case, the procedure outlined above is adapted to the risk considered so as to standardize, measure, constrain and manage each of these risks. To illustrate how this is achieved, this review of firm-level risk management begins with a discussion of risk management controls in each area. The more difficult issue of summing over these risks and adding still other, more amorphous, ones such as legal, regulatory or reputational risk, will be left to the end (Santomero, 1997).

Credit risk measurement framework

Credit risk is conventionally defined using the concepts of expected loss (EL) and unexpected loss (UL). Because expected losses can be anticipated, they should be regarded as a cost of doing business and not as a financial risk. Obviously credit losses are not constant across the economic cycle, there being substantial volatility (unexpected loss) about the level of expected loss. It is this volatility that credit portfolio models are designed to quantify.

Volatility of portfolio losses is driven by two factors – concentration and correlation.

Concentration describes the ‘lumpiness’ of the credit portfolio (e.g. why it is more risky to lend 10m to 10 companies than to lend 0.1m to 1,000 companies). Correlation describes the sensitivity of the portfolio to changes in underlying macro-economic factors (e.g. why it is more risky to lend to very cyclical industries such as property development).

In all but the smallest credit portfolios, correlation effects will dominate.

When quantifying credit risk, two alternative approaches can be used when valuing the portfolio:

Loss-based method: Under this approach an exposure is assumed to be held to maturity.

The exposure is therefore either repaid at par or defaults, and thus worth the recovery value of any collateral. Using this approach credit migration has no effect on the book value of the obligation.

NPV-based method: Under this approach, the embedded value of an exposure is assumed to be realizable. If the obligation upgrades then it is assumed to be worth more than par, and if it downgrades it is assumed to be worth less than par.

Policy guidelines

Lending Guidelines

All banks should have established Credit Policies (—Lending Guidelines) that clearly outline the senior management’s view of business development priorities and the terms and conditions that should be adhered to in order for loans to be approved. The Lending Guidelines should be updated at least annually to reflect changes in the economic out-look and the evolution of the bank’s loan portfolio, and be distributed to all lending/marketing officers. The Lending Guidelines should be approved by the Managing Director/CEO & Board of Directors of the bank based on the endorsement of the bank’s Head of Credit Risk Management and the Head of Corporate/Commercial Banking.

Any departure or deviation from the Lending Guidelines should be explicitly in credit applications and a justification for approval provided. Approval of loans that do not comply with Lending Guidelines should be restricted to the bank’s Head of Credit or Managing Director/CEO & Board of Directors. The Lending Guidelines should provide the key foundations for account officers/relationship managers (RM) to formulate their recommendations for approval, and should include the following:

➤ Industry and Business Segment Focus

The Lending Guidelines should clearly identify the business/industry sectors that should constitute the majority of the bank’s loan portfolio. For each sector, a clear indication of the bank’s appetite for growth should be indicated (as an example, Textiles: Grow, Cement: Maintain, Construction: Shrink). This will provide necessary direction to the bank’s marketing staff.

➤ Types of Loan Facilities

The type of loans that are permitted should be clearly indicated, such as Working Capital, Trade Finance, Term Loan, etc.

➤ Single Borrower/Group Limits/Syndication

Details of the bank’s Single Borrower/Group limits should be included as per Bangladesh Bank guidelines. Banks may wish to establish more conservative criteria in this regard.

➤ **Lending Caps**

Banks should establish a specific industry sector exposure cap to avoid overconcentration in any one industry sector.

Discouraged Business Types

Banks should outline industries or lending activities that are discouraged. As a minimum, the following should be discouraged:

- Military Equipment/Weapons Finance
- Highly Leveraged Transactions
- Finance of Speculative Investments
- Logging, Mineral Extraction/Mining, or other activity that is Ethically or Environmentally Sensitive
- Lending to companies listed on CIB black list or known defaulters
- Counterparties in countries subject to UN sanctions
- Share Lending
- Taking an Equity Stake in Borrowers
- Lending to Holding Companies
- Bridge Loans relying on equity/debt issuance as a source of repayment.

➤ **Loan Facility Parameters**

Facility parameters (e.g., maximum size, maximum tenor, and covenant and security requirements) should be clearly stated. As a minimum, the following parameters should be adopted:

- Banks should not grant facilities where the bank's security position is inferior to that of any other financial institution.
- Assets pledged as security should be properly insured.
- Valuations of property taken as security should be performed prior to loans being granted. A recognized 3rd party professional valuation firm should be appointed to conduct valuations.

➤ **Cross Border Risk**

Risk associated with cross border lending. Borrowers of a particular country may be unable or unwilling to fulfill principle and/or interest obligations. Distinguished from ordinary credit risk because the difficulty arises from a political event, such as suspension of external payments

- Synonymous with political & sovereign risk
- Third world debt crisis

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 determinants 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 are essential for various parties.

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.

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).

2.1. 18.1 Internal Determinants

Studies dealing with internal determinants employ variables such as size, capital, risk management and expenses management. Size is introduced to account for existing economies or diseconomies of scale in the market. Akhavein et al. (1997) and Smirlock(1985) find a positive and significant relationship between size and bank profitability.

Demirguc-Kunt and Maksimovic (1998) suggest that the extent to which various financial, legal and other factors (e.g. corruption) affect bank profitability is closely linked to firm size. 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) Bikker and Hu (2002) and Goddard et al. (2004), all link bank size to capital ratios, which they claim to be positively related to size, results indicated that as size increases. 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.

Other internal factors, such as credit or liquidity are considered as bank specific factors, which closely related to bank management, especially the risk management. The need for risk management in the banking sector is inherent in the nature of the banking business.

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 the their impact on bank profitability.

2.1. 18.2 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).

Performance Measurement in Banks

According to Aburime (2009), the importance of bank profitability can be appraised at the micro and macro level of the economy. At the micro level, profit is the essential prerequisite of a competitive banking institutions and the cheapest source of funds. It is not merely a result, but also a necessity for successful banking in a period of growing competition on financial markets. Hence, the basic aim of every bank management is to maximize profit, as an essential requirement for conducting business.

Various literatures written by academicians also assert that profitability is the bottom line or ultimate performance result showing the net effects of bank policies and activities in a financial year. As a matter of fact, numerous factors such as inflation, accounting policy, high level of competition, etc., may have an influence on a bank's profitability. In due course, wide varieties

of ratios are discussed and different measures of profitability of commercial banks have been suggested.

For instance, Net Interest Margin (NIM), Return on Assets (ROA), and Return on Equity (ROE) were identified are in use in the literature since then. Profitability measures include Profit before Tax, Profit after Tax, ROE, Rate of Return on Capital and ROA. Some other, studies on profitability have also used returns on average bank assets, net interest margin (NIM) and return on average equity to measure profitability. However, owing to divergent views among scholars on the superiority of one indicator over the others as measures of profitability, there is no clear cut stand as to which best fits. Nonetheless, most literatures confine the profitability measure only to the three widely used measures namely Return on Assets (ROA), Return on Equity (ROE), and Net Interest Margin (NIM). Accordingly, some scholars select either of the three and some others preach to select three of them at once.

In line with the above discussion, the researcher has used ROA as measure of profitability for this particular study owing to the limitations of NIM & ROE. NIM is reported to have two major limitations. First, it doesn't measure the total profitability of the bank as most of them earn fees and other non-interest income through service like brokerage and deposit account services without taking account operating expenses, such as personnel and facilities costs, or credit costs.

Besides, net interest margin of two banks can't be contrasted as both the banks are poles apart in their own way in the nature of their activities, composition of customer base, etc.

Fundamentals of the CAMEL approach system

In the 1980's CAMEL rating system was first introduced by U.S. supervisors authorities as a system of rating for onsite examinations of banking institutions. Under this system, each banking institution subject to on-site examination is evaluated on the basis of five (now six) critical dimensions relating to the bank's operations & performance, which are referred to as the component factors. These are capital, Asset Quality, Management, Earnings and liquidity used to reflect the financial performance, financial condition, operations soundness and regulatory compliance of the banking institution. Sixth component relating to sensitivity to market risk has been added to the CAMEL approach to make the rating system more risk-focused, each of the component factors is rated on a scale of 1 (best) to 5 (worst), A Composite rating is assigned as an abridgement of the component rating and is taken as the prime indicator of a bank's current

financial condition .The composite rating ranges between 1 (best) and 5 (worst) and also involves a certain amount of subjectivity based on the examiners` overall assessment of the initiation in view of the individual component assessments.

Composite and component ratings are assigned based on a 5 to 1 numerical scale. A 5 indicates the highest rating, strongest performance and risk management processes, and least degree of supervisory concern, while a 1 indicates the lowest rating, weakest performance, inadequate risk management practices and, therefore, the highest degree of supervisory concern.

The composite rating generally bears a close relationship to the component ratings assigned. However, the composite rating is not derived by computing arithmetic average of the component ratings. Each component rating is based on a qualitative analysis, as well as quantitative assessment, whenever applicable, of the factors comprising that component and its interrelationship with the other components. When assigning a composite rating, some components may be given more weight than others depending on the situation at the situation. In general, assignment of a composite rating may incorporate any factor that bears significantly on the overall condition and soundness of the institution.

The ability of management to respond to changing circumstances and to address the risks that may arise from changing business conditions, or the initiation of new activities or products, is an important factor in evaluating an institution`s overall risk profile and the level of supervisory attention warranted. For this reason, the management component is given special consideration when assigning a composite rating.

The ability of management to identify, measure, monitor, and control the risks of its operations is also taken into account when assigning each composite rating. It is recognized, however, that appropriate management practices vary considerably among financial institutions, depending on their size, complexity, and risk profile. For less complex institutions engaged solely in traditional banking activities and whose directors and senior managers, in their respective roles, are actively involved in the oversight and management of day-to-day operations, relatively basic management systems and controls may be adequate. At more complex institutions, on the other hand, detailed and formal management systems and controls are needed to address their broader range of financial activities and to provide senior managers and directors, in the irrespective roles, with the information they need to monitor and direct day-to-day activities. All institutions

are expected to properly manage their risks. For less complex institutions engaging in less sophisticated risk taking activities, detailed or highly formalized management systems and controls are not required to receive strong or satisfactory component or composite ratings.

What Is The Camel Approach?

The Uniform Financial Institution approach system, commonly referred to the acronym CAMEL approach, was adopted by the Federal Financial Institution Examination Council on November 13 1979, and then adopted by the National Credit Union Administration in October 1987. It has proven to be an effective internal supervisory tool for evaluating the soundness of a financial firm, on the basis of identifying those institutions requiring special attention or concern (The United States. Uniform Financial Institutions approach System 1997).

As Barr et al. (2002) states that CAMEL approach has become a concise and indispensable tool for examiners and regulators. This approach ensures a bank's healthy conditions by reviewing different aspects of a bank based on variety of information sources such as financial statement, funding sources, macroeconomic data, budget and cash flow. Nevertheless, Hirtle and Lopez (1999,) stress that the bank's CAMEL approach is highly confidential, and only exposed to the bank's senior management for the purpose of projecting the business strategies, and to appropriate supervisory staff. Its approach is never made publicly available, even on a lagged basis. CAMEL is an acronym for five components of bank safety and soundness: **C**apital adequacy, **A**sset quality, **M**anagement quality, **E**arning ability and **L**iquidity.

Capital Adequacy

Capital adequacy is the capital expected to maintain balance with the risks exposure of the financial institution such as credit risk, market risk and operational risk, in order to absorb the potential losses and protect the financial institution's debt holder. "Meeting statutory minimum capital requirement is the key factor in deciding the capital adequacy, and maintaining an adequate level of capital is a critical element" (The United States. Uniform Financial Institutions Rating System 1997).

Karlyn (1984) defines the capital adequacy in term of capital-deposit ratio because the primary risk is depository risk derived from the sudden and considerably large scale of deposit withdrawals. In 1930, FDIC created a new capital model as capital-asset ratios since the default on loans came to expose the greatest risk instead of deposit withdrawals. To gauge the capital

adequacy, bank supervisors currently use the capital risk asset ratio. The adequacy of capital is examined based upon the two most important measures such as Capital Adequacy Ratio or Capital to Risk-weighted Assets ratio and the ratio of capital to assets.

And interpret what are the capital requirements and which banks meet them; what banks are privatizing or merging; are requirements different for private and state banks?

- Actual capital adequacy ratio is above regulatory minimum
- Good ability to raise capital through government injection or private/public issues

The capital adequacy is estimated based upon the following key financial ratios:

Capital Ratios Analysis

$$\frac{\text{Equity capital to total assets} = \text{Total Capital}}{\text{Total Asset}}$$

This capital ratio is required to meet a minimum of 8% set by the Bank for International Settlement (BIS). However, it is important to note that in some countries the required minimum capital may vary depending on the local regulators; and the bank might like to have as high a capital ratio as possible.

Tier 1 capital (core capital) is shareholder equity capital. Tier 2 capitals (supplementary capital) are the bank's loan loss reserves plus subordinated debt which consists of bonds sold to raise funds. Risk-weighted assets are the weighted total of each class of assets and off-balance sheet asset exposures, with weights related to the risk associated with each type of assets.

2.1.21.2. Asset quality

According to Grier (2007), "poor asset quality is the major cause of most bank failures".

The most important asset category is the loan portfolio; the greatest risk facing the bank is the risk of loan losses derived from the delinquent loans. The credit analyst should carry out the asset quality assessment by performing the credit risk management and evaluating the quality of loan portfolio using trend analysis and peer comparison. Measuring the asset quality is difficult because it is mostly derived from the analyst's subjectivity.

Frost (2004) stresses that the asset quality indicators highlight the use of nonperforming loans ratios (NPLs) which are the proxy of asset quality, and the allowance or provision to loan losses

reserve. As defined in usual classification system, loans include five categories: standard, special mention, substandard, doubtful and loss. NPLs are regarded as the three lowest categories which are past due or for which interest as not been paid for international norm of 90 days. In some countries regulators allow longer period, typically 180 days. The bank is regulated to back up the bad debts by providing adequate provisions to the loan loss reserve account. The allowance for loan loss to total loans and the provision for loan loss to total loans should also be taken in to account to estimate thoroughly the quality of loan portfolio.

The asset quality requirements are taken CAMEL approach to Bank Analysis (1996) as below:

- Trends should be noted such as loan concentrations, intra-group lending, and real-estate exposure. For a bank which heavily exposes to lend some specific business sectors and/or business entities, lack of diversification will make its loan portfolio vulnerable. Therefore, AIA designs the portfolio mix shared equally by a third of each of consumer, commercial and industrial loans.
- Loan loss reserve is the money put aside to pay off loan defaults and serve as an insurance to absorb potential losses caused by risky assets.
- Loan growth: has there been a large increase in loan growth and in what type of
- Lending; are prudent standards being followed or are they becoming lax due to competition.

The asset quality is estimated based upon the following key financial ratios,

Asset Quality Ratios Analysis

Ratios

$$1, \text{ NPLs to total loans} = \frac{\text{NPL}}{\text{Total loans}}$$

$$2, \text{ NPLs to total equity} = \frac{\text{NPLs}}{\text{Total Equity}}$$

$$3, \text{ Allowance for loan loss ratio} = \frac{\text{Allowance for loan loss}}{\text{Total loans}}$$

Management quality

Management quality is basically the capability of the board of directors and management, to identify, measure, and control the risks of an institution's activities and to ensure the safe, sound, and efficient operation in compliance with applicable laws and regulations (Uniform Financial Institutions Rating System 1997).

Grier (2007) suggests that management is considered to be the single most important element in the CAMEL approach system because it plays a substantial role in a bank's success; however, it is subject to measure as the asset quality examination.

The management has clear strategies and goals in directing the bank's domestic and international business, and monitors the collection of financial ratios consistent with management strategies. The top management with good quality and experience has preferably excellent reputation in the local communication.

Management relates to the competency of the bank's managers, using their expertise's to make subjective judgments; create a strategic vision, and other relevant qualities.

Management is the key variable which determines a banks' success. The evaluation of the management is the hardest one to be measured and it is the most unpredictable (Golin, 2001). There are two ratios representing the management in the previous studies, operating costs to net operating income ratio, and operating expenses to assets ratio.

The operating costs to net operating income ratio indicate the percentage of a bank's income that is being used to pay operational costs. It offers information on the management efficiency regarding costs relative to the income it generates. Olweny (2011) adopted the ratio of operating costs to net operating income to indicate the operating efficiency for the commercial banks in Kenya, and he found that the operational costs inefficiency leads to poor profitability.

The operating expenses to assets ratio indicate expenses in relation to the size of a bank. It was similar with cost to income ratio but it was not affected by the changes in interest. Atikogullari (2009) observed the management quality situation of the northern Cyprus banking sector for the

period of 2001 to 2007 by using operating expenses to assets ratio. Management Quality can be measured by the following ratios:

Management Quality Ratios Analysis

Ratios

$$1, \text{ Cost to income} = \frac{\text{Cost}}{\text{Income}}$$

$$2, \text{ Operating Cost to Net Operating Income} = \frac{\text{Operating Cost}}{\text{Operating Income}}$$

Management Efficiency is another important element of CAMEL Model, Management is the most important ingredient that ensures the sound functioning of banks. With increased competition in the Indian banking sector, efficiency and effectiveness have become the rule as banks constantly strive to improve the productivity of their employees. Presently it is common to see branches of banks both public and private maintaining extended working hours, flexible time schedules, outsourcing marketing etc. to attract customers. Another development over the year has been the deployment of technology. Almost all banks have upgrade to computerized system. Internet banking, telephone banking have become widespread and most banks offering these services quite comfortably. The ratios in this segment involved subject analysis to measure the efficiency and effectiveness of management.

Earning ability

This rating reflects not only the quantity and trend in earning, but also the factors that may affect the sustainability of earnings. Inadequate management may result in loan losses and in return require higher loan allowance or pose high level of market risks.

The future performance in earning should be given equal or greater value than past and present performance. (Uniform Financial Institutions Rating System1997).

In accordance with Grier (2007)'s opinion, a consistent profit not only builds the public confidence in the bank but absorbs loan losses and provides sufficient provisions. It is also necessary for a balanced financial structure and helps provide shareholder reward.

Thus consistently healthy earnings are essential to the sustainability of banking institutions. Profitability ratios measure the ability of a company to generate profits from revenue and assets.

The profitability is estimated based upon the following key financial ratios,

1. Net interest income Margin (NIM) = $\frac{\text{Net Interest Income}}{\text{Total Loan \& Advance}}$
2. Return on asset (ROA) = $\frac{\text{Net Interest Income}}{\text{Total asset}}$
3. Return on equity (ROE) = $\frac{\text{Net Interest Income}}{\text{Shareholder's Equity}}$

Liquidity

There should be adequacy of liquidity sources compared to present and future needs, and availability of assets readily convertible to cash without undue loss. The fund management practices should ensure an institution is able to maintain a level of liquidity sufficient to meet its financial obligations in a timely manner; and capable of quickly liquidating assets with minimal loss.

The liquidity ratio expresses the degree to which a bank is capable of fulfilling its respective obligations. Banks makes money by mobilizing short-term deposits at lower interest rate, and lending or investing these funds in long-term at higher rates, so it is hazardous for banks mismatching their lending interest rate.

Liquidity Ratios Analysis

1. Customer deposits to total assets = $\frac{\text{Total Customer Deposit}}{\text{Total Assets}}$
2. Total loan to customer deposits (LTD) = $\frac{\text{Total Loan}}{\text{Total Customer Deposit}}$

The significance of CAMEL approach framework in banking supervision

Providing a general framework in evaluating overall performance of banks is of great importance due to the increasing integration of global financial markets. CAMEL model reflects excellently the conditions and performances of banks over years as well as enriches the on-site and off-site examination to bring better assessments towards banks' conditions. Its purpose is to provide an accurate and consistent evaluation of a bank's financial condition and operations in the areas such as capital, asset quality, management, earning ability and liquidity claims that the strength of these factors would determine the overall strength of the bank. The quality of each component further underlines the inner strength and how far it can take care of itself against the market risks.

Furthermore, it serves the purpose of summarizing the significant compliance information needed for the regulators. It also assists them to ensure the degree of supervisory concern and type of supervisory response to generate timely warnings to minimize the adverse effects on banks. In the financial crisis of 2008, this rating was being used by American government to respond to the crisis to help decide which banks needed the special help and which not as part of its capitalization program authorized by the Emergency Economic Stabilization Act of 2008.

Barker and Holdsworth (1993) find that the CAMEL system is useful, even after controlling for a wide range of publicly available information about the condition and performance of banks. This composite index further acts as a bank's failure predicting model. The rating is assigned based on both quantitative and qualitative information of the bank. If a bank's index is less than two, it is regarded as a high-quality bank, whereas institutions with grade four or five are rated to be insolvent. The up-to-date examination ratings help identify if the banks require increased supervisory attention well before they actually fail. Although Gaytán and Johnson (2002) argue that the model is only parallel with the performance of the bank at the time of the examination, while variables in banks are highly volatile to market forces; the CAMEL model is still very much popular among regulators due to its effectiveness.

Empirical literature Review

This review of the study summarizes various studies conducted in Ethiopia and other countries which are related with banks profitability and credit risk management. There have been controversies on the impact of credit risk management and bank's financial performance. while

some found that credit risk management impact positively on banks financial performance, some found negative relationship and others suggest that other factors apart from credit risk management impacts on bank's performance.

Fredrik (2012) investigated the impact of credit risk management on the financial performance of commercial banks in Kenya over the periods of years 2006-2010. CAMEL components were used as a vector of credit risk management and return on equity as a vector for financial performance. The study has shown that there is a strong relationship between the CAMEL components and return on equity. Muhammed, Shahid, Munir and Ahad (2012) used descriptive, correlation and regression techniques to study whether credit risk affect banks performance in Nigeria from 2004 to 2008. They also found that credit risk management has a significant impact on profitability of Nigerian banks. Boahene, Dasah and Agyei (2012) used regression analysis to determine whether there is a significant relationship between credit risk and profitability of Ghanaian banks. They use Return of Equity as a measure of bank's performance and a ratio of non-performing loans to total asset as proxy for credit risk management. They found empirically that there is an effect of credit risk management on profitability level of Ghanaian banks. The study also suggests that higher capital requirement contributes positively to bank's profitability.

Poudel (2012) appraised the impact of the credit risk management in banks financial performance in Nepal using time series data from 2001 to 2011. The result of the study indicates that credit risk management is an important predictor of bank's financial performance. The implication is that other variables apart from credit and non-performing loans impact on banks' profit. Regarding operating efficiency, Ali, Akhtar and Sadaqat (2011) found a negative but insignificant relationship with credit risk of Pakistan commercial banks. Inefficient managers will not cope successfully with the process of granting and monitoring loans that will lower the banks' credit quality and bring about a growth in problem loans (Salas and Saurina, 2002). Inefficient banks hold riskier portfolio (Lis, Pages and Saurina, 2000). Lis, Pages and Saurina, (2000) focused on the relationship between inefficient management and credit risk management (firms with inefficient management are unable to cope successfully with credit risk management that will lower the banks' credit quality and increase credit risk).

Gizaw, Kebede and Selvaraj (2015) evaluated the impact of credit risk management on the performance of commercial banks in Ethiopia over a period of years 2003-2004. Return on asset

and return on equity used as proxy of performance and nonperforming loan to total loan ratio, capital adequacy ratio, loan and advance to deposit ratio and loan loss provision to total loan ratio were used as a proxy for credit risk. The findings revealed that non-performing loan to total loan and loan and advances to deposit have inverse association with return on asset while the other two have positive association with return on asset. However; only nonperforming loan to total loan and loan loss provision to total loan are statistically significant to impact return on asset. Further, the study revealed that except loan loss provision to total loan ratio all the proxies of credit risk have inverse relationship with return on equity and all are significant factors impacting return on equity.). Gizaw, Kebede and Selvaraj (2015) have focused on the relationship between the credit risk management and profitability level of the banks operating in Ethiopia on commercial basis.

Hagos M. (2010) has investigated Credit Management on Wogagen Banks. The main objective of the study was to evaluate the performance of credit management of Wegagen bank in Tigray Region as compared to National Bank's requirements in comparison with its credit policy and procedures. The findings of the result of the investigation were: the issues impeding loan growth and rising loan clients complaint on the bank regarding the valuing of properties offered for collateral, lengthy of loan processing, amount of loan processed and approved, loan period, and discretionary limits affecting the performance of credit management.

Endaweke (2015) conducted a study on Risk management and its impact on performance in Ethiopian Commercial Banks, balanced fixed effect panel regression was used for the data of 8 commercial banks in the sample covered the period from 2002 - 2013. The results of panel data regression analysis showed that credit risk management indicator, Liquidity risk management indicator and operational risk indicator had negative and statistically significant impact on banks performance. Capital adequacy ratio had positive statistically insignificant impact on banks performance. In addition to this, analysis of primary data by descriptive statistical tools and on hypothesis testing using regression model, leads the researcher to conclude that banks with good risk management policies have a lower risk and relatively higher return on asset. Finally none performing loan ratio, liquidity ratio and cost to income ratio are significant key drivers of performance of commercial banks in Ethiopia.

Awoke (2014) conducted a study on the impact of credit risk on the performance of samples of eight commercial banks in Ethiopia over the period of years 2008-2012 using return on asset as

dependent variable and provision to total loans, loans to total assets, cost to total loans and natural logarithm of total asset as independent variables. The findings shown that provisions to total loans and cost to total loans have inverse association with return on asset but loans to total assets and the natural logarithm of total assets have positive association with return on asset and all variables have significant impact on return on asset. .

Summary and Knowledge Gap

Even though the studies have tried to contribute their fair share to the existing literature in some way, they are not sufficient studies. Therefore; there is a need to study the impact of credit risk management on the financial performance of Ethiopian private commercial banks. As a result; the current study shades the gap in the literature by employing CAMEL approach and profitability measures ROE. Therefore; the main purpose of this research is in order to examine the impact of credit risk measures capital adequacy ratio, asset quality, management soundness, earnings and liquidity ratio on measures of financial performance return on equity.

This study will be conducted first by considering both internal and external factors and analyzes the impact of those variables on banks profitability. This enables the researcher to examine the impact of credit risk management on performance of Ethiopian private commercial banks.

Conceptual frame work

Smyth (2004) defines a conceptual framework as a framework that is structured from a set of broad ideas and theories that help a researcher to properly identify the problem they are looking at frame their questions and find suitable literature. The conceptual framework of the study will consist of independent variables; capital adequacy, Asset quality, Management efficiency, Earning Ratio, Liquidity Ratio and a dependent variable; Return on Equity (ROE).

Independent Variables

Dependent Variables

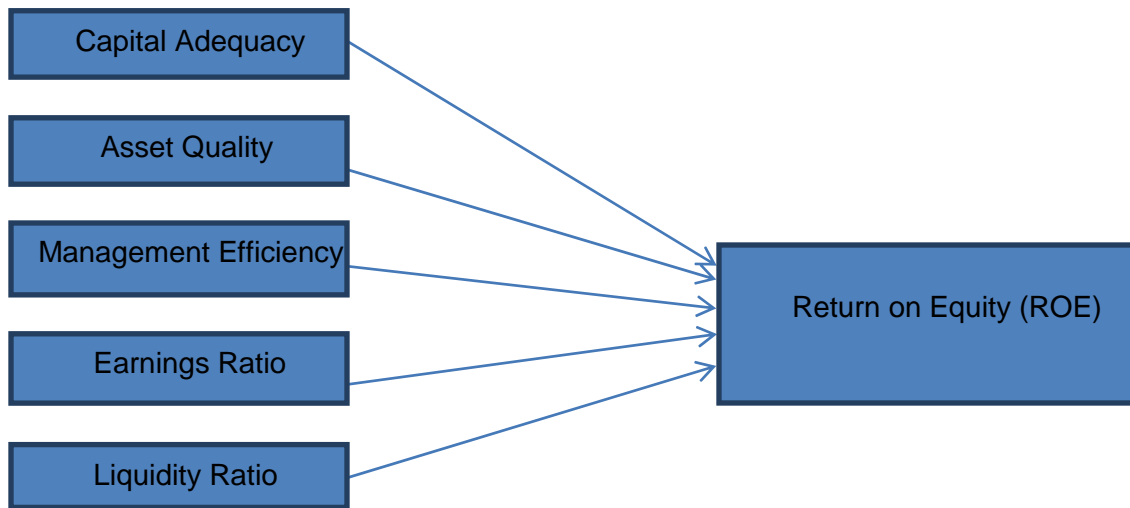


Fig.2.4: Conceptual Framework of the Study Developed by the Researcher (2020)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research design and strategy

This section deals with the methods of data collection and the methodology employed in the research analysis. According to Chopra et al. (2012) research design is the conceptual structure within which research is conducted. They specifically indicated that “a research design is the arrangement of condition for collecting and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure”. Therefore to assess the impact of credit risk management on selected private commercial banks this study uses quantitative approaches.

An explanatory type of research design is employed so as to help on gathering different data related to the problem. The explanatory research design is appropriate choice, because the study is aimed at assessing the impact of credit risk management on performance of selected private commercial banks in Ethiopia to test the casual relationship between the firms’ profitability and five determinant factors. And a fixed effect regression model is used.

Sample Size and Sampling Techniques

The study is conducted in all private commercial banks by selecting eight sample banks based on judgmental sampling by looking over duration of time that they stayed in the industry (which operate more than twelve years in banking service). And the sample banks are: Awash International Bank (AIB), Bank of Abyssinia (BOA), Dashen Bank (DB), Lion international bank (LIB) and Nib International Bank (NIB), Oromia International Bank (OIB), United Bank (UB), Wegagen Bank (WB).

Therefore, there are a total of 56 observations in the regression analysis (8 Banks*7year of operation = 56 Observations).

Type and sources of data

This research is done exclusively based on secondary data. The required secondary data is obtained from annual financial statements of the sample private commercial banks in Ethiopia.

34 Data collection methods

To generate secondary data about impact of credit risk management in the study from the mentioned above selected private commercial banks, the researcher conducted through observation method which to collect through structured document review. The data source for the study is secondary data which is Annual Reports for 7 years, 2013-2019. The study looks to the financial statements in the annual reports of the sample banks which are collected from the banks themselves.

Data Analysis techniques

To analyze the data collected from samples using the above data gathering tools, the researcher uses quantitative approach. After data is collected from the concerned body, it was processed and analyzed in accordance with the outline scheduled by the study. The relation of one dependent variable to multiple independent variables, and the regression output is obtained by using STATA econometric software package, to test the casual relationship between the firms' profitability and five determinant factors.

Model Specification

Model of this study will be used to test the Relationship between independent Variable and ROE: a regression model will be adopted. And the model for this study will be as follows:

$$ROE = \beta_0 + \beta_1 CA + \beta_2 AQ + \beta_3 ME + \beta_4 ER + \beta_5 LR + \varepsilon$$

Where

ROE=Return on Equity

CA=Capital Adequacy

AQ=Asset Quality

ME=Management Efficiency

ER=Earnings Ratio

LR=Liquidity Ratio

β_0 = Constant term

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ are coefficients of the respective independent variables.

ε = the error term

Description and Measurement of Variables

Dependent Variable

In the literature, there are two major alternatives measures of profitability, namely ROE and CAMEL. ROE shows the return to shareholders on equity.

Return on Equity (ROE)

The Return on Equity measures the Profitability of equity funds invested in the bank. It shows the profit earned per birr of capital invested. It regarded as a very important measure because it reflects the productivity of the ownership (or risk) capital employed in the bank. ROE can be calculated as:

$$\text{Return on Equity} = \frac{\text{Net profit after tax}}{\text{Total equity capital}}$$

Independent Variable

The major independent variables (determinants) or factors of the CAMEL model are capital adequacy, asset quality, Management efficiency, liquidity status which shall be proxies by bank specific factors in relation to performance.

These variables can be measured by the following formulas:

- **Capital adequacy:** the study will use gross capital to total asset ratio to measure Capital adequacy.

$$\text{Capital Adequacy} = \frac{\text{Gross Capital}}{\text{Total asset}}$$

Gross Capital includes paid up capital, retained earnings and other reserves of the bank

- **Asset quality:** the study will measure by the ratio of Provision for loan Loss to total loans.

$$\text{Asset quality} = \frac{\text{provision for loan}}{\text{Total loan}}$$

- **Managerial efficiency:** the ratio of Non-interest expense to Net Interest income plus non-Interest Income will use.

$$\text{Managerial efficiency} = \frac{\text{Non-interest expense}}{\text{Net interest income} + \text{non-interest income loan}}$$

- **Earnings ratio:** the study will use the ratio of net interest income to total interest Income (NIM).

$$\text{Earnings ratio} = \frac{\text{Net interest income}}{\text{Total interest income}}$$

- **Liquidity ratio:** the ratio of total loans to total Deposits will use.

$$\text{Liquidity Ratio} = \frac{\text{Total Loans}}{\text{Total Deposit}}$$

CHAPTER FOUR

ANALYSIS AND INTERPRETATION

This chapter deals with analysis and interpretation of data. It is organized in to four sections. The first and second section shows the descriptive statistics of variables and pair wise correlation analysis results. The third section shows the test results of model used in the data analysis. And finally regression analysis is provided in the fourth section.

Descriptive Summary Statistics of Variables

Descriptive analysis was used to describe the distribution and behavior of all the variables with respect to the firm under the study. Descriptive statistics for the dependent variable; Return on Equity (ROE) and explanatory variables involved in the regression model and CAMEL Model are presented. Mean, maximum, minimum and standard deviation values are included in the table below. These figures give overall description about data used in the models.

Table 1: summary statistics of variables

Variable	Obs	Mean	Std. Dev.	Min	Max
ro	56	.2155297	.0566168	.126516	.356703
ca	56	.1535283	.0346386	.103594	.225764
aq	56	.1524949	.2351026	0	.610464
me	56	.6079034	.2380028	.320004	1.19944
er	56	.6282812	.1953034	.330362	1
lr	56	.8744147	.5209486	.330362	2.762118

Source: stata out put

As indicates in the above table 1 the average value of ROE in overall private banks is 0.2155297 mean value and its standard deviation is 0.0566168 , as such the overall maximum and

minimum values was 0.126516 and 0.356703 respectively and average value of CA, AQ, ME, ER and LR in overall private banks is 0.153528, 0.1524949, 0.6079034, 0.6282812, & 0.8744147 and its standard deviation is 0.0346386, 0.2351026, 0.2380028, .1953034 & 0.5209486, as such the overall minimum values was 0.103594, 0, 0.320004, 0.330362, & 0.330362, and the overall maximum values was 0.225764, .610464, 1 & 2.762118 for all respectively positive values.

Correlation Analysis

In this section the correlation between profitability measures; return on equity and explanatory variables; capital adequacy, asset quality, managerial efficiency, earning ability, and liquidity have been presented and analyzed.

Table 2: Correlation among Independent and Dependent Variables (ROE)

Return on Equity (ROE), the net income per birr of equity capital, which is more concerned about how much the bank owners is earning on their equity investment. The correlation analysis was done between profitability measures; return on equity and explanatory variables; capital adequacy, asset quality, managerial efficiency, earning ability and liquidity.

	roe	ca	aq	me	er	lr
roe	1.0000					
ca	-0.4625	1.0000				
aq	0.0536	0.5215	1.0000			
me	-0.5089	0.2539	0.4668	1.0000		
er	-0.4467	0.3135	-0.2304	-0.0696	1.0000	
lr	-0.0101	-0.4561	-0.4041	-0.1738	-0.0589	1.0000

Source; stata out put

The above correlation of ROE table 2 shows that the correlation coefficient between return on equity and explanatory variables capital adequacy ratio(-0.4625), management efficiency ratio (0.5089)and earnings ratio (-0.4467) liquidity ratio (-0.00101) which means the capital adequacy, liquidity ratio, management efficiency ratio and earnings ratio of the private commercial banks

has high negative relation with Return on equity. Liquidity ratio is the lowest correlation with the ROE. The other explanatory variable asset quality (0.0536) has positive correlation with the ROE.

model test

Test for Multi co linearity

To test the independence of the explanatory variables the study used a correlation matrix of independent variables. The problem of Multi co linearity usually arises when certain explanatory variables are highly correlated. As noted by Hair et al, (2006) correlation coefficient below 0.9 may not cause serious Multi co linearity problem.

In contrary to this, Kennedy (2008) argued that as any correlation coefficient above 0.7 could cause a serious Multi co linearity problem leading to inefficient estimation and less reliable result. In addition to correlation matrix, variation inflation factor (VIF) uses for testing of Multi co linearity since if the mean value of VIF if less than 10 it implies no serous MC problem.

Table 3: correlation matrix of explanatory variables

	ca	aq	me	er	lr
ca	1.0000				
aq	0.5215	1.0000			
me	0.2539	0.4668	1.0000		
er	0.3135	-0.2304	-0.0696	1.0000	
lr	-0.4561	-0.4041	-0.1738	-0.0589	1.0000

Source; stata out put

In here in the above table 3 shows that the correlation among the explanatory variables shows perfect negative, perfect positive relationship or no relationship. In addition correlation among the explanatory variables shows serous MC problem if the correlation among two or more explanatory variables is more than 0.8 so the study concluded no MC problem since correlation among two or more explanatory variables is less than 0.8.

Table 4: variation inflation factor (VIF)

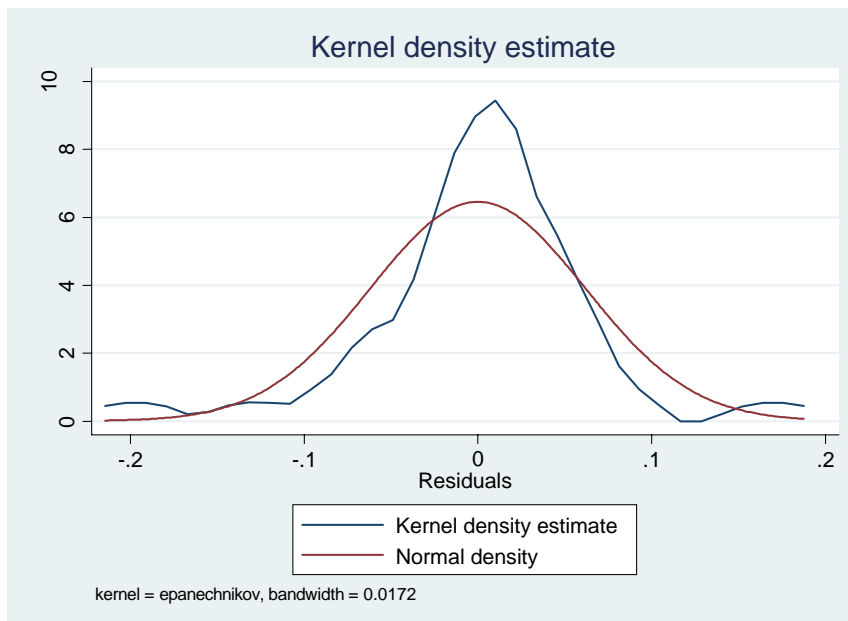
Variable	VIF	1/VIF
aq	2.18	0.459108
ca	2.03	0.491416
er	1.46	0.687269
lr	1.33	0.753560
me	1.28	0.780072
Mean VIF	1.66	

Source; stata out put

Variation inflation factor (VIF) techniques is also used to check to multi co linearity problem is exist or not. As indicates in the above table no Multi co linearity problem of explanatory variables since mean value of VIF is less than 10 as the study is tested using variance inflation factor (VIF). It concludes is no multi co linearity problem in the model.

Test for Normality

Fig.4.2.2: Testing of Normality Problem Using Graphical method



Regression Analysis of Variables

Hausman tests are tests for econometric model misspecification based on a comparison of two different estimators of the model parameter. In panel data analysis it can help you to choose between fixed effects model or a random effect model (Chmelařova, 2007). To examine the relationship between profitability measure and explanatory variables the following regression analysis were run. Such as the regression analysis was undertaken to investigate the relationship between Return on equity and independent variables. Table 5 below shows that the value of R-square is 0.7365 which means the model explains 73.65% of the variation in dependent variable by selected explanatory variable which are capital adequacy, asset quality, management efficiency, earning ratio and liquidity ratio. In the other ways, about 73.65% of the change in the dependent variable was explained by the independent variables that are including in the model. As table 5 shows p-values is zero, which the data is fitted with the model.

Table 5: Hausman test and simple regression model over ROE

roe	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
ca	-1.016755	.2222483	-4.57	0.000	-1.471303 - .562206
aq	.1372012	.0338772	4.05	0.000	.0679145 .2064879
me	-.1575197	.0256728	-6.14	0.000	-.2100264 -.1050129
er	-.0514944	.0333311	-1.54	0.133	-.1196642 .0166753
lr	-.020556	.0119335	-1.72	0.096	-.0449628 .0038508

Source; strata out put

- The finding indicates that Capital Adequacy ratio has negative and significant relation with return on equity. This implies that banks with strong capital adequacy have a tendency to absorb possible loan losses and thus, reduce the level of credit risk due to efficient utilization of its capital.
- The finding indicates that of Managerial Efficiency has negative and significant relation with return on equity. This implies Ethiopian commercial banks which allocate adequate

budget to loans selection, appraising security, monitoring and controlling of borrowers after loans disbursement resulted with lower volume of credit risk. Thus, improve loan quality of banks and ultimately reduced the probability of credit risk.

- The finding indicates that of Earning Ratio has negative and insignificant relation with return on equity. Firm with higher forward earnings ratio achieve lower ROE on the subsequent years and distribution of their realized ROE is more volatile and wide spread than firms with lower forward earning ratio.
- The finding indicates that Liquidity Ratio has negative and insignificant relation with return on equity. This implies the lower the liquidity of a company the higher the probability that the company could not fulfill its short term debt, however that the funds could be used for productive activities or investment hence improving its profitability.
- The finding indicates that of Asset Quality has positive significant relation with return on equity.

According to the Hausmantest random effect regression model the study wants to answer the following hypotheses

Ho₁: There is no significant relationship between capital adequacy ratio and return on equity of the banks.

The analysis result Table 5 has showed there is negative significant relationship between capital adequacy ratio and return on equity and the study rejected the null hypothesis so as to accepted the alternative hypothesis since the probability value of capital adequacy ratios is 0.000 or it is significant value so if the probability value is significant, null hypothesis is rejected so as to accept the alternative hypothesis at 95% level of confidence interval and vice versa. A study by Abdelrahim (2013) has also found similar finding while a study by Mwangi (2012) revealed inverse but significant relationship between capital adequacy ratio and return on equity. In Table 5 regression after Hausman test shows asset quality ratio and ROE have negative significant relationship.

Ho₂: There is no significant relationship between asset quality ratio and return on equity of the banks.

The analysis result Table 5 has showed there is positive significant relationship between asset quality ratio and return on equity and the study rejected the null hypothesis so as to accepted the

alternative hypothesis since the probability value of capital adequacy ratios is 0.000 or it is significant value so if the probability value is significant, null hypothesis is rejected so as to accept the alternative hypothesis at 95% level of confidence interval and vice versa. A study conducted by Aduda and Gitonga (2011) have found similar result. Whereas Boahene, Dasah and Agyei (2012), Afriyie and Akotey (2013) and Charles and Kenneth (2013) have revealed positive and statistically significant association between asset quality and return on equity. In Table 5 regression after Hausman test shows asset quality and ROE have positive significant relationship.

Ho₃: There is no significant relationship between management efficiency ratio and return on equity of the banks.

The analysis result Table 5 has showed there is negative significant relationship between management efficiency ratio and return on equity and the study rejected the null hypothesis so as to accepted the alternative hypothesis since the probability value of management efficiency ratios is 0.000 or it is significant value so if the probability value is significant, null hypothesis is rejected so as to accept the alternative hypothesis at 95% level of confidence interval and vice versa. A study conducted by Abdelrahim (2013) has found similar result.

In table 5 regression after Hausman test shows management efficiency ratio and ROE have negative significant relationship.

Ho₄: There is no significant relationship between earnings ratio and return on equity of the banks.

The analysis result table 5 has showed there is negative in significant relationship between earnings ratio and return on equity and the study accept the null hypothesis so as to reject the alternative hypothesis since the probability value of earnings ratios is 0.133(13.3%) or it is in significant value so if the probability value is in significant, null hypothesis is accept so as to reject the alternative hypothesis at 95% level of confidence interval and vice versa. A study by Abdelrahim (2013) has also revealed same result. In table 5 regression after Hausman test shows earnings ratios and ROE have negative in significant relationship.

Ho₅: There is no significant relationship between liquidity ratio and return on equity of the banks.

The analysis result table 5 has showed there is negative in significant relationship between liquidity ratio and return on equity and the study accept the null hypothesis so as to reject the alternative hypothesis since the probability value of liquidity ratios is 0.096 (0.96 %) or it is in

significant value so if the probability value is in significant, null hypothesis is accepted so as to reject the alternative hypothesis at 95% level of confidence interval and vice versa. Another studies conducted by Li and Zou (2014) and Afriyie and Akotey (2013) have revealed negative but significant association between liquidity ratios and return on equity .In table 5 regression after Hausman test shows liquidity ratios and ROE have negative in significant relationship. Some study shows the result of liquidity on banks profitability is also at variance with the findings of Liyugi (2007) who found negative relationship between credit risk and liquidity on banks performance.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

In this chapter the major findings of the study are summarized; conclusions are drawn based on the findings and recommendations are forwarded for the concerned bodies.

5.1. Summary

The main objective of this study was to evaluate the impact of credit risk management on profitability (ROE) on selected private commercial banks financial performance in Ethiopia. Based on CAMEL approach as well as to investigate the relationship between CAMEL variables with profitability measure Return on Equity (ROE) Balanced data of fifty six observations from 2013 to 2019 of eight private banks was analyzed using data regression model with Hausman test of random effect regression model was fitted for the regression analysis which is part of multiple linear regressions model.

Descriptive statistics for the dependent variable; Return on Equity (ROE) and explanatory variables involved in the regression model and CAMEL Model are presented. Mean, maximum, minimum and standard deviation values are included. These figures give overall description about data used in the models. The average value of ROE in overall private banks is 0.2155 mean value and its standard deviation is 0.0566, as such the overall maximum and minimum values was 0.3567 and 0.126516 respectively.. In addition average value of CA, AQ, ME, ER and LR in overall private banks is 0.153528, 0.1524949, 0.6079034, 0.6079034, 0.6282812, & 0.8744147 and its standard deviation is 0.0346386, 0.2351026, 0.2380028, .1953034 & 0.5209486, as such the overall minimum values was 0.103594, 0, 0.320004, 0.330362, & 0.330362, and the overall maximum values was 0.225764, .610464, 1 & 2.762118 for all respectively positive values

Conclusion

The study concluded that as to linear effect regression model, Capital adequacy ratio and management efficiency ratio has negative significant relationship with ROE but Asset quality ratio has positive significant relationship with ROE and liquidity ratio and earnings ratio has negative in significant relationship with ROE at 95% confidence interval and at 5% level of significance. And in the correlation matrix of among explanatory variables the study found that the capital adequacy ratio has negative relationship with liquidity ratio but all explanatory variables have positive relationship with capital adequacy ratio and Earning ratio has negative relationship with all explanatory variables except with Capital adequacy and liquidity ratio has negative relationship with all explanatory variables and In the correlation matrix of among the ROE and the explanatory variables the study found that the only asset quality ratio has positive relationship with ROE but the rest explanatory variables(i.e. management efficiency ratio, Liquidity ratio, Earning ratio and capital adequacy ratio have negative relationship with ROE and capital adequacy ratio was negative correlation with the Liquidity ratio. and Earning ratio has negative relationship with all explanatory variables except with Capital adequacy and liquidity ratio has negative relationship with all explanatory variables This shows that the management efficiency, Liquidity ratio, Earning ratio and capital adequacy ratio increases the ROE of private commercial banks also increase. When the management efficiency, Liquidity ratio, Earning ratio and capital adequacy ratio decreases the ROE of private commercial banks also decrease. And also the other explanatory variables are vice versa.

Recommendation

Based on the findings of the study the following recommendations were forwarded. The study revealed all CAMEL variables are the key driver of profitability (return on equity) of private banks in Ethiopia similarly the study also identified capital adequacy , management efficiency ,earning ability and therefore, Bank managers are advised to give due attention to those variables and to use other mechanisms to improve profitability. The CAMEL model is useful tools for banking sectors; however, the tool can be equally applicable to other related financial institution Like Micro Finance Institution and Insurance Companies. Thus, future research is recommended to use the CAMEL model for such kind of institution.

Furthermore bank performance is now a day's seen from the perspective of economic value added (EVA) in addition to the ROE measures. The CAMEL model has also the sixth dimension referred as sensitivity to the market. Therefore, future research would make relevant contribution if it considers those two developments into the research the model i.e. EVA to measure bank performance and sensitivity to the market as the sixth dimension of the CAMEL model. The current study fully employed secondary data and the analysis was fully based on financial data. However, secondary data obtained from financial reports of banks or through National Bank can have potential bias.

Liquidity must be well managed to ensure that the banks would be in a position to meet the credit and withdrawal needs of customers. Capital adequacy is found negatively related with credit risk and hence, Banks should strive to improve their Capital level through mobilizing funds by issuing more shares to the new and existing shareholders. As highly capitalized banks are good in absorbing more losses. The management of Ethiopian Commercial banks must be well resourced to be efficient. Also, management positions should be filled with competent and skilled individuals to be able to steer the affairs of the bank effectively

However the commercial bank's should also give due attention to that of the mentioned independent variables & dependent variables which could have the possibility to affect the profitability of commercial banks just for the sake of obtaining good profitability.

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ANNEX

Appendix 1: correlation matrix of explanatory variables

	ca	aq	me	er	lr
ca	1.0000				
aq	0.5215	1.0000			
mqr	0.2539	0.4668	1.0000		
er	0.3135	-0.2304	-0.0696	1.0000	
lr	-0.4561	-0.4041	-0.1738	-0.0589	1.0000

Appendix2: correlation among the dependent (ROE) variables and independent variables

	roe	ca	aq	me	er	lr
roe	1.0000					
car	-0.4625	1.0000				
aqr	0.0536	0.5215	1.0000			
mqr	-0.5089	0.2539	0.4668	1.0000		
er	-0.4467	0.3135	-0.2304	-0.0696	1.0000	
lr	-0.0101	-0.4561	-0.4041	-0.1738	-0.0589	1.0000

Appendix 3: Simple regression model of ROE over the explanatory variables

Source	SS	df	MS	Number of obs =	56
Model	.080269764	5	.016053953	F(5, 29) =	16.21
Residual	.028715883	29	.000990203	Prob> F =	0.0000
Total	.108985646	34	.00320546	R-squared =	0.7365
				Adj R-squared =	0.6911
				Root MSE =	.03147


```

-----
      roe |   Coef.  Std. Err.   t  P>|t|  [95% Conf. Interval]
-----+-----
ca | -1.016755 .2222483   -4.57 0.000   -1.471303   -.562206
aq | .1372012 .0338772    4.05 0.000    .0679145   .2064879
me | -.1575197 .0256728   -6.14 0.000   -.2100264  -.1050129
er | -.0514944 .0333311   -1.54 0.133   -.1196642   .0166753
lr | -.020556 .0119335   -1.72 0.096   -.0449628   .0038508
   _cons | .496792 .0365357   13.60 0.000   .4220681   .571516
-----

```

Appendix 4 VIF Technique

```

Variable |  VIF   1/VIF
-----+-----
aq |   2.18  0.459108
ca |   2.03  0.491416
er |   1.46  0.687269
lr |   1.33  0.753560
me |   1.28  0.780072

```

Appendix 5: summary statistics of variables

```

Variable |  Obs   Mean  Std. Dev.  Min   Max
-----+-----
roe |   56 .2155297 .0566168 .126516 .356703
car |   56 .1535283 .0346386 .103594 .225764
aqr |   56 .1524949 .2351026  0     .610464
mqr |   56 .6079034 .2380028 .320004 1.19944
er |   56 .6282812 .1953034 .330362  1
lr |   56 .8744147 .5209486 .330362 2.762118

```