

Addis Ababa

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**COLLEGE OF BUSINESS AND ECONOMICS**

**Department of Accounting and Finance**

**The Effect of Non-performing loans of Commercial Bank of Ethiopia on the Financial Performance of The Bank: Special Emphasis Given to Three Government Selected Priority Sector Loans**

By: Girma Lakew

A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Science in Accounting and Finance

**June 2019**  
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Advisor: Habtamu Berhanu (PHD)

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## **Declaration**

I, the undersigned hereby declare that the thesis work entitled “The Effect of Non-performing loans of Commercial Bank of Ethiopia in the Financial Performance of The Bank Special Emphasis Given to Three Government Selected Priority Sector Loans” is my original work. It had not been presented for a partial fulfillment for any educational qualification at this or any other university and all the resources used for this thesis had been accordingly acknowledged.

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**College of Business and Economics**

**Examiners Approval Sheet**

We the undersigned members of the board of examiners of the final open defense by Girma Lakew have read and evaluated his thesis entitled "The Effect of Non-performing loans of Commercial Bank of Ethiopia in the Financial Performance of The Bank Special Emphasis Given to Three Government Selected Priority Sector Loans" and evaluated the candidate. This is therefore, to certify that the research has been accepted in partial fulfillment of the requirement for the masters of Science Degree in Accounting and finance.

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External Examiner	Signature	Date
_____	_____	_____

### **Statement of Certification**

I hereby declare that the study which is being presented in this thesis entitled “The Effect of Non-performing loans of Commercial Bank of Ethiopia in the Financial Performance of The Bank Special Emphasis Given to Three Government Selected Priority Sector Loans” is conducted by Girma Lakew for the partial fulfillment of the requirements for the award of master’s degree in Accounting and Finance. To the best of my knowledge it is original work carried by him, and it had not been presented for a partial fulfillment for any educational qualification at this university or any other and in any projects by any means.

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Dr. Habtamu Berhanu

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Date

Advisor

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## Acronyms

AGRI	Agricultural
CA	Capital Adequacy
CBE	Commercial Bank of Ethiopia
CRM	Credit Relationship Manager
DWL	Director Workout Loans
EXPO	Export Trade
IMF	International Monetary Fund
LA/TD	Total Loan & Advances to Total Deposit
LLP/CL	Loan Loss Provision to Classified Loans
LLPNPL	Loan Loss Provision to Non Performing Loans
LP/NPL	Loan Provision to Non-Performing Loan
LP/TA	Loan Provision to Total Asset
LPTLA	Loan Provision to Total Loan and Advance
MFG	Manufacturing
MPT	Modern Portfolio Theory
NBE	National Bank of Ethiopia
NPLs	Non Performing Loans
NBE	The National Bank of Ethiopia

NPL/TL	Non-Performing Loan to Total Loan
NPL/TLA	Non-Performing Loan to Total Loan and Advance
NPL/LP	Non-Performing Loan to Loan Provision
ROA	Return on Asset
ROE	Return on Equity
SBB	Supervision of Banking Business
TLATD	Total Loan and Advance to Total Deposit
VPC	Vice President Credit
WLO	Workout Loans Officer

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## ABSTRACT

This study attempts to reveal the impact of non-performing loans of three government selected priority sector loans on financial performance of commercial bank of Ethiopia. In order to investigate these study quantitative research approach is employed based on documentary analysis. The study used one dependent variable return on asset (ROA), three independent variables that are: nonperforming loans of Agricultural, Manufacturing and Export loans to total of AGRI, MFG & EXPO loan provision of for doubtful loans of AGRI, MFG & EXPO businesses loans and advance NPL loans of AGRI, MFG & EXPO Loans ratio and CAR as measures financial performance of commercial bank of Ethiopia. A quantitative approach is employed for the required data collection and a sample of ten recent consecutive years is selected. The data is then analyzed using descriptive, correlation and regression techniques through SPSS software package. The regression result shows that non-performing loan to total loan and advance ratio, loan loss provision to non-performing loan to non-performing loans of AME loans show negative and significant effect at 5% significance level on financial performance of commercial bank of Ethiopia. Capital adequacy ratio shows positive relation in line with the research hypothesis but as to the significance it is not found significant as per the research hypothesis. Finally the research concluded that non performing has significant effect on financial performance of commercial bank of Ethiopia. Hence, the study recommends that National Bank of Ethiopia should issue procedure Commercial Bank of Ethiopia should enhance its capacity in credit analysis and loan administration especially on these three government selected three priorities given sectors of businesses loans

*Key words: Non performing loans, bank, financial performance*

## CHAPTER ONE

### 1. INTRODUCTION

#### 1.1 Background of the study

Credit creation is the main income generating activity for the banks; however, this activity encompasses huge risks to the lender and the borrower Kargi, (2011). When financial institutions issue loans, there is a risk of borrower default and when banks collect deposits and lend them to other clients, they put client's savings at risk (Bessis, 2003). The risk of a trading partner not fulfilling his or her obligation as per the contract on due date or anytime thereafter can greatly jeopardize the smooth functioning of a bank's business. The default of small number of borrowers may result to large losses for a financial institution which can lead to massive financial distress affecting the whole economy. Bessis, (2003) an efficient and well-functioning financial sector is essential for the development of any economy, and the achievement of high and sustainable growth. Asset quality is one of the indicators of financial sectors health. Most unsound financial sectors of countries show high level of non- performing assets.

As IMF, (2009) stated that a non- performing loan is any loan in which interest and principal payment is more than 90 days overdue or more than 90 days' worth of interest has been refinanced. NPL can be treated as undesirable output or cost to loaning banks which decreases the bank performance.

As (Mac Donald and Koch, 2006) stated Loans are the dominant assets which represent 50-75% of the total amount in most banks, which generate the largest share of operating income and represents the banks greater risk exposure. Non-performing loans have an effect on the financial performance of commercial banks because loans are assets that need to generate returns for an organization and when loans given out are not recovered together with interest then it implies that more resources will need to be committed towards provision for non-performing loans and additional costs is going to be used in financing recovery efforts. Like any other business, success of banking is assessed based on profit and quality of asset it possesses; (Chege, 2014). Moreover, bank financing

(loan) to the economy contribution to the growth of any country is huge in that they are the main intermediaries between depositors and with those in need of fund for their viable projects (creditors) thereby ensure that the money available in economy is always put to optimum use. Therefore, managing loan in a proper way not only has positive effect on the banks performance but also on the borrower firms and a country as a whole. Failure to manage loans, which make up the largest share of bank assets, would likely lead to the occurrence of high level of non-performing loans (Sontakke and Tiwari, 2013).

Hennie and Sanja (2009) define NPLs as assets not generating income this is when principal or interest is due and left unpaid for 90 days or more. (Lakew, 2001), noted that minimum level of non-performing asset among other things is a requests for sound financial system which in turn facilitates the development of a country.

Under the Ethiopian banking business directive No SBB 69, 2018 non-performing loan assets are defined as “loans or advances whose credit quality has deteriorated such that full collection of principal and/or interest in accordance with the contractual repayment terms of the loans or advances is in question.”

The causes for a loan to become Non-performing (NPL) can be grouped into bank specific factors (internal) like poor appraisal processes, weak loan follow-ups and external factors like political condition and stability of the business environment, government regulation and interferences. Such interference was happened in the Commercial Bank of Ethiopia (CBE), which has been forced CBE to give priority to avail Loans to three government selected businesses i.e. Manufacturing (MFG), Export Trade (EXPO) and Agricultural (AGRI) sectors of businesses.

Financial performance refers to the subjective measure of how well a firm can use assets from its primary mode of business and generate revenues (Essayas, 2018).As (Mombo, 2013) stated financial performance is therefore a very important aspect of financial management and can thus not be ignored because it's central to the survival of any business enterprises. Without sound financial performance, a business organization may easily close down its operations.

As per the CBE's annual report 2016 the outstanding loans balance of AGRI, MFG and EXPO businesses loans were ETB 13.04 billion ; ETB 73.25 billion and ETB 23.81 billion respectively the percentage share of the sum of these three were 81.79% out of the total standing loans to customers as of June 30, 2016 i.e. by CBE. The entire country outstanding loan balance of AGRI, MFG and EXPO as of June 30/2016 was ETB 178.87 of which CBE's share was 61%.

Hence occurrences of non-performing loans in the commercial bank of Ethiopia specialty on the AGRI MFG & Expo, sector loans will have significant & adverse impact on CBE's financial performance as well as the Ethiopian economy. And recent NPL portfolio of CBE showed that the amount of NPL emanated from these selected three sectors loan alone has been found ETB 4.5 billion portfolio report of CBE February 28/2019.

## **1.2 Statement of the Problem**

As (Bessis, 2005) mentioned that the aim of every commercial banking institution is to operate profitably in order to maintain its stability and improve in growth and expansion. And also, for the commercial banking, lending represents the heart of the industry. Loans are the dominant asset at most banks, generate the largest share of operating income, and represents the bank's greatest risk exposure.

As (Saundeers, 2005), stated that Non-performing loans are one of the determinant factors for the soundness of the banking sector and Loan portfolio constitutes the largest operating assets and source of revenue of most commercial banks however, some of the loans given become non-performing and adversely affect the profitability and overall financial performance of the lending banks. This situation will reduce the liquidity of the lending banks since, the investment program as well as the country's economy as a whole. At the same time nonperforming loan rate is the most important issue for banks to survive. The issue of non-performing loan has therefore, gained increasing attentions since the immediate consequence of large amount of NPLs in the banking system is a cause of bank failure.

As (Boudriga, 2009) stated, the loans extended to any sector of the economy must be recovered in full, if the objective of circulating more and more financial resources to meet the increase demands for credit and to keep the bank in sound financial health (Boudriga,2009).

The NPLs negates the profitability of the banks. Nonperforming loans are not only argued to harmfully affect the financial performance of banks, but it also has other far reaching consequences. This is due to the fact that, other potential borrowers may be denied to access credit facilities since part of the funds that could be extended as loans by the banks are still tied to NPLs. The non-performing loans also affect the economy of a country which explains the rationale behind the setting of guidelines by the central bank for enabling financial institutions to alleviate NPLs (Boudriga, 2009)

As (Addisu, 2014) Stated Commercial banks in Ethiopia play a vital role in the economic resource mobilization and allocation of countries by which they make the community's surplus of deposits and investments useful by lending it to investors for various investment purposes. Though, Ethiopia is known by underutilization of land capital and abundant Manpower resources.

As it is mentioned above currently in Ethiopia seventeen commercial banks are in operation. Based on the owner these seventeen commercial banks can be classified in to two i.e. sixteen privately owned in one side and one government owned commercial bank (CBE) on the other side. As per the NBE quarterly bulletin report No 34 and the CBE's annual financial report of June 2016 the sum total outstanding loans balance all commercial banks operating in Ethiopia (excluding credit to the government and intern bank lending) was birr 234.13 billion of this the share of CBE was birr 134.62 billion i.e. 57.497% and while the share of all the sixteen commercial banks was birr 99.51 i.e. 42.5%.

Of the country's total outstanding loans of birr 234.13 billion these three priority given sectors loans share was birr 144.91 billion i.e. 61.89% and of this CBE's share was birr 110.09 billion which was 75.97% while the share of the sixteen commercial banks total was birr 34.82 billion i.e. 24.02% .in terms of paid up capital the share of CBE and the

rest sixteen commercial banks was 60 to 40 percent respectively. Recent days NPL's of CBE's loan are mainly emanated from these three government selected sectors of businesses. For instance As per the CBE's Director Workout loans Month end NPL portfolio report of February 2019, out of the loans disbursed by Branches of CBE operating in Addis Ababa and the surrounding areas of Addis, birr 4.28 billion amount of loans were found under NPL category and of these NPL total, 85.03% birr value of ETB 3.64 billion were originated from loans financed by Branches of CBE operated in Addis Ababa and the surrounding areas of Addis to these three sectors of businesses. Each sector Manufacturing, Export and Agricultural sector's share of NPL was 1.64, 1.25 and 0.75 billion of birr respectively. Hence one can imagine that the amount of non-performing loan of Agricultural, Manufacturing and Foreign Trade loans of CBE will considerably affect the financial performance of the bank as well as the state economy.

Despite this Empirical studies which had been conducted regarding the effect of non-performing loans and credit risks on financial performance of the commercial banks in Ethiopia by (Addisu, 2014) and (Tsegaye, 2018); (Girma 2011); (Tibebu, 2011) and (Agegnehu, 2013) were done by taking both privately owned and government owned Commercial Banks together as their sample representative for their studies. In effect; they mingled the impact of such huge amount of Government selected priority given three sector loans NPLs of CBE with relatively small amounts of NPLS emanated from the other sector businesses loan of CBE and with NPLs of other sixteen private commercial banks together.

Hence all the previous empirical studies failed to show separately the effect of such huge amount of NPL of these three sectors loans impact on the financial performances of CBE alone. This leave a gap i.e. no separate study had been conducted on the AME loans of CBE alone this motivated me to fill this gap i.e. the researcher to examine the effect of NPL of MFG, AGRI & Export loans and advances on the financial performance of Commercial Bank of Ethiopia.

### **1.3 Research Questions**

Based on the above stated statement of problem researcher developed study developed the following research question.

How non-performing loans of Manufacturing, Agricultural & Foreign Trade business loans and advances affect financial performance of commercial bank of Ethiopia?

### **1.4 Objective of the study**

#### **1.4.1 General Objective**

The main objective of this study is to examine the effects of non-performing loans of Manufacturing; Agricultural & Export trade business loans and advances on the financial performance of Commercial Bank of Ethiopia.

#### **1.4.2 Specific objectives**

To achieve the general objective the following specific objectives are developed:

1. To examine the effect of Non-Performing Loans of AGRI, MFG & EXPORT business to Total AGRI, MFG & EXP businesses Loan and Advance ratio on the financial performance of CBE.
2. To analyze the effect of default loan Provisions established during the year for NPL loans AGRI, MFG & EXP businesses and Advance to total NPL of AGRI, MFG & EXP businesses Loan and Advance ratio and.
3. To scrutinize the effect of Capital Adequacy Ratio on the financial performance of CBE.

### **1.5 Hypotheses of the Study**

In order to achieve the objectives set for the research, the following research hypotheses developed. And accordingly with the help of empirical study on CBE the study was developed and tests the following hypothesis:

**H1:** Non-Performing Loans of AGRI, MFG& EXPO business's loans to Total AGRI, MFG& EXPO businesses Loan and Advance ratio has negative and significant impact on financial performance of CBE.

**H2:** Default Loan Provision of AGRI, MFG& EXPO business's Loan and Advance to total NPL of AGRI, MFG& EXPO businesses Loan and Advance ratio has negative and significant impact on financial performance of CBE.

**H3:** Capital adequacy ratio has significant and positive impact on the financial performance of CBE.

## **1.6 Scope of the Study**

This study is limited to quantitative impacts of non-performing loans of Agricultural, Manufacturing and Export businesses loans and advances on the financial performance of Commercial Bank of Ethiopia. In terms of time sphere this study confined itself and only considered a time series quantitative data of the ten years period covering 2008 to 2018 using Return on Asset as proxy estimator of CBE's financial performance. Though, there are eighteen commercial banks currently operating in Ethiopia, i.e. (one Government owned and seventeen private owned). The study is conducted at Addis Ababa on Commercial bank of Ethiopia only. Finally, the study used the quantitative approach and focuses on the description of the outputs from SPSS software and give the researcher own explanations.

## **1.7 Limitations of the Study**

The study was also limited by, the data collection process time since the final summation date is decided to be June 30, 2019. Despite these limitations; the project work will be useful to any person that wants to know about the impact of non-performing loans government selected three priority sectors loans on its financial performance CBE.

## **1.8 Significance of the Study**

This study will insight the CBE's Management team as well as the owner CBE (government) negative impact of the NPLs of these Priority given three sectors loans and advances on the financial performance of the bank separately. So as to enable them to take prompt and necessary action accordingly that leads the bank towards optimum utilization of its asset for best financial performance as well as to play its crucial role for the development of Ethiopian economy. And the study would help to aware the National bank of Ethiopia to look the existing regulation capabilities of protecting the lending bank and depositors from such type of government emanated default risk consequences not to be to the extent that significantly affects the financial performance of the CBE and the entire economic growth of the country, and also it would help NBE to check such priority given sectors of businesses, are they in line with fulfilling the government desired result/s expected from them or not? In addition, the study would also contribute to the existing body of knowledge regarding the impact of non-performing of these three government selected priority sectors of businesses and motivate further research on commercial Banks of Ethiopia.

## **1.9 Organization of the Study**

The study organized into five chapters with different sections and sub-sections which are structured as follows. Chapter one discusses introduction of the study that would give a brief overview of the background of the study. This chapter also discusses objectives, research hypotheses, scope, significance and limitation of the study. In chapter two theoretical foundations of the study and empirical studies conducted on relevant studies are presented. Chapter three focuses on methodology of the study. It explains the research design, the target population, data collection method, measuring instruments, and data analysis techniques. Chapter four also provides the data analysis and presentation of the study. It mainly covers the analysis of the econometric model outcomes and discussion of the research results. The last chapter as usual explains conclusion and recommendation based on interpretation of the research results with further research directions.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter summarizes the information from the available literature in the same field of study. It reviews theories as well as empirical studies on impact of non-performing loans on financial performances of commercial banks, the gap in existing literature and developed conceptual frame work of the study

#### **2.2 Theoretical Reviews**

##### **2.2.1 Modern Portfolio Theory**

Markowitz (1952) Modern portfolio theory (MPT) is one of the most important and powerful economic theories dealing with finance and investment. Modern portfolio theory measures the benefits of diversification, known as “not putting all your eggs in one basket”. Modern portfolio theory (MPT) is an investment theory which tries to explain how investors could maximize their returns and minimize their risks by diversification in different assets. (Tobin, 1958) expanded the theory of Markowitz’s (portfolio theory) by adding the analysis of risk free assets which made it possible to influence portfolios on the efficient frontier. (Markowitz, 1952) and (Tobin, 1958) showed that it was possible to identify the composition of an optimal portfolio of risky securities, given forecasts of future returns and an appropriate covariance matrix of share returns.

The portfolio theory approach is the most relevant and plays an important role in bank performance studies (Atemnkeng & Nzongang, 2006). According to the Portfolio balance model of asset diversification, the optimum holding of each asset in a wealth holder’s portfolio is a function of policy decisions determined by a number of factors such as the vector of rates of return on all assets held in the portfolio, a vector of risks associated with the ownership of each financial assets and the size of the portfolio. It implies portfolio diversification and the desired portfolio composition of commercial banks are results of decisions taken by the bank management. Further, the ability to obtain

maximum profits depends on the feasible set of assets and liabilities determined by the management and the unit costs incurred by the bank for producing each component of assets, (Atemnkeng & Nzongang, 2006). Commercial Banks should consider diversifying investments portfolio to minimize risk of credit takers defaulting in loans repayments and causing non-performing loans portfolios that affects profitability.

### **2.3 Sources of Non-Performing Loans**

Coyle (2000) defines credit risk as losses from the refusal or inability of credit customers to pay what is owed in full and on time. The main sources of credit risk include, limited institutional capacity, inappropriate credit policies, volatile interest rates, poor management, inappropriate laws, low capital and liquidity levels, directed lending, massive licensing of banks, poor loan underwriting, reckless lending, poor credit assessment., no non-executive directors, poor loan underwriting, laxity in credit assessment, poor lending practices, government interference and inadequate supervision by the central bank (Coyle, 2000). To minimize these risks, it is necessary for the financial system to have well-capitalized banks, service to a wide range of customers, sharing of information about borrowers, stabilization of interest rates, reduction in non-performing loans, increased bank deposits and increased credit extended to borrowers.

Loan defaults and nonperforming loans need to be reduced (Bank Supervision Annual Report, 2006; Laker, 2007; Sandstorm, 2009).Credit risk largely arises in assets shown on the balance sheet, but it can also show up on off balance sheet in a variety of contingent obligations. (Okorie, 1998) identified poor project supervision, evaluation and management; untimely loan disbursement; diversion of funds; and dishonesty of loan beneficiaries as causes of loan default which ultimately leads to credit risk.

Theoretically there are so many reasons as to why loans fail to perform. Some of these include depressed economic conditions, high real interest rate, inflation, lenient terms of credit, credit orientation, high credit growth and risk appetite, and poor monitoring among others. (Bercoff et al. 2002) categorizes causes of nonperforming loans to bank specific and macroeconomic conditions.

Credit risk is the most obvious risk of a bank by the nature of its activity. In terms of potential losses, it is typically the largest type of risk. Credit risk is the risk that a borrower defaults and does not honor its obligation to service debt. (Valsamakis, Vivian & Du Toit, 2005) also describe credit risk as the risk that a financial contract will not be concluded according to the agreement. Credit risk encompasses both the loss of income resulting from the sector's inability to collect anticipated interest earnings as well as the loss of principal resulting from loan defaults.

#### **2.4 Non-performing Loan (Non-performing asset)**

The concept of non-performing loans or assets has been defined in different literatures. According to (Patersson and Wadman, 2004), non-performing loans are defined as defaulted loans which banks are unable to collect from borrowers. They are loans and advances which cannot be recovered within stipulated time that is governed by the laws of a country. (Fofac, 2009) also discussed that non-performing loans generally refer to loans which for a relatively long period of time do not generate income; that is the principal and/or interest on these loans has been left unpaid for at least 90 days.

Non-performing loans are leading indicator of credit quality (Machiraju, 2003). Studies previously discussed indicated that loans and advances have constituted the primary source of income by banks. Like any business establishment, a bank also seeks to maximize its profit. As loans and advances are more profitable than any other assets, a bank is willing to lend as much of its funds as possible. Credit quality is, however, the main concern of the banks.

Most of the time banks try to balance the issue of maximizing profit by lending and at the same time manage risk of loan default as it would impair profit and thereby the very capital indeed, a bank needs to be cautious in advancing loans as there is a greater risk which follows it in a situation where the loan is defaulted. In other words, loan loss or defaulted loan puts a bank in a difficult situation especially when it is in greater amount. According to (Tibebu 2011), the immediate consequence of large amount of non-

performing loans and advances in the banking system is bank failure. Despite the fact that banks hold security for the loans they grant they cannot be fully certain as to whether they are paid or not. It is when such risks materialize that loans turn to be non-performing.

## **2.5 Effect of Non-Performing Loans on Financial Performance of Commercial Banks**

Negera (2012) conducted a study on the determinants of non-performing loans, the case of Ethiopian banks and stated that mixed research approach was adopted for the study. Survey was conducted with professionals engaged in both private and state owned banks in Ethiopia holding different positions using a self-administered questionnaire. In addition, the study used structured review of documents and records of banks and in depth interview of senior bank officials in the Ethiopian banking industry. The findings of the study showed that poor credit assessment, failed loan the findings of the study shows that poor credit analysis, aggressive lending, undeveloped credit culture, compromised integrity, weak institutional capacity, unfair competition among banks, willful default by borrowers and their knowledge limitations, fund diversion for unintended purpose, over/under financing by banks ascribe to the causes of loan default. However, the study outcome failed to support the existence of relationship between bank size, interest rate they charge and ownership type of banks and occurrence of NPL (Wanjiru, 2013).

The study found that there is strong, relationship between NPLs and financial performance which affect financial performance of commercial banks. The study found that there is a relationship between NPLs in commercial banks. Management of NPLs in banks help to improve the financial performance of banks as interest on loans is the biggest income of banks and increases the liquidity position of banks, helps in protecting the bank's reputation and reduces losses.

As (Stallion,2004 ) the effect of non-payment of debts due on banks profitability can be identified with a possible bank failure, barrier to further lending, reduction in profit level and negative economic growth in the society. Stallion (2004) emphasized the effect of the Non-performing Loans as a major cause of bank failure and positively stated that,

although poorly managed trading risk can quickly sink a bank, the oldest and biggest cause of bank failure is still loans that turn sour.

Girma (2011) reported that a high level of non-performing assets suggests high probability of a large number of credit defaults that affect the Profitability and net-worth of banks and also erodes the value of the asset which in turn reflected in the whole economy. Time and efforts of management is another indirect cost which banks have to bear due to NPAs. Time and resource and efforts of management in handling and managing non-performing assets would have been diverted to some fruitful activities, which would have given good returns.

Non- performing assets are loans whose cash flows stream is so uncertain that the bank does not recognize income until cash is received and at the same time, banks are required to provide provisions for non-performing asset from their current profits. In the process of lending, banks need to held provisions for loan losses. A higher level of loan loss provision relative to size of total loans is an indication that the bank’s assets are becoming more difficult to collect (Girma, 2011.)

The National Bank of Ethiopia (NBE) under Article 7 of directive No. SBB/69/2018 states that: All banks shall maintain a provision for loan losses account which shall be created by charges to provision expense in the income statement and shall be maintained at a level adequate to absorb potential loss in the loans or advanced portfolio.

**Table 2.1 Minimum Percentage of Provision to be maintained by Banks**

<b>Number of days the scheduled payment past due</b>	<b>Loan Status</b>	<b>Minimum Percentage of provision that the banks to be maintained</b>
0 days	Pass	1%
1 to 90 days	Special Mention	3%
91 to 180 days	Sub Standard	20%
181 to 360 days	Doubt Full	50%
Above 360 days	loss	100%

*Source NBE Directive no SBB/69/2018 Article 7*

The provision expenses (allowance for loss loans) calculated on the total outstanding principal loans multiplied by the appropriate percentile of allowance stated here under table A. From this currently existing practice we can understand that the provision allowance for NPL of the CBE priority given loan has down pulling effect on the financial performance of CBE.

## **2.6 Related Previous Empirical Studies**

In this section, the researcher will review the literatures on the effects of the independent variable non-performing loans on financial performance of various commercial banks which were operated in different geographical and /or economic environment. Some of the studies which are related and useful for this study are discussed herewith.

Girma (2011) who made his research study on ‘Credit risk management and its impact on performance of commercial banks in Ethiopia attempted that there is a significant relationship between bank performance (in terms of return on asset) and credit risk management (in terms of loan performance). From the population of all banks operational in Ethiopia, six banks were selected by using purposive sampling technique. The researcher employed quantitative research design. A panel data of 10 years financial data of banks under the study was used to examine the relationship between return on asset (ROA) which is performance indicator and non-performing loan to total loan (NPL/TL), loan provision to total loan (LP/TL), loan provision to non-performing loan (LP/NPL), and loan provision to total asset (LP/TA). The findings of the study reflected that there is a direct but inverse relationship between return on asset (ROA) and the ratio of non-performing loans to total loan (NPL\TL) and loan provision to total loan. The regression analysis showed that nonperforming loan and loan provision of the financial institutions are significantly negatively related to performance (ROA). On the other side, the regression result revealed that loan provision to non-performing loan and loan provision to total asset of the financial institution is significantly and positively related to return on asset.

Kolapoetal, (2012) carried out an empirical investigation on the quantitative effect of credit risk on the performance of commercial banks in Nigeria. A sample of five commercial banking firms were selected purposively from the twenty existing commercial banks on a cross sectional basis for eleven years. The data used included time-series and cross-sectional data which is pooled into a panel data set and estimated using Panel Data regression. The researchers employed Return on Asset (ROA), as a function of the ratio of Non-performing loan to total loan & Advances (NPL/LA), ratio of Total loan & Advances to Total deposit (LA/TD) and the ratio of loan loss provision to classified loans (LLP/CL) as measures of credit risk. The results of the research showed that the effect of credit risk on bank performance measured by the Return on Assets of banks is cross-sectional invariant which has similar effect across banks in Nigeria. The findings of the research revealed that a 100 percent increase in non-performing loan reduces profitability (ROA) by about 6.2 percent and a 100 percent increase in loan loss provision also reduces profitability by about 0.65 percent while a 100 percent increase in total loan and advances increase Profitability by about 9.6%.

Addisu (2014) has done an empirical study to investigate the effect of non- performing assets on financial performance of commercial banks in Ethiopia for the years covering 2005 to 2013 by selecting six commercial banks as representatives out of the total 18 commercial banks operating in Ethiopia. The study also used an econometric methodology for the estimation of variables coefficients under regression model the independent variables selected for the study were Non-performing loans to total loan ratio, Loan loss provision to nonperforming loans, and capital adequacy the variables regressions test result Non-performing loans to total loan (NPLTL) has a significant inverse relationship with return on asset (financial performance of the bank). Loan loss provision to nonperforming loans (LPNPL) has a weak inverse relationship with financial performance of commercial banks (in terms of return on asset). The capital adequacy (CA) has shown positive and statistically significant relationship with financial performance in terms of ROA. And he concluded that the problem of asset quality is a visible problem which affects the sound financial condition of Ethiopian commercial

banks. The regression output revealed that non-performing loans (assets) have a negative effect on commercial banks' financial performance and thus require due attention.

In addition, Hailu (2016) in his study investigated the impact of credit risk on profitability performance of selected public and private commercial banks of Ethiopia. He used secondary data from annual reports of the selected public and private commercial banks of Ethiopia showed that there is a negative relationship between credit risk and performance of commercial banks in Ethiopia.

Esayas (2018) study aimed to identify the relationship between credit risk and financial performance of Ethiopian banks. To achieve this objective the study has employed quantitative research approach. The data were collected purposively from a sample of six banks over the time period from 2007-2016. The collected data were analyzed by employing fixed effect model using econometrics software E-view 8.

In order to conduct the empirical analysis, one dependent variable and four independent variables were selected from prominent previous research works namely non-performing loan to total loan and advance ratio, total loan and advance to total deposit ratio, non-performing loan to loan provision ratio and loan provision to total loan and advance ratio. The results of the fixed effect estimation model showed the existence of the relationship between performance and four independent variables concluded that, bank credit risk measured in terms of Non-performing loan to total loan and advance had significant negative relationship with ROA, which was in line with previous studies. On the other side, the findings indicated that bank credit risk measured in terms of loan to deposit ratio of banks shows that there was positive and statistically significant relationship with ROA.

The finding on banks financial performance measured in terms of non-performing loan to loan provision shows that negative and significant relationship with ROA. The last test, result showed a statistically significance negative relationship between loan provision to total loan and advance and banks performance. All hypotheses of the credit risk variables were significantly related with bank performance. Therefore, all variables are accepted and this particular study concludes that most bank financial performances are affect by credit risk factors.

Poudel (2012) studied on the impact of default rates and cost per loan on banks' performance in Nepal concluded that credit risk management measured by default rate is crucial for bank performance, as it significantly contributes to bank profitability.

Likewise, Roman and Tomuleasa (2013) studied (2003 to 2011) the impact of internal and external factors on the profitability of banks in EU countries revealed that the increase in non-performing loans had a negative impact on banks' profitability. Kargi (2011) study (2004 to 2008) on the relationship between credit risk and profitability of Nigerian commercial banks revealed a negative relationship between credit risk and the profitability of commercial banks in Nigeria. Similarly, Kolapo et al. (2012) study on the impact of credit risk on commercial banks' profitability in Nigeria concluded that the increase in non-performing loans reduces the banks' profitability.

## **2.7 Indicators of Banks Performance**

Golin (2001) pointed out that ROA has been emerged as key ratio for the evaluation of bank profitability and has become the most common measure of bank profitability. Many scholars remind that ROA is the key ratio for the evaluation of bank profitability given that ROA is not distorted by high equity multipliers, while ROE disregards the risks associated with high financial leverage Kumbirai and Webb (2010) discussed in their study on financial Ratio Analysis of Commercial Bank Performance in South Africa, return on assets (ROA) showed the ability of management to acquire deposits at a reasonable cost and invest them in profitable investments. This ratio indicated how much net income is generated per £ of assets.

Moreover, they also indicated that Return on Equity (ROE) is the rate of return to shareholders or the percentage return on each £ of equity invested in the bank. A higher ROA and ROE is an indicator of more profitability of the bank (Athanasoglou et al., 2008). Many regulators also believe return on assets is the best measure of bank efficiency and it emerges as the key ratio for the evaluation of bank profitability (IMF, 2002).

The rate of return on assets, ROA, is the most comprehensive accounting measure of a bank's overall performance. Because of this, a bulk of studies employed ROA as a measure of bank profitability. Athanasoglou et al. (2008), Flamini et al. (2009), Indranarain (2009), Belayneh (2011), Girma (2011), Birhanu (2012), Habtamu (2012) and Tseganesh (2012), (Addissu 2014) Essayas 2018 are Some of them.

## **2.8 Research Gap**

Strong banking system is the backbone for economic growth as well as financial stability and development process of any country in view this fact commercial bank of Ethiopia is the only state owned commercial bank in Ethiopia It contributes about 60% of the country's paid up capital and unlike the other privately owned commercial banks currently operational in Ethiopia, CBE is provider more than 50% of the loans financed by the banking sector. And it is the only bank which gives loan privileges to government selected priority sectors of businesses MFG, AGRI and EXP businesses. Due to this CBE has forwarded hundreds of billions of Birr loans to these three sectors without taking adequate care about the existence of dependable collaterals and or reliable future cash flow generating capabilities of the borrowers businesses and by missing the know your customer principle of lending.

Due to these, as recent NPL portfolio figures of CBE revealed 85% the Addis Ababa and Addis Ababa area CBE's braches non-performing loans total are originated from loans and advances disbursed by CBE to these priorities given AGRI, MFG, and EXP sectors of businesses loans. Because such a type of imposition Ethiopian government has not exerts on all the rest commercial banks operating in Ethiopia except on CBE. Despite this fact Empirical studies were conducted on effect of non-performing loans in financial performance of commercial banks in Ethiopia by Tsegaye (2018) Addisu (2014) and related empirical studies also were conducted on the effect of credit risk on performance commercial banks in Ethiopia by Girma (2011), Tibebu (2011) and Agegnehu (2013).

However, their studies were made by selecting both privately owned and government owned Commercial Banks together as their samples representative to their studies and they failed to make separate study on the impacts of such government selected sector loans NPL impacts on the financial performances of commercial bank of Ethiopia alone. Because no other commercial banks operating in the country provide priority for this three (i.e. MFG, AGRI & EXPO) sector businesses loans and they have not been exposed to material amount default risk these sectors loans. This leaves a gap that needs to be filled.

The purpose of this study is to investigate the impact of NPL of MFG, AGRI & EXP loans on the financial performance of the bank. And to insight the CBE's management to revise its credit policy and procedure on the way to optimize utilization of the bank's asset while delivering loans to priority given sectors of businesses towards the maximization of the CBE's financial performance as well as to play its fundamental role for the development of Ethiopian economy.

## **2.9 Conceptual Framework of the Research**

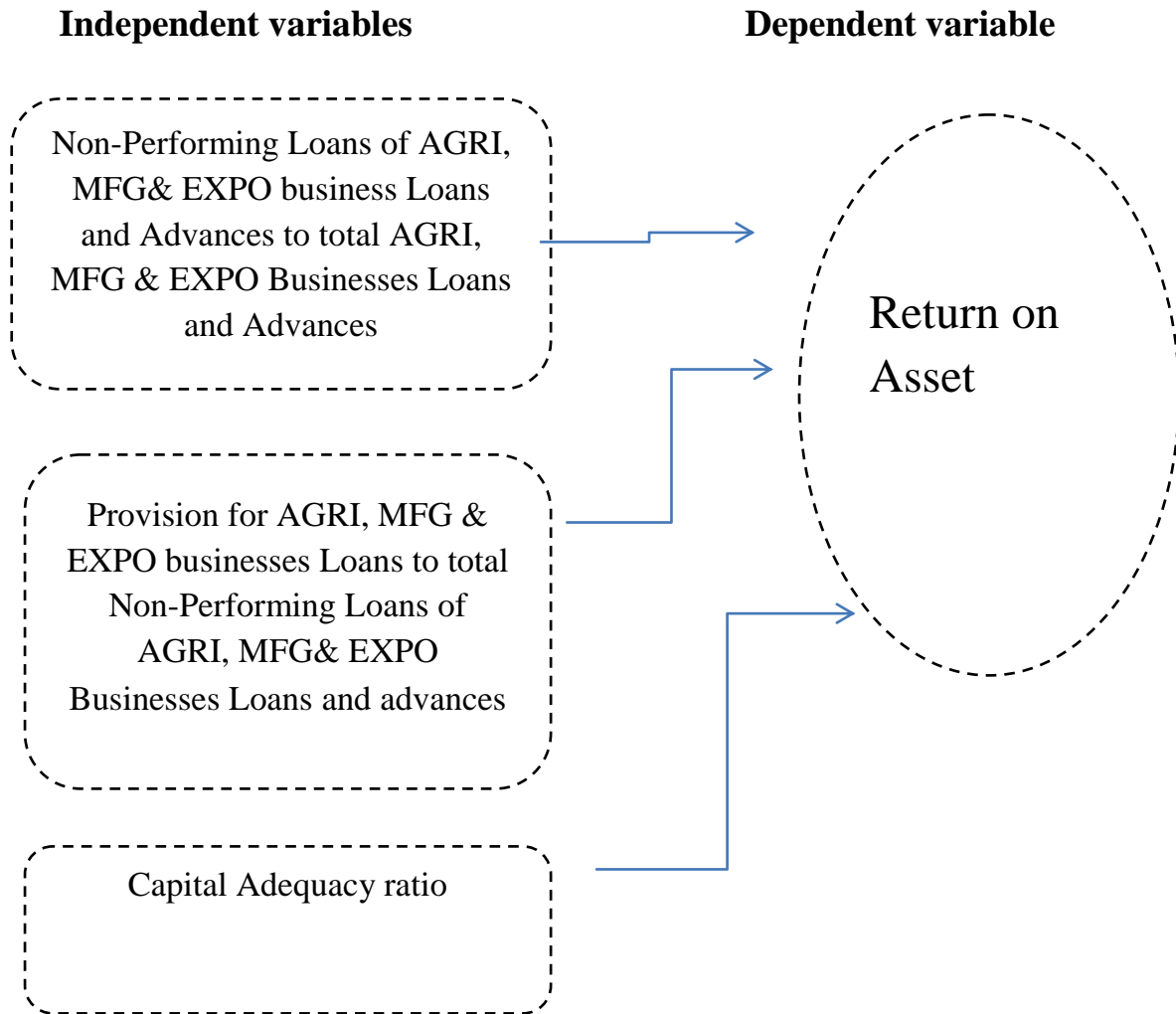
The main objective of this study is to examine the effect of NPL's of AGRI; MFG & EXPO businesses loans on financial performance of CBE. Based on objectives of this study, the following conceptual model is designed.

As it is described in the related literature review parts of this study bank performance is measured by using return on asset to measure the effect of non-performing loans on the financial performance of the bank.

Proxy variables of non-Performing Loan of AME businesses loans and advances to Total Loan and Advance AME, Loan loss Provision of AME to non-Performing Loan of AME businesses loans and advances and Capital Adequacy ratio.

Thus, the following conceptual model is framed to summarize the main focus and scope of this study in terms of variables included.

**Figure 2.1 Conceptual Framework of the Study**



*Source: self-extracted*

## **CHAPTER THREE**

### **RESEARCH DESIGN & MYTHOLOGY**

#### **3.1 Introduction**

This chapter discusses about the research methodology of the study comprise of research approach, design, target population and sampling design ,data analysis ,model specification sections.

#### **3.2 Research Design**

According Durrheim (2004) research design is a strategic framework for action that serves as a bridge between research questions and the execution, or implementation of the research strategy. Thus, in order to answer the research questions casual research design used. The purpose of this study is to investigate the effect non-performing loans of government selected three priority sectors of businesses loans on financial performance of commercial bank of Ethiopia in so doing, casual research design has adopt in collecting, analyzing and interpreting data to address the objective(s) of the study.

#### **3.3 Research Approach**

The aim of this research is to investigate the effect of nonperforming loans of three government selected sector of business's loans on financial performance of commercial bank of Ethiopia. Therefore, in order to achieve the aforementioned objective the researcher employed quantitative research approach.

#### **3.4 Data Type and Source**

In this study the researcher has employed quantitative research approach. Only secondary data are used for the study. The secondary data was collected from the financial statements of Commercial Bank of Ethiopia and from the National Bank of Ethiopia. The study obtained data by considering the study model selected four variables (i.e. financial performance indicator return on asset (ROA), Non-Performing Loan of AME businesses to Total Loan and Advance of AME businesses, Loan Provision of AME businesses loans to total Non-Performing Loan of AME businesses, capital adequacy ratio), for the period covered from 2008 to 2018 G.C

### **3.5 Sampling Procedure**

This research used a sample of ten consecutive years' secondary data from CBE head office and from the National Bank of Ethiopia for period covering the year 2008 to 2018. Due to the nature of the research non probabilistic sampling technique is used for this study.

### **3.6 Description of Measurements of Variables**

To achieve the research objectives developed and to test hypotheses the researcher used the following core variables as dependent and independent variables.

#### **3.6.1 Measurement of Variables**

##### **i. Dependent Variable**

For this research the researcher used *Return on asset (ROA) as the indicator of profitability* in the regression analysis because ROE & ROA have been widely used in earlier researches. In addition to this, many scholars suggest that ROA is the key ratio for the evaluation of bank profitability given that ROA is not distorted by high equity multipliers, while ROE disregards the risks associated with high financial leverage (Athanasoglou et al., 2008). As ROA is the most comprehensive accounting measure of a bank's to measure the banks overall financial performance. On average, higher ROA indicates effective and efficient use of a firm's assets to generate profits. Many regulators also believe return on assets as the best measure of bank efficiency and it emerges as the key ratio for the evaluation of bank profitability (IMF, 2009). ROA is calculated by dividing net profits after tax to total assets at the end of the financial year.

##### **ii. Independent variables**

The researcher used the under mentioned three ratios as independent variables of this study to examine the impact of non-performing loans of AGRI, MFG& EXPO businesses on financial performance of Commercial Bank of Ethiopia.

**A. Non-Performing Loans of AGRI, MFG& EXPO business to total AGRI, MFG & EXPO businesses Loan and Advance ratio (NPLRAME.)**

The ratio of non-performing loan to total loan of AME businesses loans which measures how much of the total AME businesses loans were defaulted relative to the total outstanding loans of AME businesses at the end of the financial period.

**B. Loan loss Provision allowances established during the financial year for NPL of AGRI, MFG & EXPO businesses Loan and Advance to total NPL of Advance of AGRI, MFG& EXPO businesses ratio (PRAME)**

Provision for loan loss account is maintained against charges to provision expense account in the income statement. Loan loss provision is maintained at a level adequate to absorb potential losses in the loans or advances portfolio. Similar to previous empirical studies, the researcher expected a negative relation between loan loss provision and financial performance of CBE.

**C. Capital adequacy ratio**

Capital adequacy refers to the sufficiency of the amount of equity to absorb any shocks that the bank may experience Kosmidou, (2008). The Capital requirement of banks is highly regulated by governments. This is because capital adequacy plays a crucial role in reducing the number of bank failures and losses to depositors when a bank fails as highly leveraged firms are likely to take excessive risk in order to maximize shareholder value at the expense of finance providers Kamau, (2009). Capital adequacy refers to amount of capital a bank or other financial institution has to hold as required by its financial regulator. This is expressed as a capital adequacy ratio of equity that must be held as a percentage of risk-weighted assets.

The ratio of Equity to total Asset is employed as a measure for bank Capital Adequacy. This measures the percentage of the total asset that is financed with equity capital. Capital adequacy therefore describes the sufficiency of the amount of equity that can absorb shocks that banks may experience. It is expected that the higher the Equity to Asset ratio, the lower the need for external funding and *therefore* the higher the

profitability of the commercial Bank with higher capital to asset ratio are considered relatively safer and tend to have a better margin of cushion, remaining profitable even during economically difficult times. Conversely, banks with lower capital adequacy are considered riskier relative to highly capitalized banks. Capital adequacy is therefore considered to have effect on profitability of commercial banks.

$$CA = \frac{\text{Total Equity}}{\text{Average Risk Weighted Asset}}$$

To summarize these measurement variables issue , in this research the researcher share the measurement variables indicated under the title related empirical studies of Tsegaye (2018), Addisu (2014), Kolapo Ayeni & Oke (2012),Girma (2011) that non – performing loans & advances have *negative and significant impact on financial performance the bank* similarly, the researcher of this study also expected negative and significant relations between the (NPLOAMEL/TAMEL)and (LPOAMEL/TLAOAMEL) ratios will Have negative and significant impact on financial performance of CBE and Capital adequacy will Have positive and significant impact on financial performance of CBE.

### **3.7 Model Specification**

The model adopted for this study is Esayas (2018) Adissu(2014) in their study “Credit Risk and non-performing loans impact on Commercial Banks Performance in Ethiopia which measured profitability with Return on Asset (ROA) as a function of the ratio of Non- performing loan to loan & Advances (NPL/LA), Loan loss provision to classified assets and ratio of Total loan and capital adequacy ratio used as indicators of credit risk and financial performances of commercial banks.

The model for this study functionally is:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Where: Y = Return on Asset (ROA)

X1= Non-performing loans of AGR, MFG & EXP Loans and advances to Total AGR, MFG & EXP Loans and advances Loans(*NPLOAMEL*)/(*TAMEL*)

X2= *Loan Provision of AGRI, MFG& EXPO businesses Loan and Advance to total NPL of AGRI, MFG& EXPO businesses Loan and Advance* (*LPOAMEL/TNPLOAMEL*)

X3= Capital Adequacy (CA)

$\alpha$  = intercept

$\beta_1 - \beta_3$  = Are Coefficients

e = error term

Thus, the model is further explained as:

$$ROA = \alpha + \beta_1 \frac{NPLOAMEL}{TAMEL} + \beta_2 \frac{LPOAMEL}{TNPLOAMEL} + \beta_3 (CA) + e$$

### **3.8 Data Collection Tools & Data Sources**

For the this study secondary data only was used and data collection had been made from the annual financial reports of CBE , from the database of CBE head office located at Addis Ababa and from audited financial stamen reports of NBE. The reference period was from the year 2008 to 2018.

### **3.9 Method of Data presentation and analysis**

Statistical analyses are carried out using the statistical methods to analyze the proposed research objectives and to test the hypotheses. The collected data was interpreted with the help of different financial ratio and statistical descriptions including standard deviation, average, minimum and maximum (descriptive statistics) and multiple

regressions. A correlation analysis between dependent and independent variables has been done and ordinary least square/OLS regression approach including all of its assumptions is employed with the help of statistical tools like SPSS for windows software package. The assumptions have been tested to see the applicability of the regression models developed. A pooled panel data analysis of cross-sectional and time series data is employed.

## CHAPTER FOUR

### DATA ANALYSIS, INTERPRETATION AND PRESENTATION

#### 4.1 Introduction

In this chapter of the study, the panel data, which are gathered from the financial statements and other internal records of the Commercial Bank of Ethiopia, are analyzed through SPSS software. The results from the regression and correlation analysis are presented under and discussed in this chapter. The regression model is used to analyze the panel data collected and to test the effects of the independent variables on the Dependent variable ROA (financial performance of CBE.) so that these research hypotheses are fully tested. Multiple regression analysis is employed to test whether one or more independent variables (predicators) influence the dependent variable (outcome variable) and to identify whether their effect are positive or negative.

#### 4.2 Descriptive Statistics for the Study Variables

This section presents the descriptive statistics of dependent and explanatory variables used in this study. The dependent variable used in this study was ROA, while the explanatory variables are Non-performing loan Agriculture Manufacturing and Export to total loan Agriculture Manufacturing and Export loans TO NPLS of Agriculture Manufacturing and Export loans (*NPLRAME*), provision for NPLS of Agriculture Manufacturing and Export loans of (*PRAME*) and CAR. Table 4.1 depicted below shows information about the descriptive statistics of the dependent and independent variables. The table presents some of the selected descriptive statistics of The Commercial bank of Ethiopia including the mean, standard deviations, minimum and maximum values of study variables for the study over the sample period of ten years covering from 2009 to 2018.

**Table 4.1 Descriptive statistics**

**Descriptive Statistics**

	<b>N</b>	<b>Minimu m</b>	<b>Maximu m</b>	<b>Mean</b>	<b>Std. Deviation</b>
ROA	10	.024283	.059081	.04242580	.010271651
NPLRAME	10	.098962	.120987	.11167920	.006258792
PRAME	10	.152988	.359528	.19488040	.060246397
CAR	10	.076463	.099799	.08435640	.007173761
Valid N (list wise)	10				

Source: SPSS output

As indicated in table 4.1 the mean and standard deviation performance of Commercial bank of Ethiopia are 0.042426 & 0.010271651 respectively. This revealed that Commercial Bank of Ethiopian was able to generate an average positive return of 4.24% on its assets during last 10 years. Minimum recorded return on asset was as low as 2.43% while the maximum was about 5.91%. That means that Commercial Bank of Ethiopia earned maximum of 0.059 cents and minimum of 0.02 cents net profit from one Birr of asset invested.

Also, the averaged and standard deviation of non-performing loan of selected three sector of businesses loans ratio stood at 0.111679 & 0.006258792 respectively. This implies that on the average 11.17% of the total Agriculture, Manufacturing and foreign trade sector businesses loans and advances of CBE were non performing of loans during the last ten years (2008 to 2018) and of the total Agriculture, Manufacturing and foreign trade sector businesses loans and advances maximum of 12.09% and minimum 9.89% of CBE loans were non performing of during the last ten years 2008 to 2018.

Moreover average and standard deviation of loan loss provision to non-performing loans of AME & advances ratio was reported as 0.19488 and 0.06024 which revealed that of the total NPL of Agriculture, Manufacturing and foreign trade sector businesses loans

and advances on average 19.49% of non-performing loans and advance had had 100% loan loss provision.

In addition, the other explanatory variable, capital adequacy shows an average of 0.084354 with a standard deviation of .007173 implies that the average capital adequacy ratio of CBE during the last ten years were 8.44% which was good because This indicate existence of adequate financial condition in CBE because CBE's average CAR 8.44% surpassed the minimum ratio of 8% set by NBE on Directives No.SBB/63/2018 during the year 2008 to 2018.

### **4.3 Correlation Analysis between Study Variables**

This study used the most widely used bi-variant correlation statistics, the Pearson product-movement coefficient, commonly called the Pearson correlation to analyze the relationship among these variables.

SPSS Output table depicted below provides a matrix of the correlation coefficients for the four variables of the study. In the introduction part of this study, it was hypostasized that, there is negative correlation between Non-performing loans of Agriculture, Manufacturing & Export businesses loans to total loans of Agriculture, Manufacturing & Export businesses ratio (NPLRAME) & loan loss provision of Agriculture, Manufacturing & Export businesses loans to non-performing loans of Agriculture, Manufacturing & Export businesses loans ratio, and financial performance measured as return on asset (PRAME).

And also hypnosis positive correlation between capital adequacy ratio of (CAR) and financial performance of CBE measured as return on asset.

In agreement with the research hypothesis, the findings of the study revealed negative correlation coefficient between NPLRAME & PRAME as well as a positive correlation between capital adequacy and return on asset of CBE.

Table 4.2 below shows each correlation coefficient together with the significance value of the correlation and time serious data of ten years as a sample are displayed. Obviously,

each variable is perfectly correlated with itself and so  $r = 1$  along the diagonal of the table.

The criterion for significance is taken as .05 by which SPSS marks any correlation coefficient significant at this level with an asterisk. Non-performing loans of Agriculture, Manufacturing & Export businesses loans and advances to total loans of Agriculture, Manufacturing & Export businesses loans and advances and loan provision of Agriculture, Manufacturing & Export businesses loans and advances to non-performing loans of Agriculture, Manufacturing & Export businesses loans and advances are negatively related to financial performance (return on asset) with a Pearson correlation coefficient of  $r = -.801$  and  $-0.690$  both are significant with a significance level of .01 and 0.005 respectively. The output also showed that capital adequacy ratio is positively related to the return on asset with a coefficient of 0.103 with significance level of 0.778.

**Table 4.2 correlations Matrix**

		ROA	NPLRAME	PRAME	CAR
ROA	Pearson Correlation	1			
	Sig. (2-tailed)				
NPLRA	N	10			
	Pearson Correlation	-.761*	1		
ME	Sig. (2-tailed)	.011			
	N	10	10		
PRAME	Pearson Correlation	-.801**	.454	1	
	Sig. (2-tailed)	.005	.187		
CAR	N	10	10	10	
	Pearson Correlation	.103	-.214	.170	1
	Sig. (2-tailed)	.778	.553	.638	
	N	10	10	10	10

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

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

## 4.4 Regression Analysis

### 4.4.1 Overall fit of the Model

According to Brooks (2008) it is desirable to have an answer to the question ‘how well does the model containing the explanatory variables that were proposed actually explain variations in the dependent variable?’ Goodness of fit statistics is used to test how well the sample regression function fits the data. The most common goodness of fit statistics is known as  $R^2$  which is defined as the square of the correlation coefficient between the values of the dependent variable and the corresponding fitted values from the model.  $R^2$  lies between 0 and 1. A modification of  $R^2$ , adjusted  $R^2$  is also used which takes into account the loss of degree of freedom associated with adding extra variables. It attempts to correct  $R^2$  to more closely reflect the goodness of fit of the model in the population.

Brook (2008) explained that a value of  $R^2$  close to 1 indicates that the model explains nearly all of the variability of the dependent variable about its mean value, while a value of  $R^2$  close to zero indicates that the model fits the data poorly. Moreover, the other way to evaluate an econometric model is to determine whether it is consistent with theory (Brooks, 2008).

The sample data SPSS output below demonstrates the model summary which constitutes  $R$ ,  $R^2$  & adjusted  $R^2$ . It illustrates the strength of the relationship between financial performance measure (ROA) and explanatory variables (non-performing loans, loan loss provision and capital adequacy ratios). The value of  $R^2$  is 0.850, which indicated that the explanatory variables in this study can account for 85% of the variation in financial performance in terms of ROA.

However, the remaining 15% of the variation in financial performance in terms of ROA are caused by other factors that are not included in this model. Many researchers used different additional variables as a determinant of financial performance measured in terms of ROA like Operational efficiency, liquidity, income diversification, bank size, economic growth, inflation, loans and advances, deposit liability, interest rate, market concentration are some of the factors included in research studies on ‘Determinant of

Financial performance (profitability) in commercial banks (Birhanu, 2017; Belayneh, 2011; Amdemikael, 2012; Tseganesh, 2016). However, in this study the main focus is to examine the relationship and impact of non-performing loans Agriculture, Manufacturing & Export businesses loans and advances of on financial performance of Commercial Bank of Ethiopia hence thus used only variables more related with these selected three sector of businesses non-performing loans.

**Table 4.3 Regression Model Summary**

<b>Model</b>	<b>R</b>	<b>R square</b>	<b>Adjusted R square</b>	<b>Std. Error of the Estimate</b>
<b>1</b>	.922 <sup>a</sup>	.850	.775	.004872821

a. Predictors: (Constant), CAR, NPLRAME, PRAME

b. Dependent Variable: ROA

The Analysis of variance (ANOVA) also tells us whether the model, overall, results in a significant good degree of prediction of the outcome variable. This study SPSS output table 4.4 under regarding analysis of variance (ANOVA) indicated the F-statistics and the associated significance value. The F-statistics of 11.33 with significance level at  $p=.007$  indicates that the model is well fitted at 5 percent significance level. The statistical value of F (11.33) exceeds the critical value of F-distribution at the 5% significance level which is (3.32). Hence, the regression as a whole is found significant which reveals that *NPLRAME*, *PRAME* and *CAR* reliably predict ROA.

On the other hand, the significance level of  $p = .007$  tells us that there is less than .5% chance that an F-statistics.

**Table 4.4 Analysis of Variance (ANOVA)**

**ANOVA<sup>a</sup>**

<b>Model</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
1 Regression	.001	3	.000	11.330	.007 <sup>b</sup>
Residual	.000	6	.000		
Total	.001	9			

a. Dependent Variable: ROA

b. Predictors: (Constant), CAR, PRAME, NPLRAME

Source: SPSS Regression output

#### **4.4.2 Tests for the Classical Linear Regression Model (CLRM) assumptions**

To maintain the data validity and robustness of the regressed result of the research, the basic classical linear regression model (CLRM) assumptions must be tested for identifying any misspecification and correcting them so as to augment the research quality (Brooks,2008).

The characteristics of the model and proposed variables in this research study have been evaluated for fulfillments of the Classical Linear Regression Model assumptions. In this part of the study, the diagnostic test of each assumption is verified.

##### **4.4.2.1 Multicollinearity Test**

A correlation matrix is used to ensure the correlation between explanatory variables. According to Brook (2008), if there is no relationship between the explanatory variables, they would be said to be orthogonal to one another. If an independent variable is an exact linear combination of the other independent variables, then we can infer that the model suffers from perfect collinearity, and it cannot be estimated by OLS. Researchers also try to indicate how to know existence or nonexistence and the degree (magnitude) of existence of multicollinearity. However, the exact magnitude of correlation that causes

multicollinearity is not clearly determined. Cooper & Schindler (2009) recommended that a correlation coefficient above 0.8 between explanatory variables should be corrected for because it is a sign for multicollinearity problem. Malhotra (2007) also argued that multicollinearity problem exists when the correlation coefficient among variables is greater than 0.75. Moreover, Hair et al. (2006) believed that correlation coefficient below 0.9 may not cause serious multicollinearity problem.

In this study the correlation matrix for the independent variables in the table 4.2 above showed that highest correlation of 0 which is between *LPLRAME* & *PRAME*. Since there is no correlation above 0.75, 0.8 or 0.9 as stated by Malhotra (2007), Cooper & Schindler (2009) and Hair et al (2006) respectively, we can conclude in this study that there is no problem of multicollinearity.

According to Gujarati (2004), analyzing the explanatory variables correlation coefficients (CC); condition index (CI) and variance inflation factor (VIF) is another method for testing data for multicollinearity. Eigen values proved an indication of how many districts dimensions are there among the independent variables. When several Eigen values are close to zero, the variables are highly correlated and small changes in the data values may lead to large changes in the estimates of the coefficients. Condition index are the square roots of the ratios of the largest Eigen value to each successive eigen value. A condition index greater than 30 suggests a serious problem with collinearity. Even if Eigen values are used for checking the existence of collinearity, the best way is conditional index. So in this research study, since the conditional index values scored are 3.149, 5.323, 10.111 and 16.389 the researcher can conclude that there is no serious multicollinearity among the independent variables.

**Table 4.5 Collinearity Diagnostics**

**Collinearity Diagnostics<sup>a</sup>**

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	NPLRA ME	PRAME	CAR
1	1	3.938	1.000	.00	.00	.00	.00
	2	.056	8.394	.00	.00	.77	.01
	3	.006	26.192	.01	.12	.01	.59
	4	.001	70.871	.99	.88	.22	.40

a. Dependent Variable: ROA

Source: SPSS Regression output

SPSS also performs ‘collinearity diagnostics’ on the variables as part of the multiple regression procedure. This can identify problems with multicollinearity that may not be evident in the correlation matrix. In the ‘collinearity diagnostics’ two values are given: Tolerance and VIF. Tolerance is an indicator of how much of the variability of the specified independent variables is not explained by the other independent variables in the model and is calculated using the formula  $1-R^2$  for each variable. If this value is very small (less than .10), it indicates that the multiple correlation with other variables is high, suggesting the existence of multicollinearity. The other value given is the VIF (Variance inflation factor), which is just the inverse of the Tolerance value (1 divided by Tolerance). VIF values above 10 would be a concern here, indicating multicollinearity. In this study the tolerance value for each independent variable is well above .10 which confirms that multicollinearity is not maintained. This is also supported by the VIF value, which is well below the cut-off value of 10.

**Table 4.6 Collinearity Statistics**

MODEL		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	<i>NPLRAME</i>	<b>.706</b>	<b>1.416</b>
	PRAME	<b>.719</b>	<b>1.391</b>
	<b>CAR</b>	<b>.864</b>	<b>1.157</b>

Source: SPSS Regression output

#### **4.4.2.2 Outliers**

A Multiple regression model is very sensitive to outliers (very high or very low scores). Checking for extreme scores should be part of the initial data screening process for all the variables. Outliers can either be deleted from the data set or, alternatively, given a score for that variable that is high, but not too different from the remaining cluster of scores.

According to SSP Survival Manual by Pallant (2005), additional procedures for detecting outliers are also included in the multiple regression programs. Outliers on the dependent variable can be identified from the standardized residual plot that can be resulted from SSP output. Pallant (2005) also defines outliers as those with standardized residual values above about 3.3 or less than -3.3.

**Table 4.7 Case wise Diagnostics**

**Casewise Diagnostics<sup>a</sup>**

<b>Case Number</b>	<b>Std. Residual</b>	<b>ROA</b>	<b>Predicted Value</b>	<b>Residual</b>
1	-.082	.046001	.04640021	-.000399215
2	-.544	.038917	.04156866	-.002651660
3	-.173	.044158	.04500101	-.000843006
4	.060	.059081	.05878752	.000293483
5	1.637	.048021	.04004179	.007979207
6	.023	.044019	.04390782	.000111184
7	.542	.051071	.04842755	.002643449
8	-.476	.040518	.04283556	-.002317559
9	-1.487	.028189	.03543654	-.007247543
10	.499	.024283	.02185134	.002431660

a. Dependent Variable: ROA

Source: SPSS Regression output

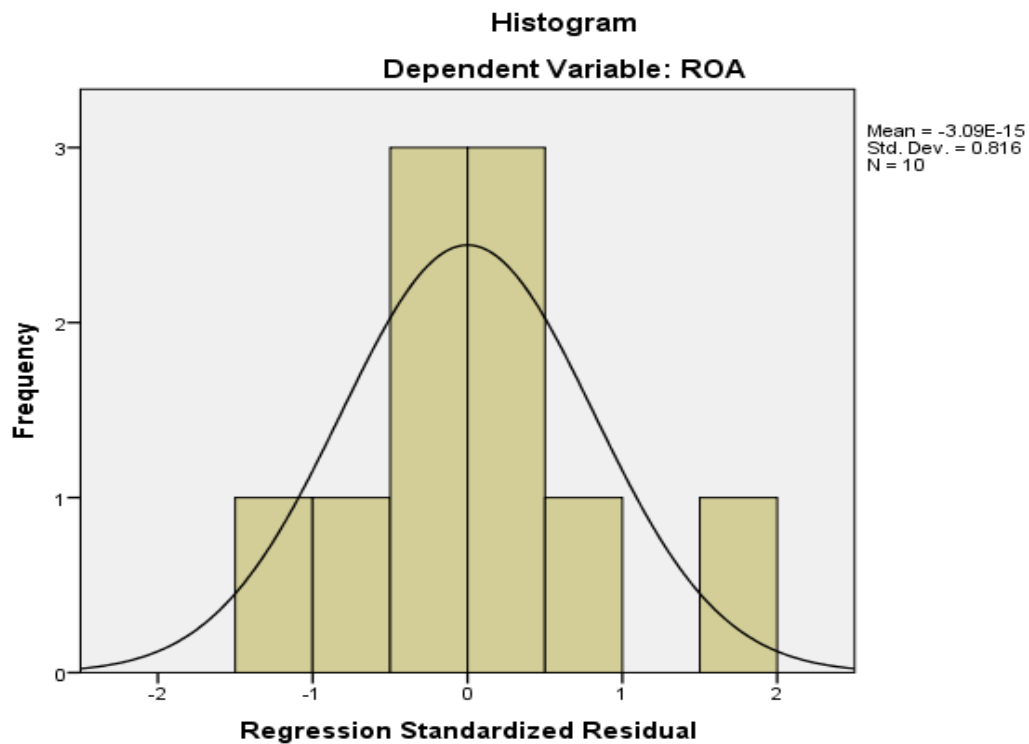
In the table above, the case wise diagnostics shows that the standardized residual values of the dependent variable no case is found less than -3.3 or above 3.3.

#### **4.4.2.3 Normality Test**

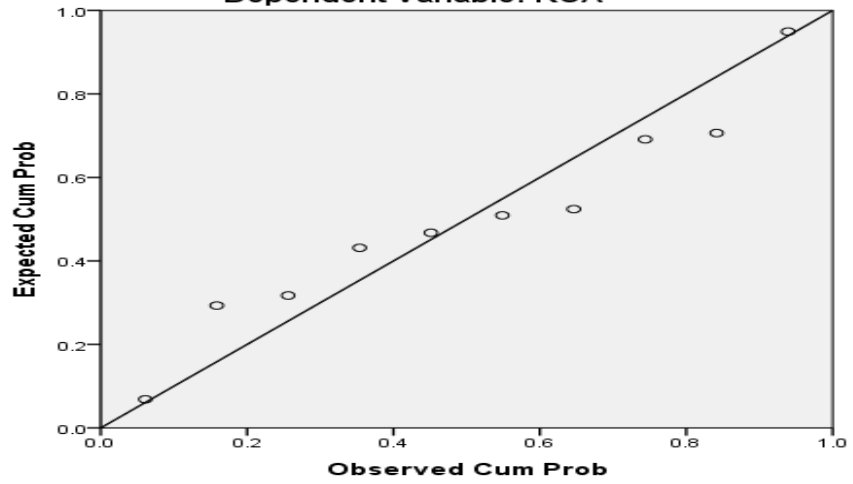
Another important diagnostic test conducted in this study is the normality assumption (i.e. the normally distributed errors). A normal distribution is not skewed and is defined to have a coefficient of kurtosis 3. Skewness measures the extent to which a distribution is not symmetric about its mean value and kurtosis measures how far the tails of the distribution are. If the residuals are normally distributed, the histogram should be bell-

shaped. The residuals scatter plots allow us to check whether the residuals should be normally distributed about the predicted dependent variable scores. The residual are normally distributed with a mean of zero and standard deviation of one. As we can understand from the histogram and p-p plot depicted below, the residuals seem normally distributed and the residuals are distributed with a mean of 0 and standard.

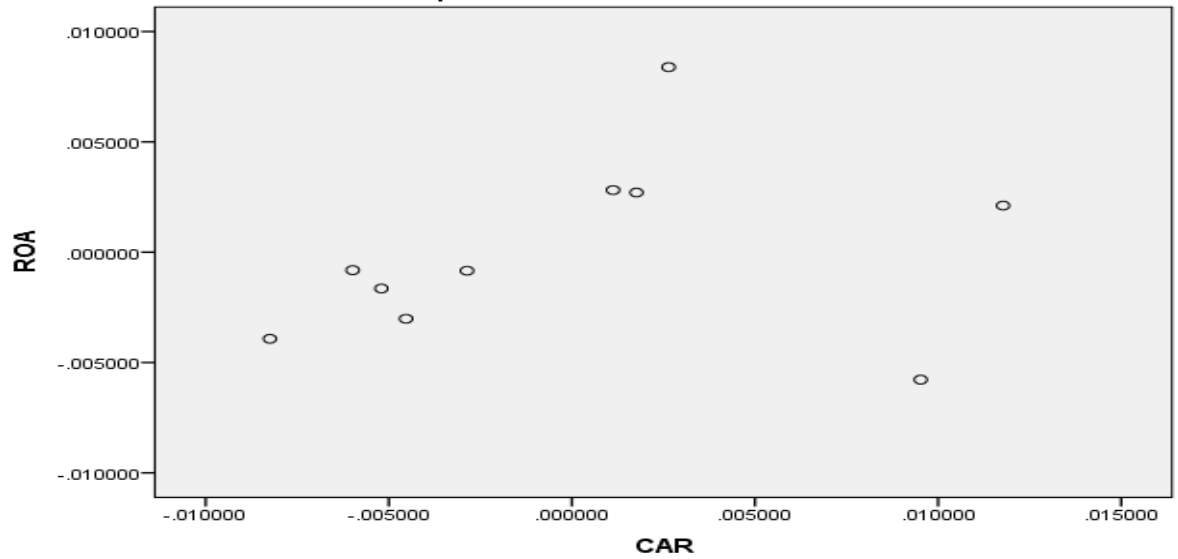
**Figure 4.1 Normality Test Diagrams**



**Normal P-P Plot of Regression Standardized Residual**  
Dependent Variable: ROA



**Partial Regression Plot**  
Dependent Variable: ROA



#### 4.5 Regression Analysis between Dependent and Independent Variables

This section presents the empirical results of the regression analysis. Below table 4.8 showed the results of the regressions for the financial performance (ROA) equation discussed in the methodology part where ROA is taken as dependent variable. The regression output revealed that Non-performing loans of Agriculture, Manufacturing & Export businesses loans and advances to total loans of Agriculture, Manufacturing & Export businesses Loans and advances ratio(NPLRAME) and loan loss provision of Agriculture, Manufacturing & Export businesses loans and advances to non-performing loans of Agriculture, Manufacturing & Export businesses loans and advances ratio(PRAME) affect financial performance negatively.

The coefficient of NPLRAME and PRAME ratio is -0.757 & -0.140 which means a one unit increase in NPLRAME & PRAME decreases ROA by 0.757 & 0.14 units respectively while capital adequacy is held constant. Capital adequacy (CAR) in line with the hypothesis has a positive  $\beta$  coefficient of 0.154 this indicates that a one unit increase in CAR will increase ROA by 0.154 unit, holding NPLAME and PRAME constant.

In line with the hypothesis made the statistical significances of NPRAME & PRAME 0.05 & 0.017 implies that NPRAME & PRAME predictor effect on ROA of CBE with 95% of probability of confidence has been found significant which are in line with the study hypothesis. But contrary to the research hypothesis the statistical significance of CAR has confident of significance 0.549 which is low significance greater than the minimum significance level criteria (.05) this implies that CAR predicts effects on ROA of CBE is 45.1% probability which is less than the minimum 95% probability.

**Table 4.8 Coefficients of Regression Output**

Model	Un-standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.134	.043		3.139	.020
1 NPLRAM	-.757	.309	-.461	-2.450	.050
E PRAME	-.140	.032	-.610	-3.268	.017
CAR	.154	.244	.108	.634	.549

a. Dependent Variable: ROA

Source: SPSS Regression output

Furthermore, R-squared value measures how well the regression model explains the actual variations in the dependent variable (Brooks, 2008). R-squared statistics and the adjusted- R squared statistics of the model in Table 3 above was 85% and 77.5% respectively. The adjusted R-squared value 77.5% indicates that the dependent variable of return on asset (ROA) of Ethiopian commercial bank of Ethiopia is well explained by the independent variables that are listed in the model. Thus, these variables collectively are good explanatory variables to identify the effect of NPL of government selected three priority sectors loans on the financial performance of CBE.

Based on the table of F-distribution, we can also see that the critical value of F-distribution at the 5% significance level is 3.32. In the SPSS output (table 4) the statistical value of F is 11.33 which exceeds the critical value of F (3.32). Hence, the regression as a whole is found significant which reveals that *NPLRAME* & *PRAME* and *CAR* reliably predict ROA. Furthermore, the P-value (significance) is .007 which also indicates that ROA is predicted by about 95.00% probability by *NPLRAME* and *PRAME* and *CAR* together and shows a statistically significant relationship among them.

Therefore, the F-value associated with the P-Value proves that there is a significant relationship between the financial performances measured as ROA and explanatory variables measured as NPLRAME *and* PRAMEL and CAR.

## **4.6 Results and Discussions**

### **4.6.1 Relationship between Explanatory variables and Financial Performance of Commercial Bank of Ethiopia (ROA)**

In line with the hypothesis's the findings of the empirical study revealed negative correlation coefficient between non-performing loans ratio & loan loss provision ratio and financial performance of CBE measured as return on asset. As we can see from SPSS correlation analysis output in Table 4.2 NPLRAME and PRAME ratios are negatively related to financial performance (ROA) of CBE with a Pearson correlation coefficient of  $r = -0.761$  and  $-0.801$  and with a significance level of  $.011$  and  $0.005$  respectively. The correlation coefficient of NPLAME and PRAME ( $r=-0.761$  at  $p=0.007$  &  $-0.801$   $P=0.005$ ) reveals that there exists a significant negative relationship between non-performing loans ratio & loan loss provision ratios of government selected three priority sector loans and financial performance (ROA) of commercial bank of Ethiopia as stated in the hypothesis. CAR had a value of  $r=0.103$  at  $p=0.785$  indicates positive relationship in line with the hypothesis though it is not found significant in line with the hypothesis.

#### **Impact analysis**

The main objective of the research work undertaken was to examine the impact of Non-Performing loans of Agricultural, Manufacturing & Export businesses loans and advances on financial performance of Commercial Bank of Ethiopia. It is observed from the detailed analysis the explanatory variables have different degree of association and impact on financial performance of commercial bank of Ethiopia measured as ROA are presented here under.

### **Non-Performing Loan to Total Loan and Advance Ratio**

The ratio of Non-Performing Loans of AGRI, MFG& EXPO business loans and advances to Total AGRI, MFG& EXPO businesses Loans and advance ratio has negative and significant impact on financial performance of CBE which measures how much CBE suffered due to NPL's of these three sectors loans NPL relative to its gross outstanding loans & advances of these three government selected priority given sectors of businesses loans.

According to the regression result of Non-Performing Loans of AGRI, MFG& EXPO business loans and advances to Total AGRI, MFG& EXPO businesses Loans and advance ratio has a negative relationship with CBE's financial performance by a coefficient estimate of -0.757. This means that holding other independent variables constant and when one percent increases in Non-Performing Loans of AGRI, MFG& EXPO business loans and advances to Total AGRI, MFG& EXPO businesses Loans and advance ratio, consequently it decreases return on asset of Commercial Bank of Ethiopia by 75.7%, and the p value of NPLRAME is 0.05 shows that it is statistically in significant at 5% level of significance.

Accordingly, the result supported the working hypothesis H1 that Non-Performing Loans of AGRI, MFG& EXPO business loans and advances to Total AGRI, MFG & EXPO businesses Loans and advance ratio has negative and significant impact on financial performance of CBE. This result shows that, high NPL increase the level of default rate and reduces the performance of commercial bank of Ethiopia. This finding is consistent with the literatures Girma (2011) and Agegnehu (2013) both concluded that there is a negative relationship between non-performing loan to total loan and advance and performance of commercial banks in Ethiopia

### **Loan Provision to Total Loan and Advance Ratio**

It would be expected that as more customers fail to pay for credit facilities they have taken from a bank, the profitability of the bank should be harmed due to suspension of interest accrual and required additional provision for the expected default loss. According to NBE directive number SBB/69/2018, all banks are required to maintain a provision for loan losses accounts which shall be created by charges to provision expense in the income statement and shall be maintained at a level adequate to absorb potential loss in the loans or advanced portfolio.

The results of the study revealed that Loan loss Provision of AGRI, MFG& EXPO businesses Loans and advances to total NPL of AGRI, MFG& EXPO businesses Loans and advance ratio has a negative impact on financial performance of CBE by a coefficient of -0.140 with p value of 0.017 the result support that the working hypothesis H2. Loan Provision of AGRI, MFG& EXPO businesses Loans and advances to total NPL of AGRI, MFG& EXPO businesses Loans and advance ratio has negative and significant impact on financial performance of CBE.

### **Capital Adequacy:**

In line with the research hypothesis, the coefficient of the regression output revealed that capital adequacy (CA) has a positive coefficient of 0.154 and significance value of 0.549. A positive coefficient of capital adequacy implied that an increase in capital leads to increase in financial performance (ROA). However the p value 0.451 indicates that CAR effect on the financial performance of CBE is not significant which is contrary with the working hypothesis H3 in this regards.

Hence Finding of this study is found not consistent as to the significance of CAR with previous studies with (Ara and et al., 2009), (Belayneh,2011, (Habtamu, 2012), (Birhanu, 2012).The researchers explained that a bank with a sound capital position is able to pursue business opportunities more effectively and has more time and flexibility to deal with problems arising from unexpected losses, thus achieving increased financial performance (profitability) .

Though finding of this study revealed that existence of sound financial condition in commercial bank of Ethiopia (higher capital level) cannot bring significant profit for the CBE. This due to the fact that CBE capital during the resent last five years has showed progress though the loan disbursement made in this period was not proportionally increased due to this. Though CBE, according to NBE directive was able to maintain the minimum 8% CAR set by NBE.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATION

The preceding chapter presented the results and discussion, while this chapter deals with summary, conclusion and recommendations based on the findings of the study. Accordingly this, chapter is organized into three subsections.

#### 5.1 Summary of Findings

The research main objective was to examine the effect of non-performing loans of three government selected priority sector of businesses loans on financial performance of commercial bank of Ethiopia. The study used Ten (10) years period of time series data covering 2008 to 2018 secondary data are collected from NBE and CBE. The study also used an appropriate econometric methodology for the estimation of variables coefficients under regression model.

The overall result obtained from the regression model indicates that non-performing loans of three government selected priority given Agricultural, Manufacturing & Export sector of businesses loans has an effect on financial performance of commercial bank of Ethiopia which led us to accept our hypothesis and to achieve the objectives of the study.

It carried out by constructing a balanced panel regression model using OLS and as per the Hausman test, fixed effect model was adopted for secondary data obtained from audited annual report.

The dependent variable used to measure CBE's financial performance was return on asset. And independent variables were Non-Performing Loans of Agricultural, Manufacturing & Export business loans and Advance to Total Agricultural, Manufacturing & Export businesses Loan and Advance ratio; Loan Provision of; Agricultural, Manufacturing & Export businesses Loans and Advance to total non-performing loans of Agricultural, Manufacturing & Export businesses Loans and Advance ratio and Capital Adequacy ratios in order to attain the objective of the study.

From the regression result, Non-Performing Loans of Agricultural, Manufacturing & Export business loans and Advance to Total Agricultural, Manufacturing & Export businesses Loan and Advance ratio; Loan Provision of Agricultural, Manufacturing & Export businesses Loans and Advance to total non-performing loans of Agricultural, Manufacturing & Export businesses Loans and Advance ratio had negative and significant effect on financial performance of commercial bank of Ethiopia and Capital adequacy ratio has positive but insignificant effect on financial performance of Commercial Bank of Ethiopia.

In doing so, previous studies on effect of non-performing loans on financial performance of commercial banks and effect of credit risk on financial performance of commercial banks have been reviewed and it is summarized that the performance of banks were usually affected by non-performing and loan loss provision and capital adequacy Return on equity to achieve the intended objectives the study has employed quantitative research approach.

The data were collected purposively from National bank of Ethiopia and Commercial Bank of Ethiopia over the time period from 2008-2018. The collected data were analyzed by employing That is why after considering above mentioned facts the researcher motivated to do this research on CBE. With the aim to investigate the impact of non-performing loans of these priorities given three sectors loans and advances on the financial performance of the bank. Because CBE's share of loan to these sectors of businesses has been found more than 75 % of countries total loans the total amount these three amount of hundreds of billions of loans and does not exist in the loans portfolio of the rest all private commercial banks operating in the country. And by now CBE is the only commercial bank in Ethiopia exposed to such type of impositions exerted by the government. And also the amount of NPL originated from CBE's other sector loans (excluding these three priority given loans NPL's) has been found small.

In order to conduct the empirical analysis, one dependent variable (Return on Asset) and three independent variables were selected from prominent previous research works namely Non-Performing Loans of Agricultural, Manufacturing & Export business loans

and Advance to Total Agricultural, Manufacturing & Export businesses Loan and Advance ratio; Loan Provision of Agricultural, Manufacturing & Export businesses Loans and Advance to total non-performing loans of Agricultural, Manufacturing & Export businesses Loans and Advance ratio and Capital Adequacy Ratio.

## **5.2 Conclusions**

This study aim was to examine the effect of non-performing loans of three government selected priority sector of businesses loans and advances on financial performance of commercial bank of Ethiopia.

The findings of the study on the effect non-performing loans of three government selected priority sector of businesses loans on financial performance of commercial bank of Ethiopia suggest the following conclusions.

According to the regression results, the findings indicated that the effect of, Non-Performing Loans of Agricultural, Manufacturing & Export business loans and Advance to Total Agricultural, Manufacturing & Export businesses Loan and Advance ratio; had negative and statistically significant effect on ROA. A negative sign suggests that loan non-performing loans of Agricultural, Manufacturing & Export businesses Loan and Advance affect financial performance negatively.

Loan Provision of Agricultural, Manufacturing & Export businesses Loans and Advance to total non-performing loans of Agricultural, Manufacturing & Export businesses Loans and Advance ratio had negative and statistically significant effect on ROA this implies that commercial banks income before excluding provision also affects performance of CBE.

Capital adequacy ratio had Positive but statistically insignificant effect on ROA contrary with previous studies.

Generally, the study has developed three hypotheses. Accordingly, the two hypotheses variables were significantly related with bank performance. Therefore, two of variables are accepted and this particular study concludes that commercial bank of Ethiopia

financial performance is affected by the non-performing loans of government selected priority given Agricultural, Manufacturing & Export sectors of businesses loans.

### **5.3 Recommendation**

Based on major results obtained from this empirical study, the following recommendations are made.

- ✓ As non-performing loans of Government Selected Priority Sectors of Businesses loans have negative effect on financial performance of commercial bank of Ethiopia, it is recommended that Commercial Bank of Ethiopia should enhance its capacity in credit analysis and loan administration especially on these three government selected three priorities given sectors of businesses loans
- ✓ Commercial Bank of Ethiopia higher management team should pay appropriate attention on financial performance impact of NPL's of priority sector of businesses loans and should be able to prepare prudential credit policies and procedure to protect adverse impacts of such type of non-performing loans.
- ✓ The controlling body of the banking industry (NBE) should issue practical procedure/s that protect CBE from such types of government interference emanated non-performing loans of these three priority given sectors of businesses loans adverse impact on the financial performance of CBE after considering the best recent international practices, which supports CBE to play its crucial part for economic development of Ethiopia without significantly affecting its financial performance.

### **5.4 Suggestions for Further Studies**

- ✓ The study suggests that a further study can be done on the impact/s of government interference in the normal lending practices of the commercial banks on financial performances of commercial banks operating in Ethiopia.
- ✓ Further studies can also be undertaken on impact of non-performing Loans of AME loans assets on other activities of commercial banks other than financial performance like on the lending, follow up and workout loan practices of commercial bank of Ethiopia.

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