



**ST. MARY'S UNIVERSITY  
SCHOOL OF GRADUATE STUDIES**

**THE RELATIONSHIP BETWEEN NON -PERFORMING LOAN AND  
FINANCIAL PERFORMANCE THE CASE OF COMMERCIAL BANK OF  
ETHIOPIA-HEAD OFFICE**

**BY  
BESHEWAMYELESH BELAYNEH**

**SGS/0037/2012A**

**JUNE, 2022**

**ADDIS ABABA, ETHIOPIA**

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**A THESIS SUBMITTED TO ST. MARY'S UNIVERSITY SCHOOL OF  
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## DECLARATION

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

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**June, 2022**

## **ENDORSEMENT**

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

Tiruneh Legesse (Assistant Professor)

**Advisor**

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**Signature**

**June, 2022**

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*Beshewamyesh Belayneh*

*June, 2022*

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## ACRONYMS

ATM:	Automatic Teller Machine
CBB:	Construction and Business Bank
CBE:	Commercial Bank of Ethiopia
CRM:	Customer Relationship Manager
GRADE 1:	Exceptionally Low Risk Borrowers
GRADE 2:	Very Low Risk Borrowers
GRADE 3:	Low Risk Borrowers
GRADE 4:	Moderate Risk Borrowers
MIS:	Management Information System
NBE:	National Bank of Ethiopia
NIM:	Net Interest Margin
NPA:	Non-Performing Asset
NPL:	Non-Performing Loan
POS:	Point of Sale Machine
ROA:	Return on Asset
ROE:	Return on Equity
SPSS:	Statistical Package for Social Sciences
T24:	TEMENOS 24 hours –Application
TEMENOS:	The Banking Software Company

## **ABSTRACT**

*The objective of this study was to examine the relationship between non-Performing loan and financial performance of Commercial Bank of Ethiopia. The study variables were Size, Cost, Collateral and Age of Non-performing loan as Independent variable and profitability indicators Return on Asset (ROA), Return on Equity (ROE) and Net Interest Margin (NIM) as dependent variable. The study used quantitative research approach and secondary financial data for the period covering 2012-2019 since implementation of core banking system to examine the financial impact of non-performing loan on bank's performance.*

*Descriptive and explanatory research design was employed and data were analysed using descriptive statistics and multiple linear regression models by using SPSS version 23 software. Before analysing the study data, the reliability of the main items of the data was tested by using Cronbach's alpha and 0.800 value obtained which is greater than the acceptable value 0.7. Regression assumption test were also undertaken to evaluate the association of the study variables. The finding of the analysis result has shown that there was significant relationship between explanatory and outcome variables during the study period.*

*Based on the analysis result the researcher further recommended Commercial Bank of Ethiopia to enhance current lending practice through hiring consultant who have special expertise on major priority areas like Agriculture, Manufacturing and able to provide expert advice before the bank is going to finance. And to protect the bank from financial risk the researcher also recommended credit management to continue strengthening its monitoring mechanisms through regular follow up strategies and commitment, CRM to provide advices, counselling to borrowers to protect customer from business failure and the management also to provide training to all credit performers to improve their business knowledge so that the bank will reduce the size of non-performing loan and in effect will improve its financial performance.*

**Key words:** Non-Performing Loan, Financial performance

# CHAPTER ONE

## INTRODUCTION

### 1.1. Background of the Study

The financial institutions generally serve financial intermediaries. It is their function to mobilize deposit and moved funds from surplus economy units to deficit economic units within the economy. Banks are financial institution whose business involves the management of asset and liabilities. Banks basically operates with three basic objectives which are profitability, growth of assets and customer base. Credit is the major asset and nucleus of banks which generates income. By its nature faces challenges within internal and external environment and exposed to risk. Asset quality is an aspect of bank management and determines the soundness of commercial banks profitability (Timothy Amos John, 2018)

As Oganda,J.a.,Mogwambo,V,A.,&Otieno,S,2019 revealed banks also ensure productive investment of capital and stimulate economic growth and development of new industries, thereby increasing employment opportunities and improving standards of living of the population. Thus banks should hold more liquid asset indemnify themselves from potential liquidity problems.

**Non-performing Assets** - an asset which ceases to generate income for the bank. A non-performing asset is a loan or an advance where interest and/ or instalment of principal remain overdue for a period of more than 90 days in respect of a term loan. Non-performing asset can affect adversely the profit of the bank, asset valuation, bank rating, capital adequacy ratio and cost of funds adversely. (The Management Accountant, 2015 the journal for CMA)

A non-performing loan is a loan in which the borrower is in default and has not paid the agreed principal and interest repayments for a specified period. Non-performing loans occur when borrowers run out of money to make repayments or get into situations that make it difficult for them to continue making repayments towards the loan. Usually, banks classify loans as non-performing loans when the repayments of principal and interest are due for more than 90 days or depending on the terms of the loan agreement. As soon as a loan is classified under NPL, it means that the likelihood of receiving repayments are significantly lower. (Corporate Finance Institute CFI)

According to NBE Directive No.SBB/69/2018, non-performing loan means 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 loan or advances is in question. Loans or advances with pre-established repayment program are non-performing loans when principal and/or interest is due and uncollected for 90 (ninety) consecutive days or more beyond the scheduled payment date or maturity.

### **Bank Performance**

Oganda,J.a., Mogwambo,V,A.,&Otieno,S,2019 Financial measures are considered the most used parameter of business performance measurement especially in the current economic climate. These performance indicators are important to the shareholders and depositors who are major beneficiaries of a bank. Profitability is the most important measure of success of a business and it measure the extent to which a business generates a profit from the factor of production, labour management and capital. Bank's profitability is the bank's ability to create revenue in excess of cost, in relation to its capital base .A sound and profitable banking sector contributes significantly to financial system stability.

Financial performance is the process of measuring the results of a firm's policies and operations in monetary terms. It is used to measure firm's overall financial health over a given period of time and can also be used to compare similar firms across the same industry or to compare industries or sectors in aggregation. ( Eshna Verma,2020)

Budiarto, 2020 financial performance is measured using a mixture of financial analysis such as, ROA, ROE and or by comparisons of performance counters according to budget or sometimes a combination of all available proxies. The assessment of the performance of commercial banks is measured using total assets, net income and total capital.

Evaluating the financial performance of a business allows decision makers to judge the results of business strategies and activities in objective monetary tems. Normally the ratios are used to determine the financial performance of an organization (Sylvain R. Tuite 2015)

## **Effects of Non-Performing Loan**

The effect of non-performing loan is reduction in profit, barrier to further lending, and negative economic growth in the society, erode the confidence of the banking public and will have negative implication on the whole banking industry. (Timothy Amos, 2018). Lending practices need to be studied in detail to ensure good practices are adopted across the industry (Olobo, M. , Karyeija, G. , Sande, P. and Khoch, S. 2021)

### **1.2 Background of the Organization**

Commercial Bank of Ethiopia is the leading bank in the country which was established in 1942. Since then, CBE has gone through different reforms and mergers coming out as the most reputable and biggest commercial bank in the country. Currently, the bank has a vision to become a world class commercial Bank by the year 2025. To meet this vision, it has set three strategic focus areas namely business growth, business excellence and digitalization. In line with these strategies, the bank is expanding its branch network, deploying different e-payment channels like ATM, POS, Mobile money (CBE-Birr) and using different IT infrastructures to efficiently utilize its business opportunities and create satisfied customers.

Currently CBE has more than 1,604 branches stretched across the country. As a result, it plays a catalytic role in the economic progress & development of the country. It was also the first bank in Ethiopia to introduce ATM service for local users. As of June, 2021, it has deployed Over 3,091 ATMs and 4,350 POS all over Ethiopia. In addition, the bank's mobile banking and internet banking subscribers reached more than 5.233 million and 31 thousand respectively. CBE Birr User also reached more than 5.6 million. As of June 30, 2021 CBE has more than 31.4 million Account holders.

Source: CBE Internal report and Brochures

### **1.3 Statement of 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.

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).

As Md. Sazzad & Nishat Tasneem, (2019) stated in their research the banking sector currently facing the acute problem of non-performing loan as a sign of ineffective lending practices and day by day the problem increases although many reform measures have been carried out. As the name suggests, non-performing loans are irregular loans from which interest and principal amount becomes overdue for a specific period. In state-owned commercial banks the impact of non-performing loan is in an alarming situation. Non-performing loan is not only reducing the bank's profit but also the capacity of lending by reducing bankable assets.

According to CBE June 30, 2019 NPL Watch list report, the amount of non-performing loan increased from time to time even more than the percentage held as provision. From the total outstanding loan, corporate loan (Project Loan) takes the lion share and by economic sector Domestic Trade Service 93.74%, Manufacturing 2.49%, Export, Agriculture and Construction 1.54%, 1.52% and 0.71% respectively. Some of the reasons stated for the loan to become Non Performing are poor management of business, market problem, delay in receivable collection, diversion and the subsequent slowdown in local business activities especially in Hotel and Tourism business is found to be a major factor for irregular loan repayment patterns etc.

The above problems have resulted nonperforming loans which has a greater impact on the bank's asset management and overall financial performance. Various 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), (Oganda, J. A., Mogwambo, V, A., & Otieno, S. 2019), and (Benedict Anayochukwu 2016)

The current study tried to look at the relationship between non performing and financial performance of loan by considering each non performing attributes that means **Size, Cost, Collateral and Age** as an independent variables. The study used model adopted by Towett B. Cheruiyot (2018) in his study "NON-PERFORMING LOANS AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA" which measured each NPL component (Size, Cost, Collateral and Age of NPL) with financial performance mainly Return on Asset (ROA). As to my knowledge no other researcher in Ethiopia has tried to measure the relationship between non-performing loans and financial performance in this perspective.



Therefore, in search of knowing the relationship between non-performing loan attributes (size, cost, collateral and age) and financial performance of Commercial Bank of Ethiopia and the extent of their effect on profitability of the bank necessitated this study. The study may help bank's credit management to focus on each non-performing loan component and look at their effect and deliberate on it..

#### **1.4. Research Questions**

- To what extent NPL affects the financial performance of Commercial Bank of Ethiopia?
- What is the effect of size of non-performing loan on financial performance of Commercial Bank of Ethiopia?
- How are the costs of non-performing affects the profitability of Commercial Bank of Ethiopia?
- Does value of collateral of non-performing loan has an effect on financial performance of Commercial Bank of Ethiopia?
- Is there any relationship between age of non-performing loan and financial performance of Commercial Bank of Ethiopia?

#### **1.5 Objectives of the Study**

##### **1.5.1. General objective**

The primary objective of the study is to determine the relationship between non-performing loans and financial performance of Commercial Bank of Ethiopia.

##### **1.5 2. Specific Objectives**

The research attempts to achieve the following Objectives: -

- To examine the relationship between the size of nonperforming loans and financial performance (ROA, ROE NIM) of Commercial Bank of Ethiopia.
- To investigate the relationship between cost of non-performing loans and financial performance (ROA, ROE NIM) of Commercial Bank of Ethiopia.
- To identify the relationship between collateral of non-performing loans with respect to financial performance (ROA, ROE NIM) of Commercial Bank of Ethiopia.
- To determine the relationship between age of non-performing loans and financial performance of (ROA, ROE NIM) the Commercial bank of Ethiopia.

## **1.6. Research Hypotheses**

The study will test the following hypotheses

Ho: There is no significant relationship between the size of non-performing loans and the financial performance of Commercial bank of Ethiopia

Ho: There is no significant relationship between the cost of non-performing loan and the financial performance Commercial bank of Ethiopia

Ho: There is no significant relationship between collateral of non-performing loans and the financial performance of Commercial bank of Ethiopia

Ho: There is no significant relationship between the age of non-performing loans and The financial performance of Commercial bank of Ethiopia

## **1.7 Significance of the Study**

The study offered valuable contribution to theory and practice. First the result of the study made the commercial bank management to appreciate the need to monitor and control Non-performing loans as it equally affects the profitability through provision made by the bank. The finding also encouraged the bank management to participate more in policy formulation as far as financial performance concerned; the study also added value to the entire banking sector especially in the demanding concerns of non-performing loans and financial performance.

The employees of the commercial bank would have had insight in the overall performance of the organization and appreciate the importance of control operations as this may affect their future career in the banking sector.

In addition to this, this study also used as a reference point for future studies that would be carried out in the future on the non-performing loans.

## **1.8. Scope of the Study**

This study is limited to quantitative impacts of non-performing loans and 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 eight years' period covering 2012 to 2019 using Return on Asset, Return on Equity and Net Interest Margin as proxy estimator of CBE's financial performance. The study is conducted on Commercial bank of Ethiopia only. The study analysed using SPSS software and give the researcher own explanation.

### **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 comprised background of the study, statement of problem, research questions, the research objectives (both general and specific), significance of the study, limitation and scope of the study, the organization of the study and definition of terms.

Chapter two consisted of the review of related literature that describes previous studies about theoretical foundation, conceptual framework and empirical evidence on the effects of "Non-Performing Loans on financial performance of mainly on banking industries.

Chapter three described the research design and methodology that is used to undertake the research. Chapter four presented and interpreted the results of the research and main discussion made. Last but not least, in Chapter five presented summary of the study, conclusions, recommendation and suggestion for further study.

**1.10 Definition of Terms:** the following terms are defined based on the operational and theoretical meaning of the subject.

**Non-Performing Loans:** are loans that are outstanding both in principal and interest for a long period of time contrary to terms and conditions under the loan contract agreement (Timothy Amos, 2018).

**Financial Performance:** is the process of measuring the results of a firm's operations in monetary terms. (Eshna Verma 2020)

**Size of N Non-Performing Loan:** the total amount of non-performing loan overdue for more than 90 days.

**Cost of Non-Performing Loan:** cost incurred by the bank to manage non-performing loan

**Collateral of Non-Performing Loan:** the value of collateral property held as security for non-performing loan

**Age of Non-Performing Loan:** According to central bank (NBE directives SBB/69/2018) loans and advances classified based on overdue age status: Substandard loan (90-1790, Doubtful (180-365) and Loss (>365) days.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

The research reviewed supporting literatures, which provides useful information and a basis for the subject under the study. The researcher tried to assess previously published documents related to the topic by focusing mainly on the relationship of non-performing loans and financial performance of banking industry.

#### **2.1 Theoretical framework of the study**

Non-Performing Loan in banking industry can be an indicator of the beginning of a banking crisis negatively affects the level of investment, ruin a bank's ability to settle its liabilities and economic strength of nations by reducing credit growth.

An increasing trend of NPL in the banking system seriously hampers their efficiency as it introduces the chance of a banking crisis. Block interest revenues, deduct investment opportunities as well as create liquidity crises in a financial system, which can bring bankruptcy problems and also worsen economic activities. Therefore, identifying the factors that affect NPL is necessary to reduce its level for a stable financial system and economy. (Sanju Kumar, Basuki and Rahmat, 2021)

##### **2.1.1 Asset Quality Theory**

Credit risk is one of the factors that affect the health of an individual bank. The extent of the credit risk depends on the quality of assets held by an individual bank. The quality of assets held by a bank depends on exposure to specific risks, trends in non-performing loans, and the health and profitability of bank borrowers (Baral, 2005). Aburime (2008) asserts that the financial performance of a bank depends on its ability to foresee, avoid and monitor risks, possibly to cover losses brought about by risks arisen. Hence, in making decisions on the allocation of resources to asset deals, a bank must take into account the level of risk to the assets. Poor asset quality and low levels of liquidity are the two major causes of bank failures.( Festus Kimanzi Nzoka,2015)

Asset quality determines the healthiness of financial institutions against loss of value in asset as asset impairment risks the solvency of financial institutions. The Asset quality indicators highlight the use of non-performing loans ratios which are the proxy of asset quality and the allowance or provision to loan loss reserve. The bank is regulated to back up the bad debts by providing adequate provisions for loan loss. The ratios of

provision for loan loss to total loans take in to account to measure the quality of loan portfolio. With this framework, the asset quality is assessed by taking the ratio of loan loss provision to total loan. The lower the loan loss provision to total loan ratio indicate the quality of the asset of the bank is relatively better than the other banks. (Ebba, 2016)

### **2.1.2 Credit Default Theory**

As cited in SSRN Electronic Journal DOI:10.2139/ssrn.2389605 Source RePEc 2007 The term “credit default” has been used with many different meanings in practice. It can mean something as minor as a late payment of a debt obligation, so that a bank can apply a penalty “default” interest rate between the due date and the actual payment date. The Theory further explains lending risk systematically and ultimately to measure and manage credit risk dynamically for financial system stability. Wilson Sy (2007) hypothesizes that a credit default is caused by both delinquency and insolvency. With regard to non-performing loans Loan Serviceability Ratio(LSR) is defined as the maximum loan interest rate a borrower can service a loan amount from net disposable income after living expenses LSR Evolution - The risk in loan serviceability comes from the fact that serviceability changes over time due changes in individual circumstances and changes in the economic environment. A loan which may have started off as being easily serviceable loan may become a struggle for the borrower due to unanticipated adverse developments.

### **2.1.3 Information Asymmetry Theory**

H.Aydin Okuyan 2014 Credit markets are commonly affected by imperfections due to the presence of asymmetric information. Lenders might lack the necessary information to set the price of loans, which should reflect the borrowers’ riskiness, that is to say their probability of default.

Information asymmetry in credit markets comprises two major concepts adverse selection and moral hazard. Adverse selection arises when the creditor does not know full details of the borrower before the loan contract is concluded between the parties. Lender’s lack of sufficient information on the borrower’s risk rating and capability of repayment leads to adverse selection. Therefore, the probability of granting loan to an investor not eligible in creditors’ eye, namely the probability of adverse selection, would rise

Moral hazard refers to misuse of funds borrowed and the situation where the creditor cannot monitor the actions of the borrower; this situation is also called as the hidden

action. The borrower may get engaged in some risky projects that the creditor does not approve. Therefore, when the borrower shows tendency to take risks, the creditor should make sure that the fund lent is employed in safe investments.

A bank with market power facing an increase in adverse selection will also increase its market share and improve the quality of its borrowers. This is because a lower price attracts marginal borrowers, which are safer under adverse selection. That implies both that imperfect competition can moderate the welfare losses from an increase in adverse selection, and that higher adverse selection can moderate the welfare losses of market power. (Crawford, Pavanini, and Schivardi 2015)

#### **2.1.4 The Theory of Delegated Monitoring of Borrowers**

Zelege, 2018 Monitoring of a borrower by a bank refers to gathering of information about borrowers before and after a loan is granted, including screening of loan applications, examining the borrower's ongoing creditworthiness and ensuring that the borrower commitment to the terms of the contract. A bank has full access to have information the client's current account performance and can observe the inflows and outflow of funds. This is utmost relevant in the case of small and medium enterprises and is linked to banks' role in the payments system (Matthews and Thompson, 2008).

Engagement in financing begins with customer recruitment and selection. An issue of KYC (Know Your Customer) is so vital before proceeding to detail. Banks use various sources about its customers to get full information before yielding its credit. Use of financial statement, credit report from credit bureau, customers' history if not new is the potential sources (Bloem and Gorter, 2001).

The process of delegated monitoring involves the following steps –

a) Screening loan applications. The bank obtains past data about the applicant from various sources such as banks from which the applicant had previously borrowed, the applicant's past repayment record, income records etc.

b) Determining the creditworthiness of the applicant. The credit score is determined to prudentially price the loan and for internal aggregate lending risk management purposes of the bank.

c) If the loan is granted, write restrictive covenants/collateral requirements into the contract. The bank can obtain collateral from the borrower to offset any possible

defaults by the borrower which investors are unable to obtain through direct financing. Banks are also able to restrict the usage of the borrowed funds to ensure that the borrower does not indulge in undesirable behaviour that reduces repayment risk.

d) Ensure/Monitor the borrower - his/her activities, adherence to restrictive covenants & collateral value. Banks constantly monitor the borrower's transactions through the borrower's bank accounts

## **2.2 Empirical framework of the study**

All financial institutions in the world operate in a changing environment. These changes bring threats or opportunities thus exposing banking sector to a high risk which need to be managed efficiently and effectively.

As cited in Article Oganda, J. A.,<sup>1\*</sup> Mogwambo, V, A.,<sup>2</sup> & Otieno, S.<sup>3</sup>, 2019 (Adebola, Yusoff, & Dahalan, 2011). Guy (2011) lending institutions in both developed and developing world widely used non-performing loans as a measure of asset quality and considered it a cause for the organization failure and financial crises.

Ozurumba (2016), in its study conducted on Nigeria Commercial Banks also agreed that NPLs have inverse relationship with ROA, showing that NPL has negative effect on bank performance. A unit increase in the ratio of non-performing loans to loans & advances and loan loss provision to loans & advances respectively will decrease bank performance.

Md. Al-Amin<sup>1</sup> Md. Rahman<sup>2\*</sup> Md. Hossain<sup>3</sup>, 2021 in their study in Bangladeshi banks have also revealed that NPLs now a days have turned into a troublesome subject due to uncontrollable increase of bad or irregular loans and hence financial performance of banking sector is drastically reducing. The study also recommended that competent authorities must come forward with a view to taking best initiative in order to control this situation within a very short possible time

Nwosu, C. P., Okedigba, D. O. and Anih, D. O, 2020 the empirical result showed that NPL was found to be significant and negatively correlated with ROA, indicating that as the rate of default increased, there will be a decline in the interest income, which will reduce the profitability, thus, affecting ROA negatively. The study also noted that increased exposure to credit risk will increase operating costs. Besides banks are also required to make provisions for losses on non-performing assets, which in turn affect profitability, and there is a cost associated with bad loans recovery.

Ebba (2016), examined the relationship between non-performing loans and financial performance of commercial banks in Ethiopia and found that NPLs have a significant negative effect on banks performance and recommended that the management of the commercial banks should assess the creditworthiness of their clients and apply rigorous policies on loan advances so as loans are awarded to those with ability to repay and mitigate moral hazards such as insider lending and information asymmetry to minimize incidences of NPLs since they influence financial performance and position of the banks, by decreasing the level of interest income and consequently financial performance.

Megersa and D. Guna Sankar, 2019 on their study showed that there is a significant relationship between performance (in terms of profitability) and credit risk management (in terms of loan performance and Capital adequacy). The results of the analysis states that NPL Ratio have negative and significant effect on ROA whereas Capital Adequacy Ratio has positive effect.

NPLR is reliably predicted of ROA but CAR has relative low significant prediction. Therefore, increased portfolio at risk will reduce the revenue aspect and increase the cost associated with nonperforming loans. The researchers further recommended that bank management needs to be cautious in setting up a credit policy that will not negatively affects profitability and also they need to know how credit policy affects the operation of their banks to ensure judicious utilization of deposits and maximization of profit.

Lakew, 2019 in his study discussed that ROA has become the most common measure of bank profitability. Though Return on Equity (ROE) is also an indicator and measure of efficiency of the rate of return to shareholders, many regulators believed that Return on Asset (ROA) is the best measure of bank efficiency and it emerges as the key ratio for the evaluation of bank profitability (IMF, 2002)

Tarko, 2015 in his study noted that out of the key profitability measure profitability, return on assets (ROA), and return on equity (ROE), Net Interest margin, Liquidity the researcher used ROA as it is a strong bank profitability measure result in from high lending rate, fees and commission that lead bank growth in size and profitability. It is also an indicator of how successful an organization is compared to its total assets and gives a concept of the efficiency of the control in using its assets to generate earnings



The study also found out that NPLs rate, lending interest rate and GDP growth rate had statistically significant effect on the level of ROA. The research also found that moral hazard incentives, such as low asset, excessive risk taking (measured by loans-to-assets ratio and the growth rate of bank's loans) was found to contribute to higher NPLs. Further to reduce the adverse effect of NPLs on the broad economy and internal factors to ROA, researcher recommended banks to strengthen supervision to prevent a sharp build-up of NPLs in the future, avoid excessive lending interest rate, maintaining high credit standards, and limiting rescheduling and restructuring lending before assessing the risk.

### **2.3 Relationship of NPL and Financial performance**

Baudino and Yun, 2017 Non-performing loans can result prolonged low growth and structural imbalances in the banking sector. The size of the NPL problem can pose a daunting problem for resolution. Although the scale of NPL problems varies across countries, and definitions of NPLs are not easily comparable across countries, a few examples show how banks' NPL ratios can reach very high levels during a system-wide crisis.

An NPL crisis hinders banks from allocating credit through the economy. First, their profitability suffers, as income from bad assets falls below normal levels; second, provisioning needs to be increased; and, third, funding costs rise as counterparties seek to cover the risks of lending to weakened banks. Meanwhile, write-downs and write-offs deplete capital buffers, and NPLs require higher risk weights.

Moreover, NPLs crowd out new lending, as banks saddled with high NPLs have a reduced capacity to extend new credit. Altogether, banking systems with high NPLs experience low profitability and low growth, and this can take a long time to resolve.

Timothy Amos John, 2018 Non-performing Loans (NPLs) is generally characterized by a number of factors, economic downturns, add macro-economic volatility, deterioration of trade, high interest rate excessive reliance on overly high priced inter-bank borrowings, insider lending and moral hazard, (Goldstom& Turner, 1996).

Kumar, Basuki and Rahmat 2021 Credit risk have more impact on a bank's financial performance because a bank's revenue is generated from loans from which interest is derived (Laryea et al., 2016). Non-performing loan (NPL) reflects the performance standard of the banks & a high ratio means that the bank is at a greater risk of loss to recover the owed loan amounts. It blocks interest revenues, deduct investment

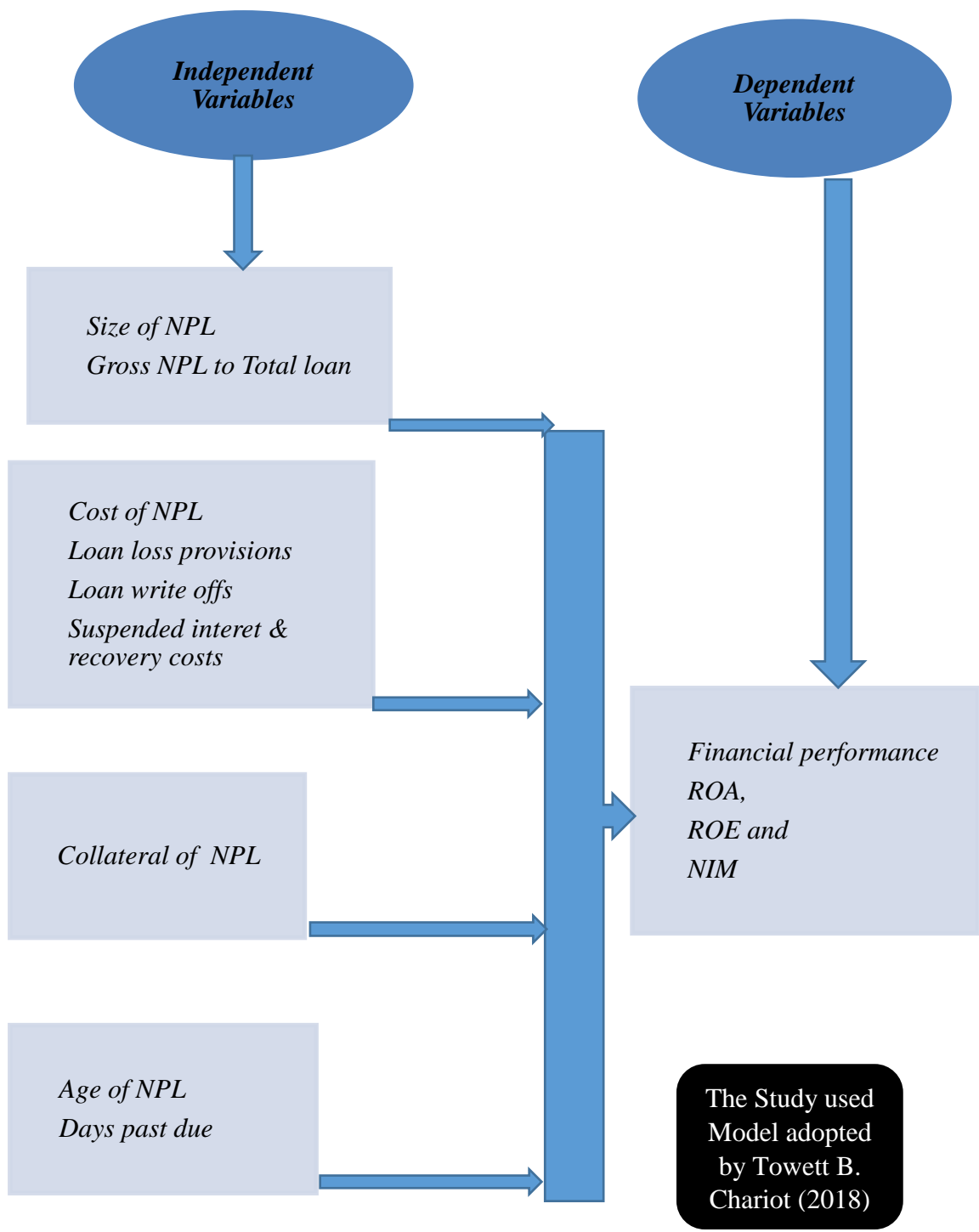
opportunities as well as create liquidity crises in a financial system, which can bring bankruptcy problem

According Klein, 2013 report the effect of NPLs has not been only the issue of the lending institutions but also economy as a whole. This economic down turn affected most countries in the whole world. To manage non-performing loan more resources are needed to be invested to cater for the unpaid loans and supplementary costs will be suffered to recover the possible loss. So non-performing loan is the major determiners of financial performance and accumulated NPL makes it difficult for Banks to finance new and economic businesses and will increase bank operational costs, influence banking system stability.

Oganda, J. A., Mogwambo, V, A., & Otieno, S. 2019 existence of non-performing loans has worsened the management of liquidity risk and financial performance as it affects banks needed liquidity to run daily operations and invest in income generating ventures. It also deprives both principal and interest income in addition to the amount set aside as provision for these loans. This negatively affects the performance of the bank and leads the lending activity inclined toward less risky sectors like the government and this has limited interest income as the government normally borrows on long term”. Controlling non – performing loans is essential for both the performance of the bank and the economy’s financial environment.

#### **2.4 Conceptual Framework**

Naomi and Nagib (2017) define a conceptual framework as a diagrammatical representation that shows the relationship between dependent variable and independent variables. Mugenda, O. M and Mugenda A.G (2009) defines conceptual framework as a concise description of phenomenon under study accompanied by a graphical or visual depiction of the major variables of the study. The study used conceptual framework adopted by Towett B. Chariot (2018) study on “Non-Performing Loans and Financial performance of Commercial Bank of Kenya ” which measured profitability with financial performance which is a dependent variable as a function of the non-performing loans independent variables that is, the size, age, gage, cost and collateral of nonperforming loans.



## **CHAPTER THREE**

### **RESEARCH DESIGN AND METHODOLOGY**

#### **3.1 Research Design**

Research design is the conceptual blueprint within which research is conducted. An action plan, it constitutes the outline of collection, measurement and analysis of data. Research design is not associated to any particular technique of data collection or any particular type of data. When designing research it is necessary that we recognize the type of evidence required to answer the research question in a reasonable way. (Inaam Akhtar, 2016)

Research design provides the ‘glue’ that holds the research project together. A design is used to structure the research, to show how all of the major parts of the research project - the samples or groups, measures, treatments or programs, and methods of assignment- work together to try to address the central research questions. (Binu B Peniel, 2016)

This study used an explanatory and descriptive research design to examine the cause and effect relationships between NPLs and financial performance. To analyse the data SPSS software is used to compute the descriptive statics (mean, standard deviation, maximum and minimum) of the study variable and multiple linear regression analysis were used to explore the relationship between NPL and financial performance.

#### **3.2. Population and Sampling Technique**

**Population** is the entire group that you want to draw conclusions about. It can be defined as a group of individual, items or objects from which samples are taken (Kombo, 2005). It can mean a group containing elements of anything you want to study, such as objects, events, organizations, countries, species, organisms, etc.

**Sampling technique** is a process of selecting a sample from a given population. The sampling technique can be probabilistic or non-probabilistic. The probabilistic sampling is based on random selection whereas the non-probabilistic is a technique in which samples selected based on the subjective judgment of the researcher. There are different types of non-probabilistic sampling such as Convenience, Consecutive, Quota, judgmental or Purposive sampling.

As the main aim of this study is to show the relationship between non performing and financial performance of Commercial Bank of Ethiopia the present study employed Consecutive non-probabilistic sampling. to examine the effect of NPL on profitability

of the bank over the eight years' period from year 2012 to 2019 since implementation of core banking system. This sampling technique includes all subjects that are available that makes the sample a better representation the entire population and it seeks to include accessible subjects as part of the sample. This non-probability sampling technique can be considered as the best of all non-probability samples

### **3.3. Type of Data**

The study used secondary data obtained from the bank: Audited Financial Statement, Annual reports on Total Loans and advances & Non-performing loans, Provision of bad debts, Write-Off loans and Collateral of NPL. In addition, internal periodic reports, Credit procedure manuals of the bank, National bank directives, books, articles and journals related to the subject matter referred to get relevant information and strengthen the study.

### **3.4 Methods of Data Collection**

The methodologies used in collecting and organizing the data were only secondary data collection method, as quantitative source of data relevant to the study. All supporting document required for this research gathered by communicating the concerned work units in person and through the bank's internal e- mail

### **3.5. Data Analysis Methods**

To achieve the objectives and answer the basic research questions descriptive statistics (Mean, Minimum, maximum standard deviation and Multiple regression analysis were undertaken by using statistical tools (SPSS version 23) which helped the researcher to describe the data. SPSS therefore produced descriptive and inferential statistics which used to draw conclusions and generalization regarding the population. The findings presented using tables for further analysis and to facilitate comparison for the study period.

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

#### **3.6.1. Dependent Variable**

The research objectives developed and hypotheses tested using the following core variables as dependent and independent variables.

#### **Profitability Measure**

For this study the researcher used the following most common measure of bank profitability:

**Return on Assets (ROA):** shows the ability of management to acquire deposits at a reasonable cost and invest them in profitable investments (Ahmed, 2009). The higher the ROA, the more the profitable the bank

**Return on Equity (ROE):** is the most important indicator of a bank's profitability and growth potential. It is the rate of return to shareholders or the percentage return on each of equity invested in the bank.

**Net Interest Margin (NIM):** measures the gap between the interest income the bank receives on loans and securities and interest cost of its borrowed funds. It reflects the cost of bank intermediation services and the efficiency of the bank. The higher the net interest margin, the higher the bank's profit and the more stable the bank is. Thus, it is one of the key measures of bank profitability.

### 3.6.2. Independent variables

The researcher used each component of non-performing loan that is the **size, age, cost and collateral of nonperforming loans** as independent variables for this study and examined the effect of non-performing loans on financial performance of Commercial Bank of Ethiopia.

### 3.7. Model specification

The researcher used model adopted by Towett B. Cheruiyot (2018) in his study "NON-PERFORMING LOANS AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA" which measured profitability with financial performance which is a dependent variable as a function of the non-performing loans (independent variables) that is, the size, age, cost and collateral of non-performing loans.

The researcher also used multiple regression analysis to determine the effect of non-performing loans on the financial performance of commercial bank of Ethiopia. The regression analysis undertaken using the following model;

$$Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + e;$$

Where; Y – Represented the financial performance of the commercial bank of Ethiopia. The performance will be measured using Return on Assets (ROA); Return on Equity (ROE) and Net Interest Margin (NIIM)

$\alpha$  = a constant

X1 – Represented size as a determinant of non-performing loan and performance;

X2 – Represented cost as a determinant of non-performing loan and performance;

X3 – Represented collateral as a determinant of non-performing loan and performance;

X4 – Represented age as a determinant of non-performing loan and performance;  
e – was the error term that represented the total variance that was not unexplained by the variables above.

### 3.8 Test of significance

The study used ANOVA test from multiple regression analysis and tested the overall significance of the models in predicting relationship between the independent variables and the dependent variables at 95% confidence level.

### 3.9 Reliability Test

Reliability is about the consistency of a measure. So before analysing the collected data, the reliability of the main items of the data was tested by using Cronbach's alpha

### 3.9 Reliability Test

Cronach's alpha is a measure of internal consistency, that is, how closely related a set of items are as a group. It is considered to be a measure of scale reliability.

**Table 3.9 Reliability Test**

Reliability Statistics	
Cronbach's Alpha	N of Items
.800	7

From Table 3.9, it can be seen that Cronbach alpha values of 0.800 obtained which is greater than 0.7 for the constructs. Therefore, reliability the study items as a group were critical to determine the financial performance of the bank.

### 3.10 Validity Test

Validity is the extent to which the scores from a measure represent the variable they are intended to. Validity is a judgment based on various types of evidence. The relevant evidence includes the measure's reliability, whether it covers the construct of interest, and whether the scores it produces are correlated with other variables they are expected to be correlated with and not correlated with variables that are conceptually distinct

The reliability and validity of a measure is not established by any single study but by the pattern of results across multiple studies. The assessment of reliability and validity is an on-going process. (Chant A.; Jhangiani; and Paul 2020)

The study tested the relationship between size, cost, collateral and age of NPL and financial performance of the bank by calculating descriptive statistics and multiple regression analysis using SPSS version 23 analytical tools and obtained that there was

significant correlation between study variables over the study period and concluded that the result obtained from the measurement is valid.

### **3.11. Ethical Consideration**

Yijun Zou, 2014 the consideration of issues of ethics within business has provided an interesting and potentially important stream of organizational research in recent years (Crane, 1999, p.237). According to Saunders et al. (2009), “ethical refers to the appropriateness of your behaviour in relation to the rights of those who become the subject of your work, or are affected by it.”

The researcher undertakes the following actions to conduct the study: -

- The researcher assessed others research work related to the topic and studied in Ethiopia and outside of Ethiopia as well
- The researcher used model adopted by Towett B. Chariot (2018) study on “NON-PERFORMING LOANS AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA” which measured profitability with financial performance which is a dependent variable as a function of the non-performing loans (independent variables) that is, the size, age, cost and collateral of non-performing loans
- The researcher gathered eight (8) years financial data in person and through CBE mail covering from 2012-2019 from the following head office organs. Audited financial statement from CBE Finance Department, Total Asset and Total NPL data from CBE MIS department, Collateral of NPL data from CBE Workout Loans Department, Provision data other internal report related to the study from Credit Business Quality Assurance Department.
- The researcher tried to ensure confidentiality of the information that was provided by the organization
- The study will be used for academic purpose and not for other purpose.
- The researcher acknowledged all the works of others used in this study



## **CHAPTER FOUR**

### **RESULTS AND DISCUSSION**

#### **4.1 Introduction**

This chapter presented the findings, data analysis and interpretation of the research. The data were gathered from the 8 years audited financial statements, Annual report of Total Loans and Advance and Non-Performing Loan, Provision held for non-performing, Write-off loans and collateral of Non-performing loan, of the Commercial Bank of Ethiopia starting from the date the bank has implemented the Core Banking system. The data are analyzed using SPSS software version 23. The results from the descriptive statistics, correlation and multiple regression analysis are also presented under and discussed in this chapter.

The findings presented the relationship between the size of non-performing loan, cost of NPL, collateral of NPL and age of NPL with Return on Asset, Return on Equity and Net Interest. Both descriptive and inferential statistics have been used to represent the data and to show the effect of explanatory variables on financial performance of Commercial Bank of Ethiopia

#### **4.2 Discussion on study variables**

This section presented the data analysis of dependent and explanatory variables used in this study. The dependent variable (Financial performance used in this study was ROA, ROE and NIM while the independent variables are size, cost, collateral and age of NPL. The discussion explained based on theoretical aspect and the collected data.

##### **4.2.1 Financial Performance**

The financial performance of the bank was important as its Profit is the ultimate goal and the strategies designed and activities performed thereof are meant to realize this grand objective. The study tried to assess the financial performance of the commercial of Ethiopia as it was the dependent variable and affected by the nonperforming loan components such the size, cost, Age and collateral. However, it might also be affected by other factors not related to nonperforming loans. The researcher used the following key performance indicator to measure the financial performance of Commercial Bank of Ethiopia: Return on Assets (ROA), and Return on equity (ROE) and Net Interest Margin (NIM).

#### 4.2.1.1 Return on Asset (ROA)

ROA measures the ability of the bank management to generate income by utilizing company assets at their disposal. In other words, it shows how efficiently the resources of the company are used to generate the income. It further indicates the efficiency of the management of a company in generating net income from all the resources of the institution (Wen, 2010). Wen (2010), state that a higher ROA shows that the company is more efficient in using its resources, (Ntuite, 2015)

**Table 4.2.1.1: Return on Asset**

Year	Total Asset In billion	Pre-tax profit In billion	Return on Asset ROA	Percentage Change of ROA
2012	159	7.9	0.05	
2013	195	8.5	0.04	12.22
2014	244	9.9	0.04	6.85
2015	305	12.7	0.04	1.96
2016	384	12.17	0.03	23.8
2017	490	12.5	0.03	19.56
2018	574	10	0.02	31.76
2019	713	15.7	0.02	26.44

**Source: Own Analysis, 2022**

The bank reported significant amount of total asset at increasing rate. As indicated in the table the total asset had grown from ETB 159 billion in 2012 to ETB 195 billion in 2013, and progressed to Birr 713 billion in 2020/19. This result is obtained through the aggressive deposit mobilization strategy implemented by the bank and availing the collected deposit in the form of loan to various customers of the bank. This can be substantiated by the data presented in the table 4.2.1.1 which showed the increment of gross loan availed to the customer of the bank.

During these periods, the pre-tax profit of the bank has increased from ETB 8 billion in 2012 to 9 billion to 10 billion and 13 billion in 2013, 2014, 2015 respectively but in 2016 the pre-tax profit of the bank had decreased to ETB 12 billion, however, in 2017 the pre-tax profit of the bank showed improvement and raised to ETB 13 billion. In 2018 again the profit of the bank decreased to ETB 10 billion. During the decline

periods, the size of non-performing loan and the costs of non-performing loan had shown increment as depicted in the table 4.2.1.1 and then in 2019 financial period the pre-tax profit of the bank significantly rose to ETB 16 billion. However, return on asset had shown a general decrease over the study period. This indicates that the efficiency of the bank on how to generate income using its assets is declining from time to time. From the table above, the bank's ROA declined from 0.05 to 0.04 in 2012 to 2015 0.03 to 0.02 in year 2016-2019, though, the total assets and pre-tax profit increased from ETB 159 billion to 713 Billion ETB 8 billion in 2012 to 16 billion in 2019 respectively.

#### 4.2.1.2 Return on Equity

ROE is a financial ratio that refers to how much profit a company earned compared to the total amount of shareholder equity invested, or found on the balance sheet. ROE is what the shareholders look in return for their investment. A business that has a high return on equity is more likely to be one that is capable of generating cash internally. ROE reflects how effectively a bank management is using shareholders' funds. Thus, it can be deduced from the above statement that the better the ROE the more effective the management in utilizing the shareholder's capital. (Ntuite, 2015)

**Table 4.2.1.2 Return on Equity (ROE)**

Year	Net Profit In billion	Equity In billion	ROE	Percentage Change of ROE
2012	5.4	7.7	0.70	
2013	5.8	9.19	0.63	0.1
2014	6.9	11.08	0.62	.03
2015	8.77	13.3	0.66	.07
2016	8.3	14.26	0.58	0.12
2017	9.56	44.55	0.21	0.64
2018	5.37	47.21	0.11	0.48
2019	11.49	50.25	0.23	1.09

**Source: Own Analysis, 2022**

As shown from the table the equity of CBE increased at decreasing rate from 2012-2016 whereas in, 2017 significantly increased due to injection of additional capital of birr 26,500,000,000 through gazette notice no. 397/2017 as issued by the Council of Ministers. However as can be seen in the above table ROE declined from time to time specifically in 2017 significantly decreased. When we look at the trend of profit the

increase was not satisfactory compared to equity contribution specifically in year 2017-2018 decreased from 9.56-5.37 due to significant increase of equity in 2017. During 2015-2018 the size and cost of non-performing loan significantly increased from 1.98-5.8 , 1.1 to 3.8 respectively . These were the major factors for the reduction profit and expected return on equity.

#### 4.2.1.3 Net Interest Margin (NIM)

NIM is also another measure financial performance and it is the difference between the interest income generated by banks and the amount of interest paid out to their lenders (for example, deposits), relative to the amount of their (interest earning) assets. It is usually expressed as a percentage of what the financial institution earns on loans in a specific time period and other assets minus the interest paid on borrowed funds divided by the average amount of the assets on which it earned income in that time period (the average earning assets). (Sylvain R. Ntuite, 2015)

**Table 4.2.1.3 Net Interest Margin (NIM)**

<b>Year</b>	<b>Total Asset In billion</b>	<b>Interest Income In billion</b>	<b>Interest Expense In billion</b>	<b>Net Interest Income</b>	<b>NIM</b>
2012	159	6.7	1.67	5.03	0.03
2013	195	9.54	2.38	7.16	0.04
2014	244	11.99.	3.44	8.55	0.04
2015	305	16.77	4.88	11.89	0.04
2016	384	21.44	6.42	15.02	0.04
2017	490	25.98	9.21	16.77	0.03
2018	574	37.33	14.75	22.58	0.04
2019	713	45.67	20.05	25.62	0.04

**Source: Own Analysis, 2022**

Net interest margin compared the net interest income generated from credit products, with that of outgoing interest paid to the holders of savings accounts and certificates of deposit (CDs). It is a good indicator for banks to determine whether or not to invest in a given financial services by providing visibility into the profitability of their interest income versus their interest expenses.

As shown in the above table interest income generated from loans in general showed increment specially from year 2015-2019 significant amount reported compared to interest expense however when compared to total asset the interest income generated relatively low and the corresponding net interest margin also showed slight or no change 0.04 over the study period which was due to the increase in the size of non-Performing loan which would lower net interest income even with lending and deposit rates being unaffected. In addition, the bank as a strategy raised its source of fund aggressively and opened new branches across the country and mobilizes deposit. In 2017 the bank also increased deposit interest rate and this had also an effect for the increment of interest expense and reduction of net interest income of the bank.

#### **4.2.2 Size of Non-performing loan**

The study tried to find the influence of Non-Performing Loans on financial performance of commercial Bank of Ethiopia. The size of nonperforming loan has a significant effect on the financial performance of the banks. Non-performing loan crisis hinders banks from allocating credit through the economy. First, their profitability suffers, as income from bad assets falls below normal levels; second, provisioning needs to be increased; and, third, funding costs rise as counterparties seek to cover the risks of lending to weakened banks. Meanwhile, write-downs and write-offs deplete capital buffers, and non-performing loans require higher risk weights.

Moreover, NPLs crowd out new lending, as banks saddled with high non- performing loans have a reduced capacity to extend new credit. Altogether, banking systems with high non- performing loan experience low profitability and low growth, and this can take a long time to resolve.

**Table 4.2.2 Size of Non-Performing Loans**

<b>Year</b>	<b>NPL Size</b>	<b>Percentage change NPL</b>	<b>Gross Loan</b>	<b>NPL size to Gross loan</b>
2012	0.43		58.33	0.74%
2013	1.56	264.15%	70.4	2.23%
2014	1.27	18.79%	89.66	1.42%
2015	1.98	56.19%	111.44	1.78%
2016	3.4	71.41%	138.8	2.45%
2017	4.31	27.98%	154	2.83%

2018	5.8	33.26%	173.3	3.35%
2019	3.50	39.64%	196.88	1.78%

**Source: Own Analysis, 2022**

As depicted in the table there was an increase in the size of non-performing loans in Commercial Bank of Ethiopia over the study period. The banks non-performing loan size had shown considerable amount of increment in 2013 amounted birr 1.5 billion from birr 0.43 billion in 2012 with an increment of 264.15%. However, the non-performing loan size had decreased by 18% in 2014. Between the years 2015 to 2018 the size of non-performing loan of the bank had increased with a significant amount from birr 1.9 billion to birr 5.8 billion. The growth in size of nonperforming loan comes with effect such as lost opportunity cost to invest the defaulted amount in other almost risk free and high rewarding ventures such as investment in Treasury bill and bonds. Moreover, from the above table, non-performing loan ratio of the bank had increase from time to time between the years 2012 to 2020 from 0.74% to 1.78 % but in between those years the non- performing loan ratio of the bank relatively shows reduction in the year 2014, 2015, 2019 with 1.42%, 1.78% and 1.78% respectively. The past history record showed that an increase in the size of the non performing which indicates that poor credit performance, which in turn affects the expected interest income collection and has a direct impact on banks profitability and efficiency.

In addition, assessment made by bank's Credit Business Quality Assurance Department in March, 2019 some of the factors increasing the size of non-performing loan were irregular loan repayments, diversion of funds, skill gap of credit performers and poor loan follow up, and financing unsecured loans.

### **4.2.3 Cost of Non-Performing Loan**

#### **4.2.3.1 Provisions**

Provision for loan-losses are reserves set aside from banks' profits and recognized in their Profit and Loss statements. It is estimated loss from particular portfolios, even before the actual loss can be determined with accuracy and certainty as events disclose and actually written off. Loan loss provisioning is thus a method that banks use to recognize a reduction in the realizable value of their loans.

In Ethiopia, the regulatory organ (the National Bank of Ethiopia) sets minimum provisioning requirement where all banks should comply with and report same to it on quarterly basis. However, it encourages banks to maintain provisions more than the

minimum requirements based on the level of their risks. In this regard, the Commercial Bank of Ethiopia has been maintaining provisions for expected loan loss on two scenarios i.e. strictly based on the minimum requirement set by NBE and more provisions (Internal Approach) based on the expected level of credit risks.

#### 4.2.3.2 Write- off loss loans

As per the credit procedure of the bank loss loan are written (either partially or in full) when the bank exhaust all means to recover the outstanding loan and it is uncertain to establish how long it will take to get a court verdict on litigation to recover the outstanding amount of defaulted loans from other attachable property registered in the name of the defaulter.

**Table 4.2.3.2 Cost of Non-Performing Loan**

<b>Year</b>	<b>Provision of NPLs In billion</b>	<b>Percentage Change</b>	<b>Write-off Loss loans In billion</b>	<b>Percentage change</b>
<b>2012</b>	0.5		0.0002	
<b>2013</b>	0.5	0.2%	.006	1874%
<b>2014</b>	1.02	104.6%	.004	33.37%
<b>2015</b>	1.1	10.07%	.0013	65.09%
<b>2016</b>	2.2	98.38%	.0037	184.75%
<b>2017</b>	2.3	4.06%	.0016	58.18%
<b>2018</b>	3.8	66.10%	.032	1,972%
<b>2019</b>	2.5	34.12%	.0019	1605%

**Source: Own Analysis, 2022**

As depicted in table 4.2.3 the provision held for non-performing loan had considerably increased by 105%, 98% and 66% in 2014, 2016 and 2018. In addition, the write-off loans (Loss loan) had also significantly increased by 0 .0002 to 0.032 in year 2012 to 2018. In general, during the study periods the size of provision held and write off loan had shown an increment from time to time. However, in year 2019 both provision and write-off amount decreased.

The major reason for the rise in provision is an increase in the size of non-performing loan (Substandard, doubtful and loss loan); which resulted growth in provision from 500 million birr in 2012 to 4 billion in 2018. In addition, the merger of CBB with CBE contributed to the rise in the size of NPL and the provision amount as well.

The amount of write-off also increased during the study period. This is mainly due to the increase in number of loss loan and also since 2016 Commercial Bank of Ethiopia had started to written off deceased staff loans and this also has a great contribution for the increase in write-off and cost of NPL as well.

Moreover, though the researcher unable to collect financial data on suspended interest (interest accrued on NPL) and loan recovery costs incurred to execute foreclosure and litigation, the contribution of these costs also had a great effect for the increase in the cost of NPL and further reduce the performance of the bank.

#### 4.2.4 Age of non-performing

As per NBE directive no SBB/69/2018 Commercial Bank of Ethiopia classify all loans and advances whether such loans or advances have pre-established repayment program or not into five classification categories: **Pass, Special Mention, Substandard, Doubtful and Loss**. Non-performing loans classified under **Substandard, Doubtful and Loss categories** based on overdue age.

**Substandard:** loans or Advances with pre-established repayment program past due 90 days or more but less than 180 days

**Doubtful:** loans or Advances with pre-established repayment program past due 180 days or more but less than 360 days

**Loss:** loans or Advances with pre-established repayment program past due 360 days or more

**Table 4.2.4 Age of Non-Performing Loan**

<b>Year</b>	<b>Substandard (90-179 days) (In billion)</b>	<b>Doubtful (180-365 days) (In billion)</b>	<b>Loss (&gt;365 days) (In billion )</b>
2012	0.2	0.03	0.18
2013	1.24	0.07	0.25
2014	0.18	0.15	0.93
2015	0.77	0.41	0.72
2016	0.74	1.06	1.59
2017	1.7	1.24	1.41
2018	1.5	1.08	3.1
2019	0.78	0.32	2.3

**Source: Own Analysis, 2022**



As depicted in the above table the age of non-performing loan categorized under Substandard, Doubtful and Loss in general had shown an increment from year 2012 to 2017 especially from year 2015-2017 significantly increased. However, in 2018 and 2019 the size of non-performing loan in all categories relatively decreased. Once loan go into non-performing loan the customer is expected to repay additional 3% penalty interest and the outstanding arrears increased and the repayment capacity of the customer became lesser and the collectability of outstanding arrears is in question. Moreover as the non-performing loans age move to substandard to doubtful and loss category, the provision held accordingly increased from 20% to 50% 100% respectively and high provision amount limited new investment opportunity and lowered the performance of the bank.

#### 4.2.5 Collateral of Non-Performing Loan

The Bank in principle follows cash flow-based lending. The primary protection against losses is the ability and willingness of the customer to repay the borrowing So Collateral shall be considered as one of the risk mitigating factors after proper analysis/appraisal of the credit proposal. Hence, collateral shall never be a substitute for creditworthiness, which is the existence of adequate cash flow to repay the loan. Collateral is considered as second way-out. Nonetheless, a security position shall not render credit performers complacent.

(Commercial Bank Credit Process procedure volume 1 May 14, 2018)

**Table 4.2.5 Collateral of Non-performing loan**

Year	NPL Amount (In billion)	Percentage Change	Collateral value (In billion)	Percentage Change
2012	0.04		.01	
2013	0.34	786.53%	.18	1,777.93%
2014	0.18	47.39%	0.11	38.38%
2015	0.28	53.09%	0.39	240.23%
2016	0.2	26.67%	0.16	57.58%
2017	1.17	479.32%	0.87	426.245
2018	1.94	64.96%	2.3	166.64%
2019	1.78	7.99%	1.07	54.03%

Source: Own Analysis, 2022

As indicated in the above table the collateral held had shown relatively decreased amount compared to non-performing loan outstanding balance this is due to the bank policy shifts from collateral-based to cash-flow-based lending. The bank has lowered its collateral coverage requirements to: -

- For Grade 1 and 2 customers 75% of the loan shall be covered by collateral
- For Grade 3 customer 85% of the loan shall be covered by collateral
- For Grade 4 and above customer 100% shall be covered by collateral
- For loan to secured against cash and cash substitutes the minimum collateral coverage shall be 75% of regardless if its level of risk grade
- For Micro Finance Institution, Union, Cooperatives or other Association that could obtain a credit guarantee, the minimum collateral coverage shall be at least 50% of the loan if it is cash collateral or 65% of the loan if it is banking guarantee regardless of Credit risk grade

The bank also granted unsecured loan (clean- base) for existing prominent customers who shall clearly confirm existence of adequate repayment capacity to service all commitments and has honesty, integrity willingness to repay and good track record. However as noted in the bank's Credit Business Quality Assurance Department assessment on Factors Increasing Non-Performing Loans in Commercial Bank of Ethiopia financing unsecured loans is a root cause for non-performing loans in the Commercial Bank of Ethiopia.

#### **4.3 Descriptive Statistics Analysis (Mean,Standard deviation,Range,Minimum and Maximum)**

Descriptive Statistics: describe and summarize data in ways that provide an overall understanding of the data dominate characteristics It therefore enables us to present the data in a more meaningful way, which allows simpler interpretation of the data. Mean was used to establish the average value of the data; standard deviation and range gave the dispersion in the data.

**Table 4.3 Descriptive Statistics**

		<b>Statistics</b>						
		Return on Asset	Return on Equity	Net Interest Margin	Size of NPL	Cost of NPL	Collateral of NPL	Age NPL
N	Valid	8	8	8	8	8	8	8
	Missing	0	0	0	0	0	0	0
Mean		.0338	.4700	.0375	2.7937	1.7625	.6425	2.7438
Std. Deviation		.01061	.24260	.00463	1.79270	1.17550	.77989	1.76518
Range		.03	.60	.01	5.38	3.36	2.32	5.27
Minimum		.02	.11	.03	.43	.50	.01	.41
Maximum		.05	.71	.04	5.81	3.86	2.33	5.68
Percentiles	25	.0225	.2150	.0325	1.3450	.6300	.1250	1.3350
	50	.0350	.6000	.0400	2.7000	1.6800	.2900	2.6450
	75	.0400	.6550	.0400	4.1475	2.4850	1.0200	4.1125

In the above descriptive analysis „N“ indicates the number of years and the minimum, maximum, range, mean and standard deviation revealed descriptive statistics of the study data. In statistics, mean summarizes an entire data set with a single number representing the data's center point or typical value and gives an indication of the average value of a distribution of figures. Standard deviation and range are the two common measure of dispersion. Range is simply the difference between the higher and lower value whereas standard deviation is a more accurate and detailed estimate of dispersion.

In the above table the grand mean ( mean of the means) of 1.21 and range mean of 2.42 obtained which indicates the spread out of the data from mean was 2.42. In addition mean values of the variables fall within the range which reveals the consistency of the data.

Size of NPL had a mean of 2.79% and standard deviation of 1.79. that means, of the total loan and advance commercial of Ethiopia, on average, incurred 2.79 defaulted loan which is less than the minimum requirement 5% set by NBE Directives No.SBB/63/2018. Minimum of 0.43 and maximum of 5.8 indicates that the bank incurred loan default of 0.43 cents and 5.8 birr in every 100-birr loan and advances.

Mean value of cost of NPL was 1.76% which denotes that, on average the commercial bank of Ethiopia on average incurred cost of 1.76 on every 100 birr non-performing loan and standard deviation of 1.18%. and a minimum of 0.5 cents and maximum of 3.8 per 100-birr non-performing loan. Collateral of non-performing loan had a mean of

0.64 this revealed that the collateral of every 100 birr non-performing loan estimated 0.64 birr and standard deviation of 2.3% this revealed that 64% of non-performing loan secured against collateral and the remaining 26% not covered by collateral. The unsecured NPL is the cost and significantly affected the profitability of the bank.

Age of NPL also had a mean of 2.74% this indicates that on average 2.74% of the total loan and advance goes to overdue loan and categorized under NPL either as substandard, doubtful of loss.

#### **4.4 Correlation analysis**

Correlation is an association between two quantitative variables and the association is linear, that one variable increases or decreases a fixed amount for a unit increase or decrease in the other. The correlation coefficient is measured on a scale that varies from + 1 through 0 to – 1. Complete correlation between two variables is expressed by either + 1 or -1. When one variable increases as the other increases the correlation is positive; when one decreases as the other increases it is negative.

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

SPSS Output table depicted below provides a matrix of the correlation coefficients for the five variables (Financial performance, Size of NPL, Cost of NPL, Collateral of NPL and Age of NPL) of the study.

The findings of the study revealed negative correlation coefficient between the study variables.

Table 4.5 below shows each correlation coefficient together with the significance value of the correlation and time serious data of eight years as a sample are displayed and 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 (\*\*)

**Table 4.4 Correlation Matrix**

		Correlations						
		Return on Asset	Net Interest Margin	Return on Equity	Size of NPL	Cost of NPL	Collateral of NPL	Age NPL
Return on Asset	Pearson Correlation	1	-.364	.883**	-.902**	-.921**	-.797*	-.898**
	Sig. (2-tailed)		.376	.004	.002	.001	.018	.002
	N	8	8	8	8	8	8	8
Net Interest Margin	Pearson Correlation	-.364	1	.025	.137	.185	.160	.127
	Sig. (2-tailed)	.376		.952	.746	.661	.705	.764
	N	8	8	8	8	8	8	8
Return on Equity	Pearson Correlation	.883**	.025	1	-.905**	-.894**	-.889**	-.902**
	Sig. (2-tailed)	.004	.952		.002	.003	.003	.002
	N	8	8	8	8	8	8	8
Size of NPL	Pearson Correlation	-.902**	.137	-.905**	1	.964**	.871**	1.000**
	Sig. (2-tailed)	.002	.746	.002		.000	.005	.000
	N	8	8	8	8	8	8	8
Cost of NPL	Pearson Correlation	-.921**	.185	-.894**	.964**	1	.889**	.960**
	Sig. (2-tailed)	.001	.661	.003	.000		.003	.000
	N	8	8	8	8	8	8	8
Collateral of NPL	Pearson Correlation	-.797*	.160	-.889**	.871**	.889**	1	.862**
	Sig. (2-tailed)	.018	.705	.003	.005	.003		.006
	N	8	8	8	8	8	8	8
Age NPL	Pearson Correlation	-.898**	.127	-.902**	1.000**	.960**	.862**	1
	Sig. (2-tailed)	.002	.764	.002	.000	.000	.006	
	N	8	8	8	8	8	8	8

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

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

From the above table in general the negative coefficient showed that the negative impact of the independent variable on financial performance. The finding evidenced that there were a negative relationship between ROA and size of NPL ( $r = -0.902$ ,  $p < 0.01$ ), cost of NPL ( $r = -0.921$ ,  $P < 0.01$ ), collateral of NPL ( $r = -0.797$ ,  $p < 0.01$ ) and age of NPL ( $r = -0.898$ ,  $p < 0.01$ ) respectively. There were also negative relationship between ROE and size, cost, collateral and age of NPL ( $r = -0.905, -0.894, -0.889$  and  $-0.902$ ,  $p < 0.01$  respectively).

On the other hand, from the same table there were a positive and strong relationship between size of non- performing loan and cost collateral of non-performing loan, and Age of performing loan and there were also a positive relationship between cost of NPL and collateral and age of NPL.

**4.5. Regression Assumption Test:** the study conducted the following diagnostic test R-squared model of goodness of fit, Auto correlation- Durbin Watson, Analysis of variance and multi-collinearity test.

#### 4.5.1 Model Goodness of Fit

R-squared is a goodness-of-fit measure for linear regression models. This statistic indicates the percentage of the variance in the dependent variables that the independent variables explain collectively. R-squared measures the strength of the relationship between independent and the dependent variable

**Table 4.5.1 Model summary**

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.920 <sup>a</sup>	.846	.730	.04294	2.600

a. Predictors: (Constant), Collateral of NPL, Size of NPL, Cost of NPL, Age of NPL

b. Dependent Variable: Financial Performance

From table above the coefficient R Square ( $R^2$ ) explains the percentage of variation in the dependent variable (financial performance of commercial bank of Ethiopia) that is explained by the independent variables (size, collateral, cost of nonperforming loans and Age of NPL). With an  $R^2$  of 0.846, the study showed that 84.6% of the performance of the bank over the study period was determined by the size, collateral, cost and age of

nonperforming loans with the remaining 15.4% explained or determined by other factors not included in this studyt

#### 4.5.2 Auto Correlation Test

The Durbin Watson (DW) statistic is a test for autocorrelation in the residuals from a statistical model or regression analysis and it will always have a value ranging between 0 and 4. As a general rule, the residuals are independent, if the Durbin-Watson statistic is approximately 2, and an acceptable range is between 1.50 and 2.50. In this study, Durbin-Watson is 2.6, close to the acceptable range; so, it can be concluded that there was no autocorrelation.

#### 4.5.3 Analysis of Variance:

Analysis of Variance (ANOVA) was used to make simultaneous comparisons between two or more means; thus, testing whether a significant relation exists between variables (dependent and independent variables). It tells us whether the model, overall, results in a significant good degree of prediction of the outcome variable

**Table 4.5.3 Analysis of Variance:**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.041	3	.014	7.323	.042 <sup>b</sup>
	Residual	.007	4	.002		
	Total	.048	7			
a. Dependent Variable: Financial Performance						
b. Predictors: (Constant), Collateral of NPL, Size of NPL, Cost of NPL, Age of NPL,						

This study SPSS output of analysis of variance (ANOVA) indicated the F statistics and the associated significance value. The F-statistics of 7.323 with significance level at  $p=.042$  indicates that the model is well fitted at 5% significance level. So we reject the null hypothesis of the ANOVA and conclude that there is a statistically significant difference between the means of the groups.

#### 4.5.4 Multicollinearity Test

The study conducted multi-collinearity test to determine if two or more independent variables in the multi regression model are highly correlated. Tolerance indicates the presence of variance in the independent variables that cannot be accounted for by the

other independent variable while variance inflation factor (VIF) is the inverse of tolerance.

**Table 4.5.4 Collinearity Statistics**

<b>Coefficients<sup>a</sup></b>		
Model	Collinearity Statistics	
	Tolerance	VIF
Size of of NPL	.210	4.755
Cost of of NPL	.241	4.144
Collateral of NPL	.072	13.978
Age of NPL	.209	4.7

As shown from the table the tolerance value ranged .072 to .241 and the corresponding VIF ranged 4.144 to 13.978 since tolerance value shows above 0.1 and VIF value less than 10 except collateral of NPL. In general it can be concluded that there is no collinearity in the model.

#### **4.6 Regression coefficient results**

Regression analysis refers to assessing the relationship between the outcome variable and one or more explanatory variables. In this study the outcome variable financial performance measure (ROA, ROE and NIM) and the predictors or independent variables, (Size, Cost, Collateral and Age of NPL). Where  $Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + e$ ;

Where; Y – represented the financial performance of the commercial bank of Ethiopia. The performance measured using Return on Assets (ROA), Return on Equity (ROE) and Net Interest Margin (NIM) the independent variable, X1 is the Size of NPL, X2 is Cost of NPL, X3 is Collateral of NPL, X4 is Age of NPL,  $\alpha$  is constant  $\beta_1$  to  $\beta_4$  is regression coefficients and e – was the error term that represented the total variance that was not unexplained by the variables above.

The sign of a regression coefficient tells whether there is a positive or negative correlation between each independent variable and the dependent variable.



#### 4.6.1. Regression Coefficients- ROA

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.049	.003		14.351	.000
Size of NPL	-.005	.001	-.902	-5.130	.002
Cost of NPL	-.008	.001	-.921	-5.788	.001
Collateral of NPL	-.011	-.003	-.797	-3.237	.018
Age of NPL	-.005	-.001	-.898	-5.004	.002

a. Dependent Variable: Return on Asset

**Table 4.6.2 Regression coefficient -ROE**

Coefficient Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.049	.003		14.351	.000
Size of NPL	-.122	.024	-.905	-5.196	.002
Cost of NPL	-.184	.038	-.894	-4.884	.003
Collateral of NPL	-.277	-.058	-.889	--4.763	.003
Age of NPL	-.124	-.024	-.902	-5.132	.002

a. Dependent Variable: Return on Equity

**Table 4.6.3 Regression Coefficient - NIM**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.049	.003		14.351	.000
Size of NPL	.080	.084	.137	-5.196	.764
Cost of NPL	.000	.008	.185	-4.884	.705
Collateral of NPL	-.005	.008	-.160	-4.763	.661
Age of NPL	-.079	.001	.127	.314	.764

a. Dependent Variable: Net Interest Margin

**Size of non-performing loan** the result of above tables showed that size of nonperforming loan was statistically significant in determining financial performance of Commercial Bank of Ethiopia. The size of the non-performing loan had a negative relationship with ROA, ROE and hence statistically significance effect on the performance of commercial banks of Ethiopia with a P-value ( $p= 0.002$ ) that was less than the common alpha of 0.05 with a negative determinant of -0.005 and -.122 in the regression model of the study, a unit decrease in the size of nonperforming loans would increase the financial performance by 0.005 and .122 units.

**Cost of non-performing loan** was statistically significant in determining the financial performance of commercial bank of Ethiopia the test result showed that cost of NPL had negative relationship with ROA and ROE -.008 and -.184 respectively with a P-Value of 0.001 and .003 that is less than the common alpha of 0.05. A unit decrease in cost of nonperforming loan increases the financial performance by 0.008 and .184 units. Cost of non-performing loans had had a great effect in eroding the bank's profitability making provisions for credit losses, write-offs, Interest in suspense and loan recovery costs incurred during foreclosure of collateral and litigation would cause additional losses.

**Collateral of non-performing loan** as shown in the above table the relationship collateral with ROA and ROE also had negative effect with p-value of .018 and .003 respectively. This is due to the bank has lowered its collateral coverage ratio to 75%

and 85% of loan for grade 1,2 and 3 customers. In addition to this the bank also extended loan based on clean bases without securing collateral. Therefore in case loan default the bank unable recovers the outstanding loan.

**The age of non-performing loan** was statistically significant in determining the financial performance of commercial bank of 'Ethiopia with a P-Value of 0.002 A unit increase in age of nonperforming loan would decrease the ROA and ROE of the bank by 0.005 and .124 units respectively. When the overdue age moved from substandard to doubtful to loss the provision held according increased from 20%, to 50% to 100%. This condition significantly affected the profitability of the bank as the amount held for provision tied up and reduce new investment opportunity..

The coefficient of the independent variables in relation to net interest margin also showed negative determinant of  $-.005$  and  $-079$  collateral and age of non-performing and zero and close to zero coefficient with cost and size of non-performing loan in general this also indicates there was negative relationship between non-performing loan and net interest margin. During the study period the bank aggressively collected deposit and in addition in 2017 interest rate for deposit also increased. Due to this the interest paid out for depositors increased and this had the main factor that lowered the net interest income and the net interest margin of the bank.

#### **4.7. Hypotheses Test Result**

Hypothesis testing is a systematic approach to assessing theories through observations and determining the probability that a stated statement is true or false. Two main approaches to statistical inference in a null hypothesis can be used– significance testing by Ronald Fisher and hypothesis testing by Jerzy Neyman and Egon Pearson. Fisher's significance testing approach states that a null hypothesis is rejected if the measured data is significantly unlikely to have occurred (the null hypothesis is false).

The finding of this study also evidenced that there is significant relationship between independent and dependent variables and hence null hypotheses are rejected and replaced with the alternate hypotheses. The finding of the test result depicted below

**Table 4.7 Hypotheses Test Result**

<b>Hypotheses</b>	<b>Evidence</b>
H1: There is significance relationship between size of NPL and financial performance of Commercial Bank of Ethiopia	Beta= -0.005 and -0.122 P=.002
H2: There is significance relationship between cost of NPL and financial performance of Commercial Bank of Ethiopia	Beta= -.008 and -.184 P=.001 and .003
H3: There is significance relationship between collateral of NPL and financial performance of Commercial Bank of Ethiopia	Beta= -0.011 and -0.277 P=.018 and .003
H4: There is significance relationship between Age of NPL and financial performance of Commercial Bank of Ethiopia	Beta=- -0.005 and -0.124 P=.002

## **CHAPTER FIVE**

### **CONCLUSIONS AND RECOMMENDATIONS**

This chapter presents the summary of findings of the study, conclusions and recommendations.

#### **5.1 Summary**

The research was conducted aiming to examine the relationship between Non-performing loan and financial performance of Commercial Bank of Ethiopia. To address the research questions eight years from 2012-2019 financial data related to the study were gathered. Descriptive and explanatory research design was employed and data analyzed using descriptive and inferential data analysis methods using SPSS tools to show the relationship between the independent and dependent variables.

#### **The major findings of the study were;**

1. Descriptive analysis result the ratio of profitability indicators ROA, ROE and NIM showed a decrease from time to time. Though the bank reported significant increase in total asset, equity contribution and profit, due to the increase in the size and cost of non-performing loan, interest expense paid to depositors during the study period interest income generated from loan decreased and negatively affected the profitability of the bank
2. Descriptive statistics analysis result size of non-perming loan had a mean of 2.79% and standard deviation of 1.79. that means, of the total loan and advance commercial of Ethiopia, on average, incurred 2.79 defaulted loan which is less than the minimum requirement 5% set by NBE Directives No.SBB/63/2018.

Mean value of cost of NPL was 1.76% which denotes that, on average the commercial bank of Ethiopi on average incurred cost of 1.76 and standard deviation of 1.18% in every 100 birr non-performing loan. Collateral of non-performing loan had a mean of 0.64 this revealed that the collateral of every 100 birr non-performing loan estimated 0.64 birr and standard deviation of 2.3% this revealed that 64% of non-performing loan secured against collateral and the remaining 26% not covered by collateral. The unsecured NPL is the cost and significantly affected the profitability of the bank.

Age of NPL also had a mean of 2.74% this indicates that on average 2.74% of the total loan and advance goes to overdue loan and categorized under NPL either as substandard, doubtful of loss.

3. The correlation matrix also indicates that, there was a negative relationship between Independent and dependent variables with negative coefficient of -.902,-.921,-.797 and -.898 and -.905,-.894,-.889 and -.902 in relation to ROA and ROE respectively this indicates that there was negative relationship between the study variables.

4. Coefficient R Square (R<sup>2</sup>) revealed an R<sup>2</sup> of 0.846 that means only 84.6% of the Performance of the bank over the study period was determined by the size, collateral, cost and age of nonperforming loans with the remaining 15.4 % explained or determined by other factors not included in this study.

5. The multiple regression analysis result also showed negative impact of the explanatory variables. In relation to ROA size, cost, collateral and age of non-performing loan showed significant effect resulted negative coefficient of -.005,-.008,-.011 and -.005 respectively contradicting the null hypotheses. With regard to ROE the regression result also revealed that explanatory variables had statistically significant effect on profitability of the bank evidencing negative coefficient value of -.122,-.184,-.277 and -.124 and p value of less than .01 respectively

## **5.2. Conclusion**

**Based on the findings of the survey presented in the study, the researcher has drawn the following conclusions:**

**Size of nonperforming loan:** the findings of descriptive statistics, the correlation matrix and multiple regression outcomes also evidenced that there was negative relationship between size of non-performing loan and financial performance of the bank. The size of non-performing loan considerably increased over the study period which lowers credit performance, affected the expected interest income and has a direct impact on banks profitability and efficiency. The study concludes that as the size of non-performing increased this may have limited the lending capacity of the bank, the opportunity to invest the defaulted amount to new loans and stretch in different sectors of the economy.

**Costs of Non-Performing Loan:** the study found that costs of non-performing loan had a negative effect on financial performance of the bank. As the loans status became worse and moved from substandard to doubtful to loss the provision held

accordingly increased from 20% to 50% to 100%. The amount of write-off also increased during the study period. Moreover, though the researcher unable to gather financial data on loan recovery costs related to execution of foreclosure, litigation, and suspended accrued interest, the contribution of these costs had a great impact for the increment of the cost of non-performing and affected the financial performance of the bank.

**Collateral of Non-Performing Loan:** the study result showed that there is negative relationship between collateral of non-performing loan and financial performance of the bank. The main reason for the decrease of collateral value was as stated in the bank's credit procedure manual, 2018 the bank has lowered collateral coverage ratio to 75% and 85% of loan respectively for grade 1,2 and 3 customer. This had its own contribution for the bank for unable to recover the outstanding non-performing loan.

**Age of Non-Performing Loan** as shown in the study the age non-performing loan in all category in general increased specifically loan with loss status considerably increased. If the overdue age moved substandard to doubtful to loss the probability of collection of repayment became less because the customer is expected to repay 3% penalty in addition to contract interest rate and principal amount and this increased the outstanding loan and challenges the repayment capacity of the borrower. The provision held no longer available to provide new loans rather absorbed by write-off or other cost to recover loss loans. So, if the age of non-performing loan became worst it reduces the amount of income generated from credit business and affected the profitability of the bank.

### **5.3 Recommendation**

**Based on the above conclusions, the researcher forwards the following recommendations:-**

According to information Asymmetry theory, between two transacting party in this case lender-borrower, the party who have better or prior knowledge on the fate of the project will take advantage over the other party. Many studies argued that asymmetric information plays a key role in lending markets and state that the borrowers likely to have more information than the lender about the risks of the project for which they receive funds. This will lead banks to fail in credit rationing, inefficient provision, mispricing of risk. So the researcher recommends that Commercial Bank of Ethiopia as it is the largest and have huge credit portfolio in the

country should hire consultant who have professional expertise on major priority areas like Agriculture, Manufacturing and able to enhance the current lending practice and also may help the bank to have better knowledge in projects to be financed in advance of the customer.

The bank's credit management should continue and strengthen its follow ups, monitoring and supervision of borrower business like physical follow up and reassessment of customer financial reports and surprise checking over the life of the loan. Through regular follow up strategies and commitment the management to reduce diversion of loans, increase collection of repayments, and help customer business to remain healthy and profitable.

CRMs should provide counselling and advices to borrower in how to manage their business, and wise use of the borrowed fund for the approved business purpose in order to protect customer from business failure emanating from knowledge gap. This, may enable customer effectively manage their business and further maintain long lasting business relationship with the bank.

The study also recommends that the credit management should provide regular training for credit performers in all levels to improve the credit business knowledge, to fill competency gap and to prevent financial risk.

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

The researcher recommends further study on the relationship between NPL and financial performance with regard to size, cost, age and collateral of non-performing loan by including additional parameters that might affect the financial performance of commercial banks of Ethiopia.



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**Appendix I: Total Asset, Gross loan and Total non-performing loan**

<b>Year</b>	<b>Total Asset In billion</b>	<b>Gross Loan In billion</b>	<b>Total Non- Performing Loan In billion</b>
2012	159	58.33	0.43
2013	195	70.4	1.56
2014	244	89.66	1.27
2015	305	111.44	1.98
2016	384	138.8	3.4
2017	490	154	4.31
2018	574	173.3	5.8
2019	713	196.88	3.5

Financial data from Audited Financial Statement

<b>Year</b>	<b>Pre -tax profit in billion birr</b>	<b>Equity In billion birr</b>	<b>Interest Income In billion birr</b>	<b>Interest Expense in billion birr</b>
2012	7.9	7.7	5.03	1.67
2013	8.5	9.19	7.16	2.38
2014	9.9	11.08	8.55	3.44
2015	12.7	13.3	11.89	4.88
2016	12.17	14.26	15.02	6.42
2017	12.5	44.55	16.77	9.21
2018	10	47.21	22.58	14.75
2019	15.7	50.25	25.62	20.05

Provision data

<b>Year</b>	<b>Provision In billion</b>
2012	0.5
2013	0.5
2014	1.02
2015	1.1
2016	2.2
2017	2.3
2018	3.8
2019	2.5

## Appendix II Regression coefficient

**Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.049	.003		14.351	.000
	Size of NPL	-.005	.001	-.902	-5.130	.002

a. Dependent Variable: Return on Asset

**Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.048	.003		16.227	.000
	Cost of NPL	-.008	.001	-.921	-5.788	.001

a. Dependent Variable: Return on Asset

**Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.041	.003		12.503	.000
	Collateral of NPL	-.011	.003	-.797	-3.237	.018

a. Dependent Variable: Return on Asset

**Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.049	.003		14.060	.000
	Age NPL	-.005	.001	-.898	-5.004	.002

a. Dependent Variable: Return on Asset

**Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.812	.077		10.578	.000
	Size of NPL	-.122	.024	-.905	-5.196	.002

a. Dependent Variable: Return on Equity

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.795	.078		10.133	.000
	Cost of NPL	-.184	.038	-.894	-4.884	.003

a. Dependent Variable: Return on Equity

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.648	.056		11.472	.000
	Collateral of NPL	-.277	.058	-.889	-4.763	.003

a. Dependent Variable: Return on Equity

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.810	.077		10.469	.000
	Age NPL	-.124	.024	-.902	-5.132	.002

a. Dependent Variable: Return on Equity