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THE IMPACT OF MACROECONOMIC FACTORS ON FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN ETHIOPIA

By

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Certificate of Declaration

This is to certify that the thesis prepared by Tewodros Gebreyes, entitled: *The Impact of Macroeconomic Factors on Financial Performance of Commercial Banks in Ethiopia* and submitted for the partial fulfillment of the requirement for the degree of Masters of Science in Accounting and Finance complies with the regulation of the university and meets accepted standard with respect to Originality and Quality.

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STATEMENTS OF DECLARATION

I, **Tewodros Gebreyes** declare that this thesis entitled **"The Impact of Macroeconomic Factors on financial Performance of Commercial Banks of Ethiopia"** submitted in partial fulfillment of the requirements for the Degree of Master of Science in Accounting and Finance, is outcome of my own effort and study and that all sources of materials used for the study have been duly acknowledged. I have produced it independently with only guidance and suggestion of the thesis Advisor. The study complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

Name: TEWODROS GEBREYES

Signature……

Date…….

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ABSTRACT

The study investigated the impact of Macroeconomic factors on financial performance of commercial banks in Ethiopia. Basically, banks financial performance can be determined by both internal and external factors but in this study the Macroeconomic effect on financial performance have been studied. The study used secondary panel data for the year 2008-2017 from audited annual financial statements of banks included in the sample, annual report of National Bank of Ethiopia and the World Bank data websites, to assess the effect of Macroeconomic factors on banks performance. Purposive sampling was used to select seven commercial banks out of seventeen commercial banks on the basis of having full set of data on the range of year from 2008-2017, proportion of capital and proportion of number of branches opened. Besides sampling method, the data analysis tools that have been used in this research work were descriptive statistics as well as econometric model. Fixed effect Model have been applied for both model with dependent variables ROA and ROE and Six Macroeconomic Variables as independent variables such as percentage change of Money supply (MS), Inflation Rate(IR), Foreign Exchange Rate (FER), Real Gross Domestic Product (RGDP), Real Lending Interest Rate(RLIR) and Unemployment rate(UR).the major finding of the study shows that percentage change of Money supply and foreign Exchange rate have significant effect on both ROA and ROE with positive and negative relationship respectively. Inflation rate has positive significant relationship with ROA but it has Negative insignificant relationship with ROE. Unemployment rate has negative significant relationship with ROA and Negative insignificant relationship with ROE. Real Lending Interest rate has positive insignificant effect on ROA and ROE and Finally Real Gross Domestic Product has significant negative relationship with ROE but it has negative insignificant effect on ROA.

Keywords: Financial performance, Macroeconomic factors, Commercial Banks.

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ACRONYMS

NBE	National bank of Ethiopia
ROA	Return on Assets
ROE	Return on Equity
NIM	Net Interest Margin
EMH	efficient Market Hypothesis
GDP	Gross domestic Product
IR	Inflation rate
RLIR	Real Lending Interest Rate
FER	Foreign Exchange Rate
MS	Money supply
APT	Arbitrage pricing theory
OLS	Ordinary Least Square
NIBT	Net Income before Tax
CBE	Commercial Banks of Ethiopia
DB	Dashen Bank
AIB	Awash International Bank
UB	United Bank
NIB	Nib International Bank
BOA	Bank of Abyssinia
WB	Wegagen Bank
UR	Unemployment Rate
WB	World Bank
GTP2	Growth and Transformation Plan Two

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CHAPTER ONE

INTRODUCTION

1.1Background of the Study

The financial sector of the economy on its task of facilitating the flow of funds from surplus unit or investor to deficit unit or Borrower make a great contribution to long term economic growth and development of the country.as (Bekalu & Abel, 2017) said the role of financial system is not only transfer of funds from savers to investor but it also ensure that the funds are being transfer to the sectors which are most important to the economy.

In developed country, where there is a well-developed financial market, the channeling of funds from surplus unit to deficit unit is performed by joint effort of financial market and banking system but in the developing country like Ethiopia, where there is no financial market, only the banking system takes the burden of this financial intermediation function.

The dominant financial institution in developing country like Ethiopia is commercial banks so that its economy is highly dependent on these banks. As pointed out by (Elshaday, Kenenisa & Mohammed, 2018) the overall function of the economy of the developing country like Ethiopia is highly dependent on the well-functioning of its Commercial banks and if not the entire economy will become illiquid and saving and investment will be divorced.

Because of this vital role of commercial banks in the economy, the banking sector has been singled out for special protection and it is clear why such great emphasis is placed on regulation and supervision of the banking sector (Illo, 2012).

Although there is strong regulation and supervision by Central banks of respective country, there has been a recorded history that shows how financial crises of one developed country has a bad cascading effect on the overall economy of the world. As (Pastory & Marobhe, 2012) said The world economic crunch of 2008 that originated in the USA and which is considered to be the worst crisis since the Great Depression has proved that a sound and profitable banking sector is essential for the overall financial stability of any economy operating under a bank-based financial system.

According to (Zawadi, 2013) a healthy financial system of banks is the guarantee not only for depositors but also for all stakeholders who directly or indirectly are affected with banks' operation such as: shareholders, employees, investors, depositors, government and the whole economy at large. As a means to boost the confidence of these stakeholders, efforts have been exerted to assess the determinants of financial performance of financial institutions in general and the banking sector in particular by various researchers.

The performance of commercial banks can be affected by internal and external factors which can be classified into bank specific or internal and external or non-specific factors (Ongore & Kusa, 2013). The internal factors are individual bank characteristics which affect the bank's performance, these factors are basically influenced by the internal decisions of management and board. The external factors are sector wide or country wide factors which are beyond the control of the company and affect the profitability of banks (Ongore & kusa, 2013).

These external factors are industry specific factors and Macroeconomic factor that affect the performance of commercial banks.

As (Gezena, 2012) mentioned the ultimate policy of any country in general is to have sustainable economic growth and development. So based on this fact Ethiopia aims to raise its economic growth in line with its goals of becoming middle income level countries by 2025.

So to achieve these objectives the agriculture and Manufacturing sector of the country must grow proportionally. According to GTP2 the development of Manufacturing and agricultural sectors is the basis for sustainable growth of the country to become middle income country in 2025. So for the realization of this transformation agenda a concerted effort is needed from different stakeholders and long term leadership commitment.

Among the many stakeholders that play a big role in Manufacturing and service sector development commercial banks are the one that supply financial services for investors. But to do this intermediary function efficiently banks must be profitable above covering its operating expense. This banks profit in turn is influenced both by internal and Macroeconomic factors.

Among these two group factors this study will assess how financial performance of commercial banks of Ethiopia would be affected by macroeconomic factors.

1.2 Overview of Banking Sector in Ethiopia

"Bank of Abyssinia" was established in 1905 based on the agreement signed between the Ethiopian government and the national bank of Egypt, which was owned by the British. Its capital was one million shilling. According to the agreement the bank allowed to engage in commercial banking activities such as selling shares, accepting deposits and effecting payment in cheque and to issue currency notes. The agreement prevented the establishment of other bank so that it gives monopoly right to the bank. Opened branches in Harer, Dire-dawa, gore and Dembi- dolo as well as an agency office in Gambella and a transit office in Djibouti. Apart from serving foreigner residing Ethiopia and holding Government accounts, it could not attract depositors from Ethiopian nationals who were not familiar with banking services. (Fasil & Merhatibeb, 2012)

In 1931 bank of Abyssinia was legally replaced by bank of Ethiopia shortly after emperor Haile Selassie came to power. The new bank, bank of Ethiopia, was a purely Ethiopian institution and was the first indigenous bank in Africa and established by official decree on august 29, 1931 with capital of 750,000 pound. Bank of Egypt was willing to abandon it's on cessionary right in return for a payment of pound sterling 40,000 and the transfer of ownership took place very smoothly and personnel of the bank of Abyssinia including its manager being retained by the new Bank. Ethiopian Government owns 60 percent of the total share of the bank and all transactions were subject to scrutiny by its Ministry of finance. Bank of Ethiopia took over the commercial activities of the bank of Abyssinia and was authorized to issue notes and coins. The bank with branches in Dire dawa, Gore, Dessie, Debre Tabor, Harer, Agency in Gambella and a transit office in Djibouti continued successfully until the Italian invasion in 1935. (Belayneh, 2011)

With the Italian occupation (1936-1941), the operation of the bank of Ethiopia came to halt, but a number of Italian financial institution were working in the country. These were Banco Di Roma, Banko Di Napoli and Banko Nazionale del Lavora.it should also be mentioned that Barclays bank had opened a Branch and Operated in Ethiopia during 1942-1943. (Fasil & Merhatibeb, 2012)

In 1943, the state bank of Ethiopia commenced full operation after 8 month of preparatory activities.it has the power of both commercial bank and national bank such as issuing bank coins and note. The state bank of Ethiopia had established 21 branches including a branch in

Khartoum, Sudan and a transit office in Djibouti until it ceased to exist by bank proclamation issued on December 1963.then the Ethiopian monetary and Banking law that came into force in 1963 separated the function of commercial and central banking and creating National bank and Commercial bank of Ethiopia. . (Belete, 2017)

The first privately owned company in banking business was the Addis Ababa Bank S.C, Established in in 1964.51 percent of the share of the bank were owned by Ethiopian shareholders, 9% by foreigners living in Ethiopia and 40% by the National and Grind lays bank of London. (Fasil & Merhatibeb, 2012)

Following the 1974 revolution, on January 1, 1975 all private Banks and 13 insurance company were nationalized and along with state owned banks, placed under the coordination, supervision and control of the National Bank of Ethiopia. The three private banks Banko Di Roman, Banko Di Napoli and the addis bank share company were merged to form "Addis bank". Eventually in 1980 this bank was itself merged with the commercial banks of Ethiopia S.C to form the "Commercial Banks of Ethiopia", thereby creating a Monopoly of Commercial Banking Services in Ethiopia. (Fasil & Merhatibeb, 2012)

In 1976, the Ethiopian investment and saving S.C was merged with the Ethiopian Government saving and Mortgage Company to form the housing and savings bank. The agricultural and industrial development bank continued under the same name until 1974 when it was renamed as the development bank of Ethiopia. Thus from 1975 to 1994 there were four state owned banks and one state owned insurance company i.e. the national banks of Ethiopia, the commercial Banks of Ethiopia, the housing and saving Bank, the development bank of Ethiopia and the Ethiopian insurance corporation. (Fasil & Merhatibeb, 2012)

Following the downfall of the Derg regime with its 17 years command economy system in 1991, EPRDF was declared a liberal economy system. In line with this, monetary and banking proclamation of 1994 established the national bank of Ethiopia act as a judicial entity separated from the government and outlined its main function. Monetary and Banking proclamation No 83, 1994 and the Licensing and supervision of Banking Business No. 84, 1994 laid down the legal basis for investment in the banking sector.(Fasil & Merhatibeb, 2012)

Consequently, after the issuance of the proclamation No. 84, 1994 Ethiopian nationalities began to join the country's private banking industry. As of April 2017 18 banks are under

operation sixteen of them are private commercial banks, one state owned commercial bank and the remaining one is development bank. The two government owned banks are Commercial bank of Ethiopia (CBE) and Development bank of Ethiopia (DBE) and the sixteen private commercial banks are ; Awash international Bank s.c (AIB), Dashen Bank s.c (DB), Bank of Abyssinia s.c (BOA), Wegagen Bank s.c (WB), United Bank s.c (UB), Nib international Bank s.c (NIB), Cooperative bank of Oromias.c (CBO), Lion international Bank s.c (LIB), Oromia International Bank s.c (OIB), Zemen Bank s.c (ZB), Buna International Bank s.c (BIB), Birehan International Bank s.c (BBI), Abay Bank s.c (AB), Addis International Bank s.c (ADIB), Debub Global Bank s.c (DGB) and Enat Bank s.c (EB). (Belete, 2017)

1.3 Statement of the problem

Financial institution plays an important role for economic development of the country. As (Tesfaye, 2014) said banks plays a vital role in economic development through engaging themselves in intermediating role which enhance investment and growth.

In developing country like Ethiopia financial institution have paramount importance. According to (Elshaday et al., 2017) in Ethiopia where the financial system as a whole is bank dependent due to poor development or absence of stock market the banking system take the whole burden of facilitating the intermediary function.

In order to perform its intermediary role efficiently the banking system must have sufficient profit above covering its operating expense .this means the banking system must be sound and profitable to aid for the stability of economy of any country.

According to (Pastory & Marobhe, 2015) the world economic crunch of 2008 that originated in U.S.A and which is considered to be the worst crises since the great depression has proved that a sound and profitable banking sector is essential for the overall stability of any economy.

According to (Rao & Tekeste, 2012) the factors that determine the soundness and profitability of banks is bank specific, industry specific and country specific factors. Bank specific factor is internal factor that are under the control of the management and board of the banks but industry specific and country specific factors are beyond the control of the management and board.

Factors that affect the bank profits are internal and external or Macroeconomic factors perhaps on the context of our country almost all of empirical research that have been performed and reviewed for the consumption of this study gave much greater emphasis for internal factors as compared to Macroeconomic factors.

In contrary, the empirical studies that have been done in African countries such as in Kenya and Nigeria gave full attention to Macroeconomic factors on their empirical research to mention some (Illo, 2012) from Kenya studied the macroeconomic factors effect on commercial banks of Kenya by taking GDP, money supply, lending interest rate and inflation as explanatory variable.

Another empirical research is from Nigeria performed by (Baba & Nasieku, 2016) on the same topic as above research but performed on commercial Banks of Nigeria by taking real interest rate, unemployment rate and Exchange rate as explanatory variable these are the sample among many research performed.

In addition to this One basic question may be raised by anyone about why Ethiopia can take the finding of those empirical research of African countries for solving problems encountered in Ethiopia but it must be cleared that the macroeconomic environment on which these countries' banks operate are completely different to the country of ours because as (Fesseha & Abtewold, 2017) mentioned the aftermath of 2005 election made the government of Ethiopia to adopt developmental state economic model by taking as an example of fast growing countries of south Korea and Taiwan.

So this study will fill the literature gap by giving full attention to macroeconomic factors effect on financial performance of commercial banks in Ethiopia under the context of developmental state economic model.

Among many previous empirical research performed in Ethiopia there are few exceptions that give better attention to Macroeconomic factors such as (Belete, 2017) regressed ROA against GDP, lending rate and Exchange Rate and many Bank specific factors. (Dawit, 2017) also regressed ROA against GDP, money supply and Inflation rate together with many internal factors and finally (Samuel, 2015) found out the relationship between GDP, Exchange rate and Inflation Rate and Many internal factors on profitability of commercial banks.

Although the above empirical research considered some more Macroeconomic factors together with a great number of internal factors under the General title of Determinants of commercial bank profitability, there are still more Macroeconomic factors remain to be studied. So this paper will try to fill this gap by taking Six Macroeconomic factors such as GDP, exchange rate, real lending interest rate, inflation rate, Money supply and Unemployment rate as Explanatory variables.

1.4Objective of the Study

1.4.1 General Objective of the Study

The main objective of this study is to investigate the impact of Macroeconomic factors on the financial performance of commercial banks in Ethiopia.

1.4.2 Specific Objective of the Study

This study will address the following specific objectives.

1. To explore the impact of real GDP growth rate on banks' financial performance.
2. To determine the impact of inflation Rate on banks' financial performance.
3. To investigate the impact of real Lending Interest Rate on Banks' financial performance.
4. To investigate impact of foreign exchange rate on Banks' financial performance
5. To investigate the impact of percentage change of Money supply on Banks' financial performance.
6. To investigate the Impact of Unemployment rate on Banks' financial performance.

1.5 Significance of the Study

This study will be of value to different stakeholders including: scholars and Academicians, managers of commercial banks, National Bank of Ethiopia, government through its relevant agencies and the policy makers in Ethiopia. To scholars and academicians, this study will increase body of knowledge on the effect of macroeconomic variables on the performance of commercial banks in Ethiopia. It will also suggest areas for further research so that future scholars can pick up these areas and study further.

The study will be important to the government especially the Ministry of Finance and Economic development and the National bank of Ethiopia for making policy decisions whose overall objectives is to influence the level of economic activity and ensure a stable banking sector.

To managers of commercial banks, they may obtain useful input into their corporate decisions and strategies.

The policy makers in the banking business will find the study useful as a benchmark of policy formulation, which can be effectively implemented for better and easier regulation of the banking sector.

1.6 Hypotheses of the Study

the study will test the following hypothesis:

Hypothesis 1: *There is positive and significant effect between real GDP growth rate and* financial *performance of commercial banks.*

Hypothesis 2: *There is negative and significant effect between inflation Rate and financial* Performance *of commercial banks*

Hypothesis 3: *There is positive/negative and significant effect between Real Lending Interest Rate and financial performance of commercial banks.*

Hypothesis 4: *There is positive/negative and significant effect between Foreign exchange rate and Financial performance of commercial banks.*

Hypothesis 5: *There is positive and significant effect between percentage change of Money supply and commercial Banks financial performance.*

Hypothesis 6: *There is negative and significant effect between Unemployment rate and commercial Banks financial performance.*

1.7 Scope of the Study

The scope of the study limited to assess the impact of Macroeconomic factors on financial performance of commercial banks of Ethiopia By using panel data of ten years (2008-2017G.C) from audited financial statements of each commercial bank, annual reports of national banks of Ethiopia (NBE) and the WB data websites. Seven commercial Banks operating in Ethiopia have been selected using Non Probability purposive sampling using three criteria such as Banks having more than ten year experience, their proportion of capital as compared to all commercial banks Capital and their proportion of Branch network as compared to total branch network of all commercial banks. Based on these criteria the

following commercial banks selected as a sample for analysis Commercial bank of Ethiopia, Awash international bank S.C, Bank of Abyssinia, Dashen bank, Wegagen bank, United bank and Nib international bank selected based on the criteria of number of branch expansion and Capital . The study used two dependent and six independent variables i.e. the dependent variables are return on asset (ROA), return on equity (ROE) and Six independent variables are Real GDP growth rate (RGDP), Inflation Rate (IR), Real Lending Interest Rate (RLIR), Foreign Exchange Rate (FER), Percentage Change of Money supply(MS), and Unemployment rate(UR)

1.8 Limitations of the Study

A number of limitations could be pointed out for this study.

Firstly, this study is limited to formal financial institution that is commercial banks of Ethiopia and not informal financial institution.

Secondly, the sample size of seven commercial banks for the period of ten years would be considered small and other researchers could use a larger sample size.

Thirdly, there are many Macroeconomic factors that affect the financial performance of commercial banks in Ethiopia but this study will only concentrate only on six Major Macroeconomic factors (GDP, inflation, interest rate, exchange rate, Money supply and Unemployment rate).

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents the literature relevant to the study that would be organized into various sections: Theoretical review, Determinants of financial performance of commercial Banks, Empirical Review, conceptual frame work and summary of theoretical and empirical review

2.2 Theoretical Review

The section presents the main theories relevant to the study. These theories are: Modern Portfolio theory, Arbitrage pricing model and Efficient Market Hypothesis.

2.2.1 Modern portfolio theory

Portfolio theory explores how risk averse investor construct portfolio with optimal expected Return for a given level of Market risk. Out of a universe of risky asset an efficient frontier of optimal portfolio can be constructed and each portfolio on the efficient frontier offers the maximum possible expected return for a given level of Risk. Investors should hold one of the optimal portfolios on the efficient frontier and adjust their total Market risk by leveraging or deleveraging that portfolio with positions in the risk free asset.

Portfolio theory provides a broad context for understanding the interactions of systematic risk and reward. (Hiriyappa, 2008)

Macroeconomic variables affect the general business environment within an economy (Brueggeman & fisher, 2011).an environment of volatile macroeconomic variables such as volatile exchange rate or inflationary pressure, imply that return accruing to business and firms, Commercial Bank included, shall fluctuate. Uncertainty in returns then creeps in, thus higher risk. Also the financial performance of firms in such environments fluctuates. Bank management should thus be on the lookout for macroeconomic changes and adopt accordingly as quickly as possible (Pandey, 2009)

2.2.2 Arbitrage pricing theory

The expected rate of return of the financial asset is determined as linear function of a number of Macroeconomic factors or Market indicators, so that each factor has its own beta

coefficient, which measures the sensitivity of the expected rate of return for each of these factors. The resulting rate of return is used as the discount rate to calculate the price of the financial asset. Unlike CAPM which links the expected return with linear function with only systematic risk, the Arbitrage pricing theory reflects a linear Multifactor relationship.in addition to Systematic Risk there are several non-diversifiable risk factors that are macroeconomic in nature and affects all stock returns.

There is no theoretical framework in choosing the Macroeconomic factor or Market indicators to be included in APT model. But it allows researchers to choose the best available factors that explain the change in expected return without restrictions (Hiriyappa, 2008).

2.2.3 Efficient market hypothesis theory

According to (Malkiel, 2003) it was generally believed that securities market were extremely efficient in reflecting information about individual stock and about the stock market as a whole. The accepted view was that when information arises, the news spread quickly and is incorporated into the price of securities without delay. Thus neither analysis, which is the study of past stock prices in an attempt to produce future price nor even fundamental analysis, which is the analysis of financial information would enable investors to achieve return greater than those that could be obtained by holding a randomly selected portfolio of individual stock with comparable risk

According to (fama, 1970) according to the information reflected in the market prices there are three forms of efficiency: Weak form efficient, semi strong efficient and strong form efficient.

In weak form market efficiency current asset prices reflect all past prices and prices movements.in semi strong form of market efficiency, the currents asset prices reflect all publicly available information.

In strong form of market efficiency asset prices reflect all public and private information.

According to (Degutis & Novickyte, 2014)EMH remained a prominent theory until 90's.a number of empirical argument started to attack EMH theory. Many financial economists and Statistician begin to believe that psychological and behavioral (sentimental and expectation) elements play an important role in determining price of stock in market rather than fundamental factors.

Asset bubble are crises difficult to explain in efficient market. Sudden market crash happened on 1992, black Monday in 1987 are unsolved for supporter of EMH.

Researcher found statistically significant autocorrelations in stock returns. There are certain systematic pattern called anomalies observed by researches which are inconsistent to the EMH.

2.2.4 Structure - Conduct Performance Theory

Structure-Conduct-Performance model was the first framework applied in the research in order to investigate factors which influence bank performance. The main idea in this theory is that market "structure" (i.e. concentration level of the market) through "conduct" link determines the "performance" (profitability) of firm. Put it differently, markets with high concentration level induces firm to behave ("conduct") in a collusive way. As a result, "performance" of the firms grows up (Goddard, Molyneux & Wilson, 2004).

Initially, Structure-Conduct-Performance theory was widely used in the industrial organization literature with aim to explain the profitability of a firm. The idea that profits of firm are determined by concentration level of the market firstly was proposed by (Bain, 1951). Based on data of American manufacturing industry in period between 1936 and 1940 he showed that the profits of firms operating in the industry with significant level of concentration on the average are higher than of firms from industry with less degree of concentration.

One of the earliest tests of validity Structure-Conduct-Performance paradigm for banking market was performed by (Kaufman, 1966). In his research of Iowa banking market for 1959-1960 period the author found statistically significant positive but not strong relationship between concentration level of the market and performance of banks operating at this market. Also based on his empirical results, he suggested that relationship between market concentration and bank profitability is of non-linear form.

A theoretical attempt to explain this "weakness" was provided by (Demsetz, 1973). He stated that higher profits of banks are not due to their collusive behavior but because of high efficiency level, which, in turn, leads to larger market shares that banks possess. In other words, profitability of bank is determined not by the market concentration but by bank efficiency. Market share of the bank is assumed to be a measure of efficiency here.

2.2.5 Market-Power Hypotheses

A very important contribution to the structure-performance studies is the efficient structure hypothesis proposed by (Demsetz, 1973) and (Peltzman, 1977). The efficient structure paradigm suggests that market structure is determined by the efficiency of the operating firms. In explaining a profit-structure relationship, market-power (MP) hypotheses state that market power is the main variable that causes profitability to change. Concentrated markets often entail market imperfections that may result from collusion, facilitated by high concentration, or by (legislative) entry and exit barriers which are often present in banking as a result of strict regulation. Because of these imperfections, firms operate in a market that deviates from perfect competition, which enables them to exert influence on prices charged and/or paid. These firms achieve higher profits at the expense of their customers through their price setting.

The researchers who defend the efficient structure model criticize the traditional market power model since the relationship between market share, concentration and efficiency is excluded. In this alternative model, important profits are generated by large firms since the concentration is the product of efficiency. These profits are considered as an economic return and not as a return on monopoly. (Chortareas, Jesus & Claudia, 2009). Which market structure variable is the best proxy for market power and thus for market imperfections determines the difference between two main types of market-power hypotheses in this category: the structure conduct-performance hypothesis and the relative-market-power hypothesis (Katib, 2004). The structure conduct-performance (SCP) hypothesis assumes that market concentration is the best proxy for market power because more concentrated markets show larger market imperfections enabling all firms to set prices at levels less favorable to customers. Through market-wide price setting, each individual firm is able to improve its profitability (Samad, 2004). The relative market power (RMP) hypothesis asserts that only firms with large market shares and well-differentiated products have the power to set prices for their products and thus to earn supernormal profits. In this case there is no market-wide price setting, but only price setting by dominant firms. Firms with smaller market shares are forced to operate as if under perfect competition and are unable to earn the same supernormal profits. This implies that the firm-specific market share is the better proxy for market power and market imperfections. A third additional hypothesis, mainly used to explain the possible absence of a profit-structure relationship, is the so-termed quiet life (QL) hypothesis.

This special case of the market-power hypotheses argues that as firms have more market power, either through market share or concentration, the management becomes less focused on efficiency, since setting prices at more favorable levels can increase revenues. The quiet life hypothesis states that firms do increase revenues as a result of increased market power but, as a result of higher inefficiencies, do not show a superior profitability.

2.3 Financial performance of commercial banks

Financial performance denotes the percentage or degree of attainment of economic goals, objectives and or targets by the firm. Financial performance is specified as a stated point in time and refers to performance in a given time period (Mueni, 2016)

Financial performance of commercial banks is best measured using ratios such as return on asset, return on equity, net interest margin (Eakins & Mishkin, 2012).

Return on Equity (ROE): is the ratio of Net income before taxes divided by total equity Capital.it represents the rate of return earned on the funds invested in the bank by its stockholders. ROE reflects how effectively a bank management is using shareholders' funds. Thus, it can be deduced from the above statement that the better ROE the more effective the management in utilizing the shareholders capital (khrawish, 2011).

Rate of Return on Asset (ROA): Is also another major ratio that indicates the profitability of banks.it is the ratio of income to its total asset.it measures the ability of Banks to generate income by utilizing company assets at his disposal.in other words it showed how efficiently the resource of the company are used to generate the income.it further indicate the efficiency of the management of the company in generating net income from all the resource of the institution (khrawish, 2011).

Net interest Margin (NIM): is a measure of the difference between the interest income generated by banks and the amount of interest paid out to their lenders relative to the amount of their interest earning asset (khrawish, 2011).

In this research two model with dependent variables ROA & ROE and the same six Macroeconomic explanatory variables for both models have been used as a means to offset the weakness inherent within one model with the strength of other model which means triangulation.

According to (Crosswell, 2014) triangulation is happened when a research uses two different method in an attempt to Confirm, Cross-validate or corroborate finding within a single study.

2.4 Relationship between Macroeconomic factors and Financial Performance

Macroeconomic variables are anticipated to influence the business setting Brueggeman & fisher, 2011).these variables affected the nature and intensity of volatility of the operating environment. According to (Markowitz, 1952) the portfolio theory states that the investor will make decision on the risk-return tradeoff. Such investors tend to prefer more returns to less returns, they also favor less risk to higher risk. High volatility of variables in the Macroeconomic environment creates and foster an unstable and highly volatile environment. Risk thus becomes aggravated and in turn threaten return. Good and healthy financial performance then becomes uncertain.

2.5 Macroeconomic Determinants of Banks.

Although there are many Macroeconomic factors that affect financial performance of commercial banks this study selected the Six basic Macroeconomic factors these are: RGDP, inflation, interest rate, exchange rate, Money supply and Unemployment Rate

GDP: is a measure of the economic growth of the Country. GDP is the Market value of all final goods and services produced within a country in a given period of time. Intermediate Goods, items which produced and sold illicitly and items produced and consumed at home are excluded from finding GDP of a given country.

GDP increases as a result both the economy is producing a large output of goods and services or goods and services are being sold at higher prices. But economists want to calculate Real GDP which is calculated as though prices did not change from the base year. (Mankiw, 2003)

As far as impact of GDP on financial performance of commercial banks concerned the majority of finding of the studies that have been reviewed showed that there is positive relationship between GDP and Bank profit to mention some of these empirical research (Illo, 2012),(Mueni, 2016),(Otambo, 2016), (Belete, 2017),(Belayneh, 2011)etc.

These finding indicated that as the economy increased the demand for loan increased which in turn lead to profitability of banks.

According to (Illo, 2012) GDP and Profitability has a Positive and Significant association between economic growth and financial sector performance. This means that growth in the economy will lead to growth in demand and supply of funds from banks which in turn leads to higher profitability.

(Belete, 2017) found out that GDP and Profitability has Positive and Significant relationship. This means higher economic growth may lead to greater demand for new and potential interest bearing and other financial services that can easily translate to generate income to Banks.

According to (Tan & floros, 2012) GDP growth found to be significantly and negatively related to bank profitability in China. This result supports the view that high economic growth improves business environment and lower bank entry barrier. The consequently increased competitions dampens banks profitability.

Inflation: economists use the term inflation to describe a situation in which the economy's overall price level is rising. Inflation rate is the percentage change in price level from the previous period.

Inflation and inflation rate is calculated using consumer price index which is a measure of the overall cost of goods and services brought by a typical consumer. (Mankiw, 2003)

Based on the empirical research performed and reviewed majority of the finding showed that inflation has negative insignificant effect on financial performance of commercial banks for instance (Kiganda, 2014),(Helel, 2014),(Alper & Anbar, 2011),(Baba & Naiseku, 2016), (Dawit, 2017), (Samuel, 2015), (Tesfaye, 2013) etc..

Although the majority of the study indicated that inflation rate has insignificant effect on financial performance of commercial banks.

But according to (Illo, 2012) there is a positive significant relationship between Inflation and Profitability this implies that during the period under study the level of inflation were anticipated by Kenyan Banks this gave them the opportunity to adjust the interest rate accordingly and consequently to earn higher Profit.

Interest Rate: is the price a borrower pays for the use of money they borrow from a lender or financial institution and expressed as a percentage rate over the period of one year.

The nominal interest rate is the stated rate you pay on a loan or that a bank pays on a loan or that a bank pays on a deposit. But the Real interest rate is the Nominal rate adjusted for the change in purchasing power overtime, or inflation. (Mankiw, 2003) Among many studies that have been reviewed some of them showed that interest rate affect the financial performance or profitability of banks positively and their relationship is significant.to mention some of these studies (Illo, 2012), (Belete, 2017), (Kanwal & Nadeem, 2013), (Alpher & anbar, 2011) etc. And these finding implied that as inflation adjusted interest rate increase net interest income increases which in turn brings about profitability of banks to increase.

There are also another some studies with finding of real interest rate on lending affect financial performance of banks negatively and significantly those were (Baba & Nasieky, 2016), (simyu & Ngile, 2015).this finding implied that rise in interest rate could cause loan to be expensive thus reducing loan demand and eventually affecting interest revenue to banks.

(Belete, 2017) found that average lending rate has positive direct relationship with profitability and according to him higher interest income are not merely due to higher volume of loans and also higher interest income is dependent on lending rate.

(Simyu & Nigle, 2015) found out that real Lending Interest rate has a significant negative effect on profitability of banks this implies that the higher the prevailing interest rate, the most costly taking on debt and therefore the less likely business will be able to commit the funds to such projects.

Exchange rate: the exchange rate is the number of units of a given currency that can be purchased for one unit of another country's currency. The exchange rate tells the relative value of any two values. Countries have different policies concerning their currency exchange rate.in the floating exchange rate system, the currency's foreign exchange rate is allowed to fluctuate freely by supply and demand for the currency .In fixed exchange rate system the government intervene to offset changes in exchange rate caused by change in the currency's supply and demand. Managed floating exchange rate system which falls somewhere between the fixed and floating system. In the managed floating exchange rate system the currency's exchange rate are allowed to fluctuate in response to change in supply & demand, but the government may intervene to stabilized the exchange rate in the short run, avoiding short term wild fluctuation in exchange rate. The value of country's currency

depend on many factors including imports and exports and movements of capital from one country to another.

When a country losses value relative to other currencies we say that the currency has "depreciated" when it is determined by demand and supply and "devalued" when the government intervene the reverse is called "appreciated" and "revalued" (Fabozzi, 2009).An exchange rate is referred to us nominal exchange rate when inflation effects are embodied in the rate and as the real exchange rate when inflation influences have not been factored in the rate.

There are finding from a studies reviewed that exchange rate has positive and significant effect on profitability of commercial banks among the studies that showed this relationship were (simyu & ngile, 2015), (Belete, 2017), (Gemechu, 2016),(Mueni, 2016)

This implies that as the value of domestic currency against foreign currency decrease, it has a positive impact on export of the country. This help to boast up the export of the country and import become expensive.

There are also finding that exchange rate has negative and significant effect on banks profitability those are (Illo, 2012) & (Baba & Nasieku, 2016) Finally the studies performed by (Dawit, 2016) & (Samuel, 2015) showed that Real exchange rate have not significant effect on profitability of commercial banks.

(Simyu & Nigle, 2015) found that a unit increase in Kenya shilling against US dollar would lead to increase in profitability this implies that depreciation results in higher prices for imported goods, demand for domestic goods that competes with import increases this leads to increase in production which in turn leads to the performance of industry and supply of credit increase.

According to (Illo, 2012) found that foreign exchange rate has negative and significant effect on profitability possible reason for this could be that in many Kenyan commercial banks there was a deficit of foreign currency and do not earn service charges from foreign transaction like letter of credit (LC) and Cash against document (CAD).

Money Supply: is the amount of money in an economy at some point in time. The money supply of each country in the world is controlled by central bank of respective country. The

central banks alter the money supply primarily by changing the quality of reserve in the banking system through purchase and sale of government bond in open market operation.

When the central bank buys government bonds, the money it pays for the bond are typically deposited in banks, and these money are added to bank reserve. When the central bank sells the government bond, the dollar it receives for the bond are withdrawn from the banking system, and bank reserve fall.

In addition to these open market operations, the central bank can alter money supply by changing reserve requirement (the amount of reserve banks must hold against deposits) or the discount rate (the interest rate at which banks can borrow reserve from the federal) (Mankiw, 2003).

National bank of Ethiopia (NBE) has been targeting broad money supply in its policy decision. Broad money supply: Narrow money supply+Quasi money and Narrow money supply is equal to currency outside banks +demand deposit (net) and Quasi money is equal to saving deposits and time deposits (NBE, 2017). All of the studies that have been reviewed for the consumption of this study such as (Helhel, 2014),(Illo, 2017) and (Dawit, 2017) showed that money supply has positive and Significant effect on financial performance of commercial banks that means as money supply in the economy increased there will be enough money available to lend to generate revenue so that the banks will make profit.

According to (Illo, 2012) found that money supply as measured by Broad Money supply is positively correlated with profitability this implies that when central bank of Kenya increase money supply, household gets more money at his disposal and are therefore looking for investment opportunities. Money supply is basically determined by central bank policy, it could also affect behavior of Banks that means Banks saving deposit and demand deposit increases which increase the potential of banks to lend to customer and getting considerable profit.

Unemployment Rate: according to ILO is the best known labour Market measure and it is a useful measure of underutilization of labour supply.

It is an indicator of the efficiency of the economy to absorb its labour and the performance of the labour market that can be calculated by dividing number of unemployed person by total number of persons in the labour force.

As far as the finding of empirical literature (Baba & Nasieku, 2016) found that unemployment rate has a negative significant relationship with financial performance of commercial banks in Nigeria. This implied that an increase in unemployment rate is associated with poor performance of Commercial Banks.

(Ghurtskaia, 2018) on the other hand found out that macroeconomic factors including unemployment rate is insignificant.

2.6 Empirical Review

This section reviews foreign and local studies that have been previously done by various researchers and are related or are relevant to the research study.

2.6.1 Foreign Studies

(Ongore & kusa, 2013) investigated determinants of financial performance of commercial banks in Kenya. The study was based on data from year 2001-2010. In this study 37 commercial banks were considered. The explanatory variables were Capital adequacy, Asset quality, Management efficiency, and liquidity Management, GDP growth rate, inflation rate and moderating variable of foreign vs. domestic ownership and the financial performance of the bank was Proxy by return on asset (ROA), return on equity (ROE) and Net interest Margin (NIM).A multiple linear regression model was used to analyze the data and the final result showed that bank Specific factors significantly affect the performance of commercial banks in Kenya, except for Liquidity variable. But the overall effect of macroeconomic variables are inconclusive at 5% Significance level. The moderating role of ownership identity on the financial performance of Commercial banks was insignificant.

(Simyu & Ngile, 2015) studied the Effect of Macroeconomic variable on the profitability of Commercial Banks listed in Nairobi Securities Exchange for the year of 2001-2012. Panel data analysis using Fixed Effects model was applied on the data to examine the effects of three major macroeconomic variables which included: Gross Domestic Product (GDP), Exchange rates, and interest rates on profitability of the listed commercial banks. The study findings indicates that real GDP growth rate has positive but insignificant effect to profitability of commercial banks as measured through Return on Assets (ROA). Further, real interest rates have a significant negative influence on profitability of listed commercial banks

in Kenya. While the exchange rate has a positive significant effect on the profitability of listed commercial banks on Nairobi Securities Exchange.

The study of (kiganda, 2014) explored the effect of Macroeconomic factors on commercial banks of Kenya a case study of Equity bank Ltd. The Sample size consisted annual data spanning 5 years from 2008- 2012.the study employed OLS to establish the relationship between macroeconomic factors and bank profitability. The results indicates that macroeconomic factors such as real GDP, inflation and exchange rate have insignificant effect on bank profitability in Kenya with Equity bank in focus at 5% level of significance.

(Illo, 2012) Investigated the effect of macroeconomic factors on financial performance of commercial banks in Kenya. Return on Asset (ROA) was regressed against the macroeconomic variables including GDP growth rate, the Exchange rate (US dollar), the money supply (M3). Inflation (CPI) and Lending Rate of the sampled commercial banks. The study used ten years quarterly data from June 2002 to June 2012. The financial performance of commercial banks as measured by ROA is found to be positively correlated with GDP growth rate, money supply (M3), lending interest rate and inflation and negatively correlated with exchange rate.

(Mueni, 2016) studied the effect of macroeconomic variables on the financial performance of commercial banks in Kenya. The measure of financial performance used was return on assets (ROA) measured against the macroeconomic variables like inflation rate, foreign exchange rate gross domestic product (GDP), and lending rate while controlling for effect of asset quality, management efficiency and capital adequacy. A sample of twenty two commercial banks was drawn using stratified random sampling. Secondary data of sampled 22 commercial banks from 2011 to 2015 was used for the study. The findings of the study indicates that financial performance of commercial banks in Kenya has a strong positive correlation with changes in macroeconomic variables.

This research of (Otambo, 2016) was undertaken in order to determine the effect of macro-economic variables on financial performance of commercial banking sector in Kenya. The researcher run a descriptive as well as a correlational study on all the commercial banks in Kenya between January 2006 and December 2015. Return on assets was used to measure financial performance while quarterly interest rates, quarterly exchange rates (USD/KSH), quarterly GDP, and quarterly inflation rates were used. The results of the study indicates that

there is a strong relationship between macro-economic variables and financial performance of commercial banks. The study further established that Interest rates and Exchange rates affect financial performance of the commercial banking sector negatively while Inflation rates and GDP affect it positively.

This research performed by (Osamwonyi & Michael, 2014) investigated the impact of macroeconomic variables on profitability of banks in Nigeria from 1990-2013. Pooled Ordinary least method was used to determine the effect of three major factors; gross domestic product (GDP), interest rate (INTR) and inflation (INFR) on return on equity (ROE). The findings shows a significant positive relationship of gross domestic product (GDP) with return on equity (ROE). A significant negative relationship between interest rate with return on equity(ROE) and inflation rate has non-significant negative relationship with return on equity (ROE).

The analysis of the effect of Macroeconomic factors on financial performance of Commercial Banks in Nigeria was done by (Baba & Nasieku, 2016) This study used as a sample all the 23 licensed commercial banks operating in Nigeria in the study period from 2006-2015. The findings also indicates that unemployment rate, exchange rate and real interest rate have a negative significant relationship with financial performance of commercial banks in Nigeria while inflation has an insignificant relationship with financial performance.

The intended aim of the study of (Bilal, Saeed, Gull & Akram, 2013) was to identify the influence of bank specific and macroeconomic factors on profitability of commercial banks in Pakistan over the period of 2007 to 2011. Return on assets and return on equity were used as dependent variable. Inflation, real gross domestic product and industry production growth rate are macroeconomic factors. Researcher conclude industry production growth rate has positive and significant impact on the ROA and ROE. Inflation have negative significant impact on Return on assets while real gross domestic product has positive impact on ROA.

According to (kanwal & Nadeem, 2013) which investigated the impact of macroeconomic variables on profitability of public limited commercial banks in Pakistan for years 2001-2011. return on assets (ROA), return on equity (ROE) and equity multiplier (EM) ratios regressed against gross domestic product (GDP), inflation rate and real interest rate. The empirical findings indicates a strong positive relationship of real interest rate with ROA, ROE and EM. Secondly, real GDP is found to have an insignificant positive effect on ROA, but an

insignificant negative impact on ROE and EM. Inflation rate on the other hand, has a negative link with all 3 profitability measures.

The paper studied by (Saeed, 2014) investigated the impact of bank-specific, industry-specific, and macroeconomic variables on bank profitability before, during, and after the financial crisis of 2008. For this purpose, 73 UK commercial banks were selected on the basis of availability of required information. The empirical data for these banks were collected for the period from 2006 to 2012. The study concluded that GDP and inflation rate have negative impact on ROE and ROA.

(Helhel, 2014) investigated the impact of bank-specific and macroeconomic determinants on profitability of 14 private and commercial banks in Georgia for 2009-2013 period by panel data Analysis. Return on asset (ROA), return on equity (ROE) and net interest margin (NIM) were employed. The results indicates money supply (M2), has positive significant impact at 10% significance level inflation rate has insignificant impact on profitability.

(Alper & Anbar, 2011) investigated the bank-specific and macroeconomic determinants of the Banks profitability in Turkey over the time period from 2002 to 2010. The bank profitability is measured by return on assets (ROA) and return on equity (ROE) as a function of bank-specific and macroeconomic determinants. Using a balanced panel data set, the results shows macroeconomic variables of annual real GDP growth, Annual inflation rate and Real Interest Rate only the real interest rate affects the performance of banks positively.

According to the study entitled the bank-specific and macroeconomic determinants impact on commercial banks of Asian countries that has been performed by (Ashraf, Haider & Sarwar, 2016). Panel data were collected from bank's financial statements of different Asian countries which cover period from 2008-to-2015.The results of this study shows that Annual GDP growth rate and Inflation, influence negatively on banks profitability.

(Sheefeni, 2015) investigated the macroeconomic determinants for commercial bank's profitability in Namibia. The study employed quarterly data covering the period 2001 to 2014. The results reveals that the variables gross domestic product, inflation rate and interest rate do not significantly influence commercial bank's profitability in Namibia.

(Gee, Hwel, Qi,Mum & Han, 2015) examined the effect of bank-specific and macroeconomic determinants on commercial banks profitability in Malaysia during 2004-2013. This study

focused on the five local commercial banks. Gross domestic product and interest rate spread are significant influencing banking profitability. However, inflation is insignificant in explaining banking profitability.

(Jegadeeshwaran & Priya, 2016) investigated the impact of Macroeconomic factors affecting the performance of Indian scheduled commercial Banks. The objective of the study was to analyze the effect of macroeconomic factors such as Foreign Direct Investment (FDI), Gross Domestic Product (GDP), Exports, Foreign Exchange Reserves (FER), Stock Market Turnover (STV), Inflation rate (INFR) and Real Interest Rate (RIR) on Deposits, Advances & Net Profit of commercial banks. Ordinary least square was used to find the significant relationship among macroeconomic indicators and performance of commercial banks during the study period from 2006 to 2015. On the basis Foreign Direct Investment, Gross Domestic Product, Stock market Turnover, Exports and Real Interest Rate are relatively more significant and likely to influence the performance of commercial banks in India.

(Ghurtskaia, 2018) performed a research on the title of Macroeconomic determinants of bank profitability: evidence from Georgia by taking data from 2003-2017 and regressed ROA with GDP, inflation, Unemployment, foreign direct investment and Exchange rate and found out that all these Macroeconomic factors have insignificant effect on banks profit.

2.6.2 Local Studies

(Belete, 2017) investigated determinants of private commercial banks profitability in Ethiopia by using panel data of six private commercial banks from year 2002 to 2016.secondary financial data were analyzed by using multiple linear regressions model. The empirical results shows that macroeconomic factors; level of GDP, and lending rate and exchange rate have a positive and strong influence on the profitability of private commercial banks in Ethiopia.

(Dawit, 2017) undertook a research entitled Determinants of Commercial Banks of Ethiopia Profitability. Six private commercial banks have been the subject for the study ranging from 2004/2005 to 2014/2015. The empirical results shows that money supply have significant relationship with profitability of Ethiopian private commercial banks. However the result shows insignificant relationship between profitability of Ethiopian private commercial banks with GDP and inflation.

As (Dawit, 2016) study examined the determinants of financial performance of commercial banks in Ethiopia by using panel data of seven sample commercial banks over the period 2000-2014. Under this study, both internal and external factors were included. The external factor is foreign exchange rate. Moreover, ROA, ROE and NIM were used to measure the financial performance. Based on the regression result foreign exchange rate is not significant.

As (Samuel, 2015) investigated determinants of commercial banks profitability in Ethiopia by using panel data of eight commercial banks from year 2002 to 2013. The study used mixed research approach and secondary financial data are analyzed by using multiple linear regressions models for the bank profitability measure, Return on Asset (ROA). The findings of the study shows that and gross domestic product have statistically significant and positive relationship with bank's profitability. On the other hand, Inflation and foreign exchange rate is found to be statistically insignificant.

The study that has been carried out by (Tesfaye, 2013) empirically explored the bank specific, industry specific and macroeconomic determinants of Ethiopian commercial banks' performance using unbalanced 10 years (2003-2012) annual audited financial statements of 16 banks and macroeconomic data. It covers 100% of the population (commercial banks in Ethiopia) which are operating full years in the study period. The study used three indicators of profitability as dependent variables: Return on Asset (ROA), Return on Equity (ROE) and Net Interest Margin (NIM). All macroeconomic factors of GDP and Annual inflation rate is not significant on all financial performance measure.

According (Moges, 2017) The main objective of the paper is to analyze the impact of bank specific and macro-economic factors on the profitability of selected Ethiopian private commercial banks over the period of 2005 to 2014. The study used both return on asset (ROA) and return on equity (ROE) as a measurement for banks profitability. The panel econometrics result shows that, GDP growth rate has a positive and significant impact on private commercial banks ROA and ROE. While, interest rate spread has a negative and significant impact. Inflation also an important variable in explaining ROA at 10% significant level but, it has no effect on ROE.

(Gemechu, 2016) the effect of bank-specific, industry-specific and macroeconomic determinants on banks' profitability in Ethiopia. The study applied balanced panel data of eight Ethiopian commercial banks that covered the period of 2002 - 2012. The paper used

ordinary least square (OLS) technique to see the impact of determinants on profitability of Ethiopian commercial banks. The findings of the study shows that all macroeconomic determinants in this study like economic growth, interest rate spread and exchange rate have statistically significant and positive relationship with banks' profitability.

As (Tesfaye, 2014) investigated the determinants of Ethiopian banks performance considering bank specific and external variables on selected banks' profitability for the 1990-2012 periods. Return on Assets (ROA) to represent Banks' performance. The study finds that bank specific variables by large explain the variation in profitability. Macro-economic variables such real GDP growth rates has no significant impact on banks' profitability. However, the inflation rate is determined to be significant driver to the performance of the Ethiopian commercial banks

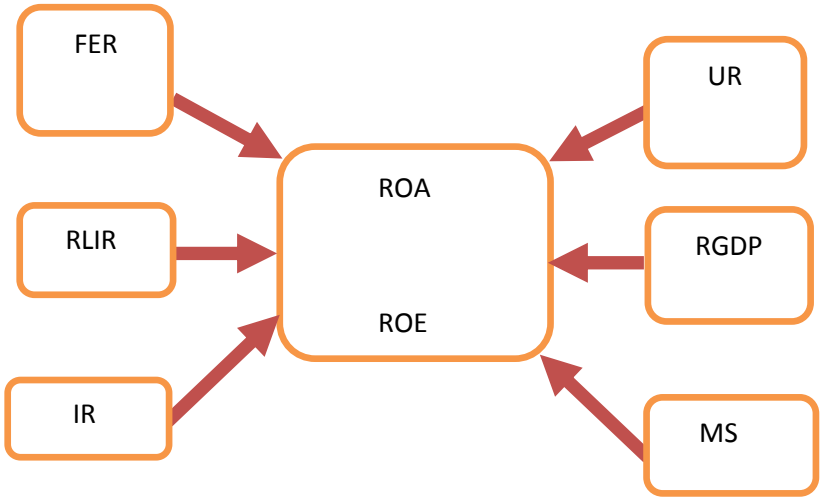
(Bekalu & Abel, 2017) In this study the main objective of the research is to analyze the determinants of profitability in case of selected private commercial banks of Ethiopia. Panel data were used to examine the bank-specific, industry-specific and macro-economic factors affecting bank profitability for six selected private commercial banks from the period 2001 to 2011. The regression result suggests that gross domestic product have positive coefficient and statically significant impact on banks' profitability measured by ROA. Inflation has shown a negative coefficient but, statically insignificant

(Belayneh, 2011) The aim of this study was to examine the impact of bank-specific, industry specific and macroeconomic determinants of Ethiopian commercial banks profitability. The study applied the balanced panel data of seven Ethiopian commercial banks that covers the period 2001- 2010. The estimation results showed only economic growth exhibits a significant relationship with banks' profitability but inflation is insignificant.

(Amdemichael, 2012) This study examined the bank-specific, industry-specific and macro-economic factors affecting bank profitability for a total of eight commercial banks in Ethiopia, covering the period of 2000-2011. The study adopted a mixed methods research approach by combining documentary analysis and in-depth interviews. The findings of the study showed that gross domestic product have statistically significant and positive relationship with banks' profitability. On the other hand, inflation is found to be statistically insignificant.

2.7 Conceptual Framework

Fig 2.1 Macroeconomic factors vs. financial performance of banks



Source: self –Extracted

2.8 Summary of Literature Review &Knowledge Gap

This chapter has presented and discussed the relevant literature that shall guide the proposed research study. The chapter has begun with an introduction then theoretical review was made. Three main theories relevant to the study have been discussed. And also Basic Macroeconomic determinants of bank financial performance, as well as the empirical studies (both local and foreign), have been discussed. The conceptual framework has also been presented and the chapter ended with this summary.

No matter how Profitability of commercial banks are affected by both internal and Macroeconomic factors, less attention have been given for the macroeconomic factors effect on financial performance of banks in Ethiopia.

Conversely, there are many empirical Research that gave full attention on Macroeconomic factors effect on financial performance of commercial banks in countries of Africa such as in Kenya and Nigeria to mention some (Illo, 2012) from Kenya studied the macroeconomic factors effect on commercial banks of Kenya by taking GDP, money supply, lending interest rate and inflation as explanatory variable.

Another empirical research is from Nigeria performed by (Baba & Nasieku, 2016) on the same topic as above research but on commercial Banks of Nigeria by taking real interest rate,

unemployment rate and Exchange rate as explanatory variable these are the sample among many research performed.

So this study will fill the literature gap by giving full attention to macroeconomic factors effect on financial performance of commercial banks in Ethiopia under the context of developmental state economic model.

There are some exceptional empirical research among Many previous empirical research that gave better attention to Macroeconomic factors effect on profitability of commercial banks in addition to a great number of internal or Bank specific factors such as (Belete, 2017) regressed ROA against GDP, lending rate and Exchange rate as explanatory variable in addition to many internal factors, (Dawit, 2017) also regressed ROA against GDP, money supply and Inflation rate together with many internal factors and finally (Samuel, 2015) found out the relationship profitability and GDP, Exchange rate and Inflation and internal factors.

Although these Exceptional empirical studies took a bold step to include some more additional Macroeconomic factors on their studies as compared to many previous empirical research that gave less attention to these macroeconomic factors, there are still many Macroeconomic factors left to be studied by other study. So this paper will try to fill this gap by taking Six Macroeconomic factors such as GDP, exchange rate, real lending interest rate, inflation rate, Money supply and Unemployment rate as Explanatory variables.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discussed in detail the research methodology that has been followed when conducting the research study. It detailed the research design that was used, population and sampling, data collection as well as the data analysis methods and diagnostic test that have been undertaken.

3.2 Research Design

This research adopted explanatory type of research Design. This type of research design helps to identify and evaluate the casual relationship between different variables under consideration (Creswell, 2014). Moreover, explanatory research design would be employed to examine the relationship of dependent and independent variables. The study employed quantitative research approach by using secondary data that has been gathered from NBE annual report, the World Bank data website and each respective commercial banks audited financial statements. According to (Guajarati, 2004) if the number of time series data T is large than cross-sectional units the value estimated by Fixed effects model (FEM) and Random effect Model (REM) has little difference so the choice will be depend on computational convienience.so on this case Fixed Effect Model have been preferred because T=10 and N=7.The researcher selected six major macroeconomic factors that affect financial performance of commercial banks in Ethiopia. These factors are Real GDP growth rate, Inflation rate, foreign exchange rate, Real lending interest rate, percentage change in Money supply and Unemployment rate

3.3 Population and Sampling Design

As of June 2018, Ethiopian Commercial Banking system consisted of 17 banks. Out of this seven banks; commercial banks of Ethiopia, Awash Bank, Dashen Bank, Bank of Abyssinia, Wegagen Bank, United Bank, Nib Bank has been taken as a sample using non probability purposive sampling method by taking into consideration three criteria.one is the researcher believes that 10 years of data is sufficient for the research accordingly banks that have established after 2008 were excluded from the sample. Secondly according to (NBE, 2017) these seven banks jointly contributed 85% share of total capital of commercial banks and

finally based on their branch network the proportion of these seven banks branch network was 69% from the total branch network of commercial banks. So the list of sampled commercial banks that have been selected based on the above criteria were shown below.

According to (Kothari, 2004) good sampling design should be viable if it take Time and funds available for research and Purposive sampling offers the researcher to deliberately select items for the sample based on the selection criteria set by the researcher.

So the researcher used Branch network proportion and capital proportion as compared to total branch network and total capital respectively as criteria and the researcher believed that these criteria may represent market share of the Banking Industry.

Table 3:1 List of Sampled commercial Banks as of June 30, 2017

(branch in Number and Capital in Millions of Birr)

S/No	Name of The Bank	Years of Establishment	ownership	capital	No of Branches
1	Commercial Bank of Ethiopia	1942	Public	42,579.60	1310
2	Awash International Bank S.C	1994	Private	3,807.60	339
3	Dashen Bank S.C	1995	Private	3,420.90	315
4	Abyssinia Bank	1996	Private	2,371.00	253
5	Wegagen Bank	1996	Private	2,824.50	223
6	United Bank	1998	Private	2,221.00	204
7	Nib international Bank	1999	Private	2,570.20	203

Source:NBE 2016/2017

3.4 Method of Data Collection and Source of Data

In order to carry out any research activity, information should be gathered from proper sources. This study used only secondary data. The researcher used financial data of 10 years from secondary sources mainly from annual published audited financial statements report of

each sample banks. The data gathering process focused on elements of the balance sheet and income statement accounts. The researcher used National Bank annual report, the World Bank data website, for all these basic Macroeconomic factors data.

3.5 Data Analysis

The data that has been collected was sorted and cleaned. Then the data has been analyzed using econometric software (E-views 8). A multiple linear regression model has been used to determine the relative importance (sensitivity) of each explanatory variable in affecting the performance of banks.

To achieve the broad research objective, the paper primarily based on panel data, which has been collected through structured document review. Thus, the collected panel data has been analyzed using descriptive statistics and multiple linear regression analysis. Mean values and standard deviations have been used to analyze the general trends of the data from 2008 to 2017 based on the sector sample of 7 commercial banks. For this study, the regression analysis known as OLS has been used to estimate the relationship between financial performance as measured by ROA and ROE and its Macroeconomic factors. The multiple linear regressions model have been run, and thus OLS has been conducted using E-views 8 econometric software package, to test the casual relationship between financial performance and their potential macroeconomic factors and to determine the most significant and influential explanatory variables affecting the financial performance of commercial banks of Ethiopia. Besides, the data has been tested using test of normality, white test of Hetroscedasticity, DW test of autocorrelation, Mulitcollinerity and Test of model specification to achieve the objective of the study.

3.6 Model specification

In this thesis the researcher used Multiple linear regression model to analysis the relationship between financial performance of commercial banks in Ethiopia with Macroeconomic factors such as Real GDP growth rate (RGDP), inflation rate (IR), real lending interest rate (RLIR), Foreign Exchange rate (FER), percentage change in Money supply (MS) and Unemployment rate (UR) which has been developed for this research.

$ROA_{it=}\beta o+\beta_1 RGDPit_{+}\beta_2 IRit+\beta_3 RLIR_{it}+\beta_4 FER_{it}+\beta_5 MS_{it}+\beta_6 UR_{it}+\varepsilon_{it}$……. (1)

$ROE_{it=}\ \beta o+\beta_1 RGDPit_{+}\beta_2 IRit+\beta_3 RLIR_{it}+\beta_4 FERI_{it}+\ \beta_5 MS_{it}+\ \beta_6 UR_{it}+\varepsilon_{it}$…… (2)

Source: Developed for the research

Where: i=1,2,3…7 and t=1,2,3…10

ROA_{it}=Return on Asset of Bank i at time t

ROE_{it}=Return on Equity of Bank I at time t

$\beta o_{=}$intercept

$\beta 1$- $\beta 5_{=}$coefficient parameter

$RGDP_{it=}$Real GDP growth rate of Bank i at time t

$IR_{it=}$Annual inflation rate for Bank i at time t

$RLIR_{it}$=Real Lending Interest rate of Bank i at time t

$FER_{it=}$Foreign Exchange Rate of Bank i at time t

$MS_{it=}$Money supply of bank i at time t

UR_{it}=Unemployment rate I at time t

ε_{it} =Error term where i is cross sectional and t time identifier

CHAPTER FOUR

4. Data Analysis and Presentation

This chapter deals with the analysis and presentation of the result of the study. The data were analyzed by using E-views 8.the descriptive statistics was discussed followed by diagnostic test to check whether Classical Linear Regression Model assumption is fulfilled or not. The econometrics analysis and discussion of the main finding of the study were presented. Finally the result of the regression analysis was discussed by evidence of empirical studies.

4.1. Descriptive Statistics

This section presents the descriptive statistics of dependent and independent variables used in the study for the sample banks. The dependent variable used in the study were ROA and ROE and the independent variables Inflation rate, Real Gross Domestic Product, Foreign Exchange Rate, Real Lending Interest Rate, percentage change of Money Supply and Unemployment rate. The total observation for each dependent and independent variable were 70(seven banks for 10 years).Table 4.1 demonstrated the Mean, Standard Deviation, Minimum and Maximum Values of dependent and independent variables for sampled banks of panel data from 2008-2017.

The ROA measured by NIBT divided by TA has a mean value of 3.8 percent. This indicated that the sampled banks on average earned. This showed that the sampled bank profit before tax is 3.83 percent of the total asset. Since ROA measures the efficiency of the management in generating profit by using all assets of institution, higher value of ROA indicates that the management is efficient in using its resources. The maximum and Minimum value of ROA were 5.68 and 2.23.this means that most profitable and least profitable banks earned 5.68 and 2.23 cents per one birr of investment on asset respectively.

The ROE measured by dividing NIBT divided by Total capital has a mean of 33.02 percent. This means that the banks got 33.2 percent of each birr invested in. this shows that the banks have relatively good performance measured by ROE as compared to ROA. The maximum and minimum value of 70.3 and 17.1 respectively. This means that most profitable and least profitable banks earned 70.3 and 17.1 cents per one birr of investment.

Regarding the independent variables, the Inflation Rate has a mean value of 16.11 with a maximum and minimum value of 44.4 and 7.3 percent respectively. The 2nd independent variable used in the study was Money supply has a mean value of 26.16 with a Maximum and

minimum value of 39.20 and 19.90 present respectively. The 3rd independent variable used in the study was Foreign exchange rate which has a mean value of 17.29 with a maximum and minimum value of 23.22 and 9.07 present respectively. The 4th independent variable used in the study was Real Lending Interest Rate has a mean value of 3.48 with a maximum and minimum value of 5.22 and 1.43 present respectively. The 5th independent variable used in the study was Real Gross domestic product has a mean value of 10.20 with a maximum and minimum value of 11.40 and 8.70 percent respectively.

The 6_{th} independent variable used in the study was Unemployment Rate It has a mean value of 5.13 with a maximum and minimum value of 5.30 and 5.00 percent respectively.

Table 4.1 Summary of Descriptive Statistics

Variable		Observation	Mean	Maximum	Minimum	Standard Deviation
Dependent	ROA	70	0.0383	0.0568	0.0223	0.0079
	ROE	70	0.3302	0.7031	0.1705	0.1216
Independent	IR		0.1611	0.4440	0.0730	0.1262
	MS		0.2616	0.3920	0.1990	0.0551
	FER		17.29	23.22	9.07	4.44
	RLIR		0.0348	0.0522	0.0143	0.0096
	RGDP		0.1020	0.1140	0.0870	0.0086
	UE		0.0513	0.0530	0.0500	0.0010

Source: computed from E-views 8

4.2 The Classical Linear Regression Model Assumption & Diagnostic test

According to (Brooks, 2008), there are basic assumptions required to show that the estimation technique, OLS, had a number of desirable properties, if the Classical Linear Regression Model (CLRM) assumptions hold true, then the estimators determined by OLS will have a number of desirable properties, and are known as Best Linear Unbiased Estimators (BLUE). Hence, the following sections discuss results of the diagnostic tests (i.e., heteroscedasticity, autocorrelation, multicollinearity, normality) that were conducted to ensure whether the data fits the basic assumptions of classical linear regression model or not.

The implication of the test, decision rules therein, test results and their discussion are discussed in the upcoming sub sections.

4.2.1 Heteroscedasticity test

The homoscedasticity is one of the assumptions of the CLRM which states that the variance of the errors must be constant. If the errors do not have a constant variance, they are said to be heteroscedastic (Brooks, 2008) and as a result the OLS estimators are no longer BEST and error variances are incorrect, therefore the hypothesis testing, standard error and confident level will be invalid. A white test has been made, to ensure that this assumption is not violated. The

Hypothesis for the heteroscedasticity test was formulated as follow;

H_0=There is no heteroscedasticity problem

H_1=There is heteroscedasticity problem

A=0.05

Table 4.2: Heteroskedasticity Test for ROA

Heteroskedasticity Test: White

F-statistic	1.388206	Prob. F(10,59)	0.2082
Obs*R-squared	13.33311	Prob. Chi-Square(10)	0.2056
Scaled explained SS	6.478216	Prob. Chi-Square(10)	0.7736

Source: computed from e-views 8

Table 4.3: Heteroskedasticity Test for ROE

F-statistic	0.635453	Prob. F(13,56)	0.8139
Obs*R-squared	8.998671	Prob. Chi-Square(13)	0.7730
Scaled explained SS	6.575347	Prob. Chi-Square(13)	0.9227

Source: computed from e-views 8

Accordingly, table 4.2 and 4.3 shows that both the F-statistic and chi-square (χ 2) test give the same conclusion that there is no significant evidence for the presence of Heteroscedasticity in ROA, ROE models. Since the p-values in all of the cases were above 0.05, that shows that there is no evidence for the presence of the heteroscedasticity.

4.2.2. Multicollinearity test

According to (Brooks, 2008), multicollinearity will occur if some or all of the independent variables are highly correlated with one another. It shows the regression model has difficulty in explaining which independent variables are affecting the dependent variable. If multicollinearity problem is too serious in a model, either additional important variable should be added or unimportant independent variable should be dropped. Usually, as noted by (Brook, 2008) correlation coefficient below 0.8 may not cause serious multicollinearity problem, in this study there is no correlation coefficient that exceeds 0.8. Accordingly, in this study there is no problem of multicollinearity which enhanced the reliability for regression analysis.

Table 4.4: Multicollinearity Test

	IN	**MS**	**FER**	**RLIR**	**RGDP**	**UE**
IN	1.000000	0.275593	0.683538	-0.1492	0.419005	0.592061
MS	0.275593	1.000000	-0.10669	-0.30272	0.335291	0.045824
FER	-0.52111	0.228691	1.000000	-0.07874	-0.28371	-0.62724
RLIR	-0.1492	-0.30272	-0.35642	1.000000	-0.17479	0.423027
RGDP	0.419005	0.335291	0.148713	-0.17479	1.000000	0.452340
UR	0.592061	0.045824	0.166182	0.423027	0.452340	1.000000

Source: computed from E-views 8

4.2.3 Normality test

According to (Brooks, 2008) in order to conduct hypothesis test about the model parameter, the normality assumption must be fulfilled. The normality assumption is about the mean of the residuals is zero. In this study, the normality of the data was checked with the popular Bera- Jarque test statistic (Brooks, 2008). (Brooks, 2008) Noted that the Jarque-Bera statistic will not be significant for disturbance to be normally distributed around the mean. The hypothesis for the normality test was formulated as follow:

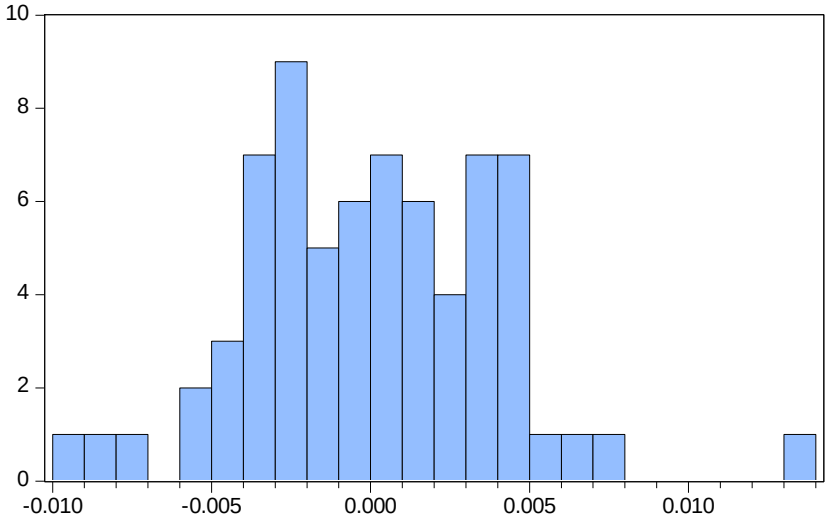
H0: Error term is normally distributed

H1: Error term is not normally distributed

$\alpha = 0.05$

Decision Rule: Reject H0 if P value of JB less than significant level 0.05. Otherwise, do not reject H0.

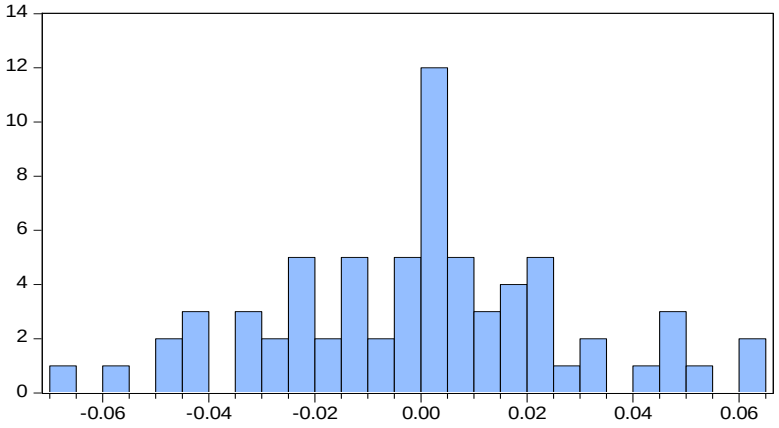
Figure 4.1: Normality Test for ROA



Series: Standardized Residuals	
Sample 2008 2017	
Observations 70	
Mean	4.96e-20
Median	-1.45e-05
Maximum	0.013695
Minimum	-0.009464
Std. Dev.	0.003956
Skewness	0.329076
Kurtosis	3.964116
Jarque-Bera	3.974496
Probability	0.137072

Source: computed from e-view 8

Figure 4.2: Normality test for ROE



Series: Standardized Residuals	
Sample 2008 2017	
Observations 70	
Mean	-7.93e-19
Median	-4.86e-17
Maximum	0.063287
Minimum	-0.068298
Std. Dev.	0.027999
Skewness	0.053466
Kurtosis	2.911699
Jarque-Bera	0.056092
Probability	0.972344

Source: computed from E-views 8

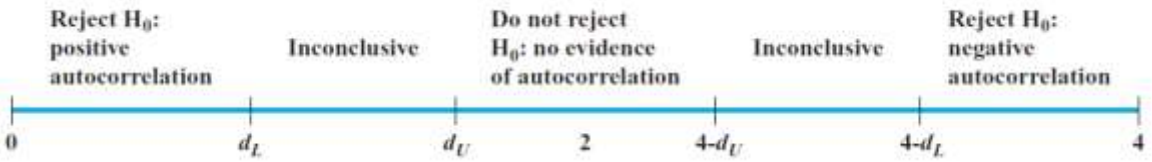
As shown in figure 4.1, 4.2 the histogram is bell-shaped and the Bera-Jarque statistic is not significant. This means that the p-value given at the bottom of the normality test screen should be bigger than 0.05 to not reject the null of normality at the 5% level so, the residuals are normally distributed in this study, concluded that there is no the problem of normality on ROA and ROE Model.

4.2.4 Testing for Serial Correlation

According to (Brooks, 2008), assumption three said that the CLRM‟s disturbance terms are the covariance between the error terms over time (or cross-sectional, for that type of data) is Zero. In other words, it is assumed that the errors are uncorrelated with one another. In

addition. He said that if the errors are not uncorrelated with one another, it would be stated that they are "Auto correlated" or that they are "serially correlated". To test this assumption the Durbin– Watson (DW) statistical test was applied. The test for autocorrelation was made by using Durbin and Watson. Durbin Watson (DW) is a Test for first order autocorrelation, i.e. it tests only for a relationship between an error and its immediately previous value. DW is approximately equals to $2(1 - \hat{\rho})$, where $\hat{\rho}$ is the estimated correlation coefficient between the error term and its first order lag (Brooks, 2008). The null hypothesis for the DW test is no autocorrelation between the error term and its lag. According to (Brooks, 2008), DW has 2 critical values: an upper critical value (dU) and a lower critical value (dL), and there is also an intermediate region where the null hypothesis of no autocorrelation can neither be rejected nor not rejected. The rejection, non-rejection, and inconclusive regions are shown on the number line in figure below.

Figure 4.3: Rejection and Non-Rejection Regions for DW Test



Source: Adopted from (Brook, 2008)

The study used the dL and dU values for 70 observations. As per the DW table for 70 observations with 6 explanatory variables at 1% level of significance, the dL and dU values are 1.283 and 1.645 respectively. According to The Durbin-Watson test statistic value in table 4.5 The DW value of ROA & ROE lies in non-rejection region. So according to table 4.5 below ROA & ROE model were not correlated where the null hypothesis of no autocorrelation can be accepted.

Table 4.5: Autocorrelation test: Durbin Watson

Variable	DW Test Statistics	
	ROA	ROE
Macroeconomics	1.846	1.960

Source: computed from E-views 8

4.2.5 Testing for Choosing Random effect (RE) versus fixed effect (FE) models

Because, there are broadly two classes of panel data estimator approaches that can be employed in empirical research: fixed effects models and random effects models. This also requires the high concern when the researcher employed the panel data approaches.

According to (Gujarati, 2004), if T (the number of time series data) is large and N (the number of Cross-sectional units) is small, there is likely to be little difference in the values of the parameters estimated by fixed effect model (FEM) and random effect model (REM). Hence the choice here is based on computational convenience. Based on these fact, FEM have been preferred for this study because the number of time series (i.e. 10 year) is greater than the number of cross-sectional units (i.e. 7 commercial banks).

4.3. Regression analysis

This section presents the overall results of the regression analysis on the Macroeconomic factors that affect financial performance of commercial banks in Ethiopia.

In this study ROA, ROE was used as proxy for performance measure. The regression analysis result is presented by using separate table for each model.

Table 4.6 shows the regression analysis for ROA. In this regression analysis the dependent variable is ROA while the independent variables are IR, MS, FER, RLIR, RGDP and UE. Besides, table 4.7 shows the result of the regression analysis for ROE. In this model the dependent variable was ROE, while IR, MS, FER, RLIR, RGDP and UE were the independent variables.

4.3.1 Regression result of model specification I

Table 4.6: Model regressed using ROA as a proxy of financial performance

Dependent Variable: ROA
Method: Panel Least Squares
Date: 01/09/19 Time: 23:12
Sample: 2008 2017
Periods included: 10
Cross-sections included: 7
Total panel (balanced) observations: 70

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IR	0.017243	0.006943	2.483500	0.0162
MS	0.050145	0.013315	3.765969	0.0004
FER	-0.001089	0.000196	-5.563756	0.0000
RGDP	-0.156641	0.086862	-1.803330	0.0770
RLIR	0.047800	0.087803	0.544401	0.5884
UR	-2.631882	1.143671	-2.301258	0.0253
WB2009DUM	0.009488	0.005141	1.845493	0.0706
WB2010DUM	0.014902	0.005101	2.921655	0.0051
WB2011DUM	0.011657	0.005177	2.251961	0.0285
WB2012DUM	0.009967	0.005231	1.905372	0.0622
C	0.189893	0.053699	3.536226	0.0009

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.747475	Mean dependent var	0.038287
Adjusted R-squared	0.671241	S.D. dependent var	0.007872
S.E. of regression	0.004514	Akaike info criterion	-7.755910
Sum squared resid	0.001080	Schwarz criterion	-7.209847
Log likelihood	288.4569	Hannan-Quinn criter.	-7.539007
F-statistic	9.804992	Durbin-Watson stat	1.846202
Prob(F-statistic)	0.000000		

The R-squared and Adjusted R-squared values of 0.75 and 0.67 respectively are an indication that the model is a good fit. This means more than 67% of variations in return on asset of Ethiopian commercial banks were explained by independent variables included in the model. However, the remaining 33% changes in return on asset of Ethiopian commercial banks are caused by other factors that are not included in the model. Furthermore, the F-statistic was 9.80 and the probability of not rejecting the null hypothesis that there is no statistically

significant relationship existing between the dependent variable (ROA) and the independent variables, is 0.000000 indicates that the overall model is highly significant at 1% and that all the independent variables are jointly significant in causing variation in return on asset.

The panel fixed effect estimation regression result in the above table 4.6 shows that, coefficient intercept (β_0) is 0.189 This means, when all explanatory variables took a value of zero, the average value ROA would be take 0.189 unit and statistically significant at 1% level of significance.

Inflation Rate (IR) and Return on Asset (ROA)

As the above fixed effect regression output table 4.6 presented that, the coefficient of Inflation rate (IR) is 0.017243 and its P-value is 0.0162.Holding other independent variables constant at their average value, when on Average Inflation Rate (IR) increase by one percent, return on asset (ROA) of sampled Ethiopian commercial banks will increase by 1.72% and statistically significant at 5% significant level. Therefore, the researcher rejects the null hypothesis that Inflation Rate has a negative significant Relationship to ROA. This means, there is no sufficient evidence to support the negative significant relationship between ROA and IR.

This finding is consistent with previous studies with (Illo, 2012), (Otambo, 2016), (Tesfaye, 2014), (Mueni, 2016) According to those researchers the level of Inflation were anticipated by those commercial banks this gave them the opportunity to adjust the Interest rate accordingly and consequently to earn higher profit.

Money Supply (MS) and Return on Asset (ROA)

Table 4.6 above depicted that, the coefficient of Money Supply (MS**)** 0.050145 and its P-value is 0.0004. Holding other independent variables constant at their average value, when on average Money Supply (MS) increased by one percent, return on asset (ROA) of sampled Ethiopian commercial banks would be increased by 5%, but statistically significant at 1% of significance level. In other words, there is significant positive relationship between Money Supply (MS) and return on asset (ROA) of sampled Ethiopian commercial banks. Therefore, the researcher do not rejects the null hypothesis that there is significant & positive relationship between MS and ROA. This means, there is sufficient evidence to support the positive & significant relationship between MS and ROA.

The result is consistent with the findings of (Illo, 2012) and (Helhel, 2014) and (Dawit, 2017) all of these researchers found that Money supply has positive and significant relationship with ROA.

The possible reason for significant positive relationship between MS and ROA of commercial banks is that when central banks increases Money Supply, Household gets more money at his disposal and are therefore looking for investment and also money supply is basically determined by central bank policy, it could also affect the behavior of banks that is it make saving and demand deposit to increase which in turn increases the credit granting capabilities of commercial Banks which leads to banks profit.

Foreign Exchange Rate (FER) and return on asset (ROA)

Table 4.6 above depicted that, the coefficient of Foreign Exchange Rate (FER) is-0.001089and its P-value are 0.0000. Holding other independent variables constant at their average value, when on Average Foreign Exchange Rate (FER) increased by one percent, return on asset of sampled Ethiopian commercial banks would be decreased by 0.11% percent, and statistically significant at 1% of significance level. In other words, there is significant negative relationship between FER and ROA of Ethiopian commercial banks. Therefore, the researcher do not reject the null hypothesis that there is positive/negative significant relationship between FER and ROA. This means, there is sufficient evidence to support the positive/negative relationship between ROA and FER.

This result is consistent with (Illo, 2012),(Otambo, 2016) and (Baba & Nasieku, 2016) and according to their finding when the value of local currency is depreciated ,which means that In many Ethiopian Commercial Banks there was a deficit of foreign currency and do not earn service charge from foreign transaction like Letter of credit(LC) and Cash against document.

Real Lending Interest Rate (RLIR) and return on asset (ROA)

Real Lending Interest Rate is lending interest rate adjusted for inflation which indicates a price which is the borrower to pay for loan and other debt services. According to the regression table 4.6, Real Lending Interest Rate has a positive insignificant relationship with ROA of private commercial banks in Ethiopia. Hence, it is observed that Real lending interest rate has statistically insignificant on ROA at 5% significance level (p-value 0.5884) with coefficient 0.047800 when on average lending rate goes up by one percent ROA will goes up by 4.8% provided other independent variables are constant. This result is consistent

with previous empirical research such as (Sheefeni, 2015) according to it the higher the prevailing lending interest rate brings sampled bank profitability but the relationship between RLIR and ROA is no significant.

We reject the null hypothesis that Real Lending Interest Rate has positive/negative and significant relationship with return on asset (ROA) of Commercial banks.

Real Gross Domestic Product (RGDP) and return on asset (ROA)

Table 4.6 depicted that, the coefficient of Real Gross Domestic Product (RGDP) is -0.156641and its P-value are 0.0770. Holding other independent variables constant at their average value, when on average Real Gross Domestic Product (RGDP) increased by one percent, return on asset of sampled Ethiopian commercial banks would be decreased by 15.7%, and statistically insignificant at 5% of significance level. In other words, there is non-significant negative relationship between RGDP and ROA of Ethiopian commercial banks. Therefore, the researcher rejects the null hypothesis that there is positive and significant relationship between RGDP and ROA. This means, there is no sufficient evidence to support the positive relationship between ROA and RGDP.

This research is in line with (Ongore & kusa, 2013), (Simyu & Ngile, 2015), (Kiganda, 2014), (kanwal & Nadeem, 2013), (Ghurtskaia, 2018), (Dawit, 2017), (Tesfaye, 2013) and (Tesfaye, 2014) on the Basis of non-significant relationship between RGDP and ROA but all of the above mentioned empirical research has positive relation between RGDP and ROA

Unemployment Rate (UR) and return on asset (ROA)

Table 4.6 above depicted that, the coefficient of Unemployment Rate (UR) is -2.631882 and its P-value is 0.0253. Holding other independent variables constant at their average value, when on average Unemployment Rate (UR) increased by one unit, return on asset (ROA) of sampled Ethiopian commercial banks would be decreased by 0.02632 unit, and statistically significant at 5% of significance level. In other words, there is significant negative relationship between Unemployment Rate (UR) and return on asset (ROA) of sampled Ethiopian commercial banks. Therefore, the researcher do not rejects the null hypothesis that there is significant and negative relationship between UR and ROA.

The previous empirical research by (Baba & Nasieku, 2016) suggested that unemployment rate has negative and significant relationship with ROA and suggested that increase in unemployment rate lead to poor performance of commercial banks.

4.3.2 Regression result of model specification II

Table 4.7 Model regressed using ROE as a proxy of financial performance

Dependent Variable: ROE
Method: Panel Least Squares
Date: 01/10/19 Time: 00:22
Sample: 2008 2017
Periods included: 10
Cross-sections included: 7
Total panel (balanced) observations: 70

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IR	-0.021328	0.050358	-0.423526	0.6737
MS	0.816215	0.096012	8.501212	0.0000
FER	-0.013031	0.001476	-8.830698	0.0000
RGDP	-1.398194	0.640349	-2.183487	0.0337
RLIR	0.724778	0.671558	1.079249	0.2857
UR	-10.02618	8.796960	-1.139732	0.2598
CBE2012DUM	0.336779	0.039291	8.571467	0.0000
CBE2013DUM	0.333399	0.038145	8.740229	0.0000
CBE2014DUM	0.314034	0.038415	8.174680	0.0000
CBE2015DUM	0.395239	0.039385	10.03521	0.0000
CBE2016DUM	0.331698	0.039434	8.411559	0.0000
CBE2017DUM	0.331439	0.039110	8.474606	0.0000
BOA2008DUM	0.211376	0.037449	5.644358	0.0000
C	0.945012	0.417470	2.263665	0.0280

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.946993	Mean dependent var	0.330234
Adjusted R-squared	0.926850	S.D. dependent var	0.121613
S.E. of regression	0.032892	Akaike info criterion	-3.756229
Sum squared resid	0.054094	Schwarz criterion	-3.113802
Log likelihood	151.4680	Hannan-Quinn criter.	-3.501049
F-statistic	47.01388	Durbin-Watson stat	1.960013
Prob(F-statistic)	0.000000		

The R-squared and Adjusted R-squared values of 0.95 and 0.93 respectively are an indication that the model is a good fit. This means more than 93% of variations in return on Equity of Ethiopian commercial banks were explained by independent variables included in the model. However, the remaining 7% changes in return on Equity of Ethiopian commercial banks are caused by other factors that are not included in the model. Furthermore, the F-statistic was 47.01 and the probability of not rejecting the null hypothesis that there is no statistically significant relationship existing between the dependent variable (ROE) and the independent variables, is 0.000000 indicates that the overall model is highly significant at 1% and that all the independent variables are jointly significant in causing variation in return on equity.

The panel random effect estimation regression result in the above table 11 shows that, coefficient
intercept (β_0) is 0.945012. This means, when all explanatory variables took a value of zero, the average value ROE would be take 0.945012 unit and statistically significant at 5% level of significance.

Inflation Rate (IR) and Return on Equity (ROE)

As the above random effect regression output table 4.7 presented that, the coefficient of Inflation rate (IR) is -0.021328 and its P-value is 0.6737.Holding other independent variables constant at their average value, when on average Inflation Rate (IR) increase by one percent, return on Equity (ROE) of sampled Ethiopian commercial banks was decreased by 2.13% and statistically insignificant at 5% of significant level. Therefore, the researcher reject the null hypothesis that Inflation Rate has significant negative Relationship to ROE. This means, there is no sufficient evidence to support the significant relationship between ROE and IR.

The relationship is negative as expected and this negative relationship between IR and ROE could be attributed to the fact that a bank with high Inflation Rate ratio has low financial performance (ROE) but their relationship is insignificant.

This finding is consistent with previous studies with (Alper & Anbar, 2011), (Osamwonyi & Michael, 2014), (Baba & Nasieku, 2016), (Helhel, 2014), (Sheefeni, 2015), (Gee et al., 2015), (Jegadeeshwaran & Priya, 2016) and (Ghurtskaia, 2018) shows that Inflation Rate has non-significant relationship between IR and financial performance of banks

Money Supply (MS) and Return on equity (ROE)

Table 4.7 above depicted that, the coefficient of Money Supply (MS) 0.816215 and its P-value is 0.0000. Holding other independent variables constant at their average value, when on average Money Supply (MS) increased by one percent, return on Equity (ROE) of sampled Ethiopian commercial banks would be increased by 81.62%, but statistically significant at 1% of significance level. In other words, there is significant positive relationship between Money Supply (MS) and return on Equity (ROE) of sampled Ethiopian commercial banks. Therefore, the researcher accept the null hypothesis that there is significant positive relationship between MS and ROE. This means, there is sufficient evidence to support significance relationship between MS and ROE.

This research is consistent with (Illo, 2012), (Helhel, 2014) and (Dawit, 2017) .as the money available for sampled commercial banks increases it will utilized the money to forward to customers in the form of loans and advances which in turn increase their profit.

The possible reason for significant positive relationship between MS and ROA of commercial banks is that when central banks increases Money Supply, Household gets more money at his disposal and are therefore looking for investment and also money supply is basically determined by central bank policy, it could also affect the behavior of banks that is it make saving and demand deposit to increase which in turn increases the credit granting capabilities of commercial Banks which leads to banks profit.

Foreign Exchange Rate (FER) and return on asset (ROE)

Table 4.7 above depicted that, the coefficient of Foreign Exchange Rate (FER) is -0.013031and its P-value are 0.0000. Holding other independent variables constant at their average value, when on average Foreign Exchange rate (FER) increased by one percent, return on Equity of sampled Ethiopian commercial banks would be decreased by 1.30%, and statistically significant at 1% of significance level. In other words, there is significant negative relationship between FER and ROE of Ethiopian commercial banks.

Therefore, the researcher do not rejects the null hypothesis that Foreign Exchange Rate has a significant negative Relationship to ROE.

This result is consistent with (Illo, 2012), (Mueni, 2016) ,(Otambo, 2016) and (Baba & Nasieku, 2016) The possible reason for the significant negative relationship between foreign

Exchange Rate and Rate of Return on Equity of sampled commercial banks is that when the value of local currency is depreciated ,which means that In many Ethiopian Commercial Banks there was a deficit of foreign currency and do not earn service charge from foreign transaction like Letter of credit(LC) and Cash against document.

Real Lending Interest Rate (RLIR) and return on Equity (ROE)

Real Lending Interest Rate is lending interest rate adjusted for inflation which indicates a price which is the borrower to pay for loan and other debt services. it is observed that Real lending interest rate has coefficient of 0.724778 statistically insignificant on ROE at 5% significance level (p-value 0.2857) when on average lending rate goes up by one unit also ROE will goes up by 72.5% provided other independent variables are constant. This research is consistent with previous empirical research of (Sheefeni, 2015) and (Gee et al., 2015) this is implies that higher lending interest rate made the interest income to increase which in return increased the profitability of sampled commercial banks but the relationship is non-significant.

Therefore, the researcher rejects the null hypothesis that Real Lending Interest rate has a significant positive/negative Relationship to ROE

Real Gross Domestic Product (RGDP) and return on Equity (ROE)

Table 4.7 depicted that, the coefficient of Real Gross Domestic Product (RGDP) is -1.398194 and p-value 0.0337 .Holding other independent variables constant at their average value, when on average Real Gross Domestic Product (RGDP) increased by one percent, return on asset of sampled Ethiopian commercial banks would be decreased by13.98%, and statistically significant at 5% of significance level. In other words, there is significant negative relationship between RGDP and ROE of Ethiopian commercial banks. Therefore, the researcher rejects the null hypothesis that there is positive relationship between RGDP and ROE. This means, there is no sufficient evidence to support the positive relationship between ROE and RGDP. The result is peculiar that other previous empirical research have a finding of either positive or insignificant relationship between RGDP and ROE.

The possible reason would be higher economic growth improves businesses environment and lower banks entry barriers this consequently increased competition dampens or weaken bank's profitability.

Unemployment Rate (UR) and return on Equity (ROE)

Table 4.7 above depicted that, the coefficient of Unemployment Rate (UR) is -10.02618 and its P-value is 0.2598. Holding other independent variables constant at their average value, when on average Unemployment Rate (UR) increased by one unit, return on asset (ROE) of sampled Ethiopian commercial banks would be decreased by 10.03 unit, but statistically insignificant at 5% of significance level. In other words, there is insignificant negative relationship between Unemployment Rate (UR) and return on asset (ROE) of sampled Ethiopian commercial banks. Therefore, the researcher rejects the null hypothesis that there is significant relationship between UR and ROE. This means, there is no sufficient evidence to support the significant relationship between UR and ROE.

This finding is consistent with (Ghurtskaia, 2018) with finding that Unemployment rate has insignificant relationship with profitability.

4.4 Summary of Analysis

Table:4.8 **Summary and Comparison of test result with expectation for ROA model**

Dependent variable=ROA

Explanatory Variable	Expected relationship	Actual relationship	Hypothesis status
IR	Negative/Significant	Positive/significant	reject
MS	Positive/significant	Positive/significant	Do not reject
FER	+ve/–ve /significant	Negative/significant	Do not reject
RGDP	Positive/significant	Negative/Insignificant	reject
RLIR	+ve/-ve/significant	Positive/insignificant	reject
UR	Negative/significant	Negative/significant	Do not reject

Source: own computation

Table4.9: Summary and Comparison of test result with expectation for ROE model

Dependent Variable=ROE

Explanatory Variable	Expected relationship	Actual relationship	Hypothesis status
IR	Negative/significant	Negative/insignificant	reject
MS	Positive/significant	Positive/significant	Do not reject
FER	+ve/-ve/significant	Negative/significant	Do not reject
RGDP	Positive/significant	Negative/significant	reject
RLIR	+ve/-ve/significant	Positive/insignificant	reject
UR	Negative/significant	Negative/insignificant	reject

Source: own computation

CHAPTER FIVE

5. SUMMARY, CONCLUSION AND RECOMMENDATION

5.1. Summary

The main objective of this study was to examine the impact of Macroeconomic factors on financial performance of commercial banks in Ethiopia.

According to previous studies made on the determinants of financial performance, performance is affected by both internal and external factors. Internal factors are factors that are mainly influenced by a bank's management and also called bank specific factors. External factors represent events outside the influence of the banks and also called macroeconomic factor among them Inflation Rate (IR), Money Supply (MS), Foreign Exchange Rate (FER), Real Lending Interest Rate (RLIR), Real Gross Domestic Product (RGDP) and Unemployment Rate (UR) were used for this study. A sample of seven commercial banks with panel data spanning from the year 2008-2017 were used to find out the relationship between the dependent variables such as Rate of Return on Asset(ROA) and Return on Equity(ROE) and the above mentioned independent variables. The data source for this study was NBE, the World Bank data website and audited financial statements of the banks included in the sample. The data was being analyzed by descriptive statistics, and multiple linear regression analysis which is made in line with the specific research objectives and stated hypotheses formulated in the study.

Before making regression analysis, the study goes through all diagnostic tests, including multicollinearity, hetroscadacity; normality and autocorrelation were made for the classical linear regression model by using E-veiws 8 software. Regression Analysis was identified as the most appropriate tool for econometric analysis of the data. The descriptive statistics revealed the data to be normal. Also the assumptions needed to be fulfilled for OLS were tested; the data was found to be homoskedastic, free of autocorrelation free of Multicollinearity and normally distributed.

In relation to financial performance measured by ROA; MS, FER,IR and UR have significant impact on the financial performance of Ethiopian commercial banks, but RGDP and RLIR have insignificant effect on financial performance of sampled Banks.

IR, MS, RLIR has positive coefficient but others such as FER, RGDP and UR has negative coefficient. The explanatory variables included in this study jointly explain about 67 percent of the variation in return on asset.

With regard to ROE as a financial performance measure for the study; explanatory variables such as MS, FER and RGDP have significant effect But Variable such as IR, RLIR and UR have insignificant effect. Besides, only MS and RLIR have positive coefficient the remaining variables Such as IR, FER, RGDP and UR have negative coefficient. And finally 93% variation of ROE is explained by these independent variable.

5.2 Conclusion

Based on the findings, it can be concluded that Money Supply (MS) has significant impact on ROA with a positive relationship; which means any increase/decrease on the value of these variables leads to an increase/decrease on financial performance of Commercial Banks (ROA). And also Foreign Exchange Rate(FER) has significant impact on ROA with negative relationship; which means any Increase/Decrease Foreign Exchange Rate leads to Decrease/Increase financial performance (ROA).Real Lending Interest Rate (RLIR) has positive insignificant effect with financial performance (ROA), Inflation Rate (IR) also has positive and significant effect on financial performance(ROA) which means Increase/decrease on the value of Inflation Rate lead to Increase/decrease on the value of financial performance(ROA). Real Gross Domestic Product (RGDP) have negative and insignificant effect on financial performance of Commercial Banks and Unemployment Rate (UR) has significant negative relationship with ROA this means Increase/Decrease on Unemployment Rate(UR) leads to Decrease/Increase on the value of ROA.

Money Supply(MS) have significant impact on financial performance(ROE) with positive relationship; which means any increase/decrease on the value of this variable leads to an Increase/Decrease on financial performance(ROE).Foreign Exchange Rate(FER) and Real Gross Domestic Product(RGDP) have significant impact on financial performance (ROE) with negative relationship; which means any Increase/Decrease on the value of these Variables leads to Decrease/Increase on financial Performance(ROE).and Inflation Rate(IR) and Unemployment rate(UR) have negative insignificant relationship with financial performance(ROE) and Real Lending Interest Rate has positive insignificant effect on financial performance(ROE).

5.3. Recommendation

Based on the study finding, the financial performance of Ethiopian commercial banks measured by ROA, ROE were mainly affected by Macroeconomic variables such as Money supply (MS), Foreign Exchange Rate (FER), Inflation Rate (IR), Unemployment Rate (UR) and Real Gross Domestic Product (RGDP) among six Macroeconomic Variables involved in the study. Although these significant Variables are Macroeconomic in Nature on which the Management of Commercial Banks have not able to control, there are rooms for Managers to make their bank profitable by incorporating quality and professional forecast on the trend of these Macroeconomic factors when crafting their strategic plan. Therefore based on the finding of the study the following possible recommendation were forwarded.

- ✓ RGDP found to have Negative significant effect on financial performance of banks measured by ROE, the Government and Regulatory Agencies such as NBE should ensure that this Macroeconomic factors are well managed as it growth affects the profitability of many sectors.

- ✓ The government monetary policy should consider the effect of money supply on banks performance and the Management of Banks should not ignore the effect of Money supply when crafting Strategies to improve financial performance of their banks.

- ✓ Unemployment Rate found to have negative significant effect on financial performance as measured by ROA. The government must manage Unemployed labour force in the country because its increment has not good effect on the efficiency of the economy in general and on financial performance of banking sector in particular.

- ✓ Inflation rate found to have a significant effect on financial performance as measured by ROA. Inflation Rate is Important for Bank profitability as in the case of the result of this study but if Inflation rate tend to Increase above two digit level NBE must devise a mechanism to stabilize the level of general price by executing increasing interest rate through reserve or/and increasing reserve requirement on the amount of money banks are legally required to keep on hand to withdraw or indirectly reduce the Money supply by enacting policies.

- ✓ Foreign exchange rate found to have negative significant effect on both ROA and ROE. We can see that fast depreciating local currency can create high level of instability so the NBE must Place different measures that can stabilize the local currency and also the bank managers must put into place mitigating strategies to reduce the effect of this foreign currency fluctuation.

- ✓ Finally other researcher can conduct other research by incorporating More Macroeconomic factors such as foreign Direct investment, Export, Import, external debt etc. By making Internal or bank specific factors as controlling variables.

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Appendices

Appendix- I: List of All Commercial Banks as of June 2017

(branch in Number and Capital in Millions of Birr)

S/No	Name of The Bank	Years of Establishment	ownership	capital	No of Branches
1	Commercial Bank of Ethiopia	1942	Public	42,579.60	1310
2	Awash International Bank S.C	1994	Private	3,807.60	339
3	Dashen Bank S.C	1995	Private	3,420.90	315
4	Abyssinia Bank	1996	Private	2,371.00	253
5	Wegagen Bank	1996	Private	2,824.50	223
6	United Bank	1998	Private	2,221.00	204
7	Nib international Bank	1999	Private	2,570.20	203
8	Corporative Bank of Oromia	2005	Private	1,281.70	287
9	Lion International Bank	2006	Private	1,163.50	158
10	Oromia International Bank	2008	Private	1,378.30	237
11	Zemen Bank	2009	Private	1,050.70	22
12	Bunna International Bank	2009	Private	1,152.30	143
13	Berhan International Bank	2010	Private	1,536.30	177
14	Abay Bank	2010	Private	1,139.30	152
15	Addis International Bank	2011	Private	688.40	53
16	Debub Global Bank	2012	Private	373.10	38
17	Enat Bank	2013	Private	809.30	33
	Grand Total			70,367.70	4147

SOURCE :NBE 2016/2017

Appendix- II: Test for Heteroscedasticity on ROA Model: white

Heteroscedasticity Test: White

F-statistic	1.388206	Prob. F(10,59)	0.2082
Obs*R-squared	13.33311	Prob. Chi-Square(10)	0.2056
Scaled explained SS	6.478216	Prob. Chi-Square(10)	0.7736

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 01/10/19 Time: 02:38

Sample: 1 70

Included observations: 70

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.000144	0.000160	-0.902025	0.3707
IR^2	-0.000186	8.64E-05	-2.152317	0.0355
MS^2	-3.24E-05	0.000135	-0.239401	0.8116
FER^2	-5.09E-08	3.54E-08	-1.437255	0.1559
RGDP^2	-0.003039	0.002867	-1.059678	0.2936
RLIR^2	-0.015826	0.008106	-1.952319	0.0557
UR^2	0.094845	0.067015	1.415273	0.1622
WB2009DUM^2	-5.13E-05	3.00E-05	-1.709221	0.0927
WB2010DUM^2	-3.63E-05	2.97E-05	-1.219154	0.2276
WB2011DUM^2	-1.74E-05	3.05E-05	-0.572102	0.5694
WB2012DUM^2	-3.77E-05	3.06E-05	-1.233855	0.2221

R-squared	0.190473	Mean dependent var	2.49E-05
Adjusted R-squared	0.053265	S.D. dependent var	2.93E-05
S.E. of regression	2.85E-05	Akaike info criterion	-17.94725
Sum squared resid	4.81E-08	Schwarz criterion	-17.59392
Log likelihood	639.1539	Hannan-Quinn criter.	-17.80690
F-statistic	1.388206	Durbin-Watson stat	1.162772
Prob(F-statistic)	0.208228		

Appendix- III: Test for Heteroscedasticity on ROE Model: white

Heteroskedasticity Test: White

F-statistic	0.635453	Prob. F(13,56)	0.8139
Obs*R-squared	8.998671	Prob. Chi-Square(13)	0.7730
Scaled explained SS	6.575347	Prob. Chi-Square(13)	0.9227

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 01/10/19 Time: 00:58

Sample: 1 70

Included observations: 70

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.025291	0.024722	1.022986	0.3107
IN^2	0.015870	0.012625	1.256972	0.2140
MS^2	0.003329	0.019397	0.171613	0.8644
FER^2	-3.07E-06	5.30E-06	-0.580086	0.5642
RLIR^2	-0.722082	1.223359	-0.590246	0.5574
RGDP^2	-0.418718	0.422983	-0.989917	0.3265
UE^2	-6.431912	10.24581	-0.627760	0.5327
BOA2008DUM^2	-0.004002	0.004485	-0.892201	0.3761
CBE2012DUM^2	-0.005098	0.004456	-1.143946	0.2575
CBE2013DUM^2	-0.003602	0.004270	-0.843466	0.4026
CBE2014DUM^2	-0.003060	0.004303	-0.711286	0.4799
CBE2015DUM^2	-0.003587	0.004359	-0.822830	0.4141
CBE2016DUM^2	-0.002093	0.004439	-0.471462	0.6391
CBE2017DUM^2	-0.000572	0.004451	-0.128502	0.8982

R-squared	0.128552	Mean dependent var	0.002636
Adjusted R-squared	-0.073748	S.D. dependent var	0.004012
S.E. of regression	0.004157	Akaike info criterion	-7.951012
Sum squared resid	0.000968	Schwarz criterion	-7.501313
Log likelihood	292.2854	Hannan-Quinn criter.	-7.772386
F-statistic	0.635453	Durbin-Watson stat	1.019282
Prob(F-statistic)	0.813922		

Appendix-IV Summary of Ratio Data

YEAR	BANK	ROA	ROE	FER	RLIR	IR	RGDP	MS	UR
2008	**CBE**	0.0371	0.2975	9.0746	0.0369	0.4440	0.1120	0.2040	0.0530
2009	**CBE**	0.0458	0.3796	11.2190	0.0369	0.0850	0.1000	0.2100	0.0520
2010	**CBE**	0.0378	0.3532	13.5998	0.0438	0.0810	0.1040	0.2660	0.0520
2011	**CBE**	0.0370	0.4501	16.9927	0.0311	0.3320	0.1140	0.3920	0.0520
2012	**CBE**	0.0499	0.7031	17.8192	0.0275	0.2410	0.0870	0.3030	0.0510
2013	**CBE**	0.0438	0.6377	18.7358	0.0317	0.0810	0.0990	0.2420	0.0500
2014	**CBE**	0.0408	0.6211	19.6750	0.0341	0.0740	0.1030	0.2650	0.0500
2015	**CBE**	0.0416	0.6584	20.6688	0.0143	0.1010	0.1040	0.2470	0.0500
2016	**CBE**	0.0357	0.5799	21.9094	0.0522	0.0730	0.0880	0.1990	0.0510
2017	**CBE**	0.0357	0.5860	23.2237	0.0395	0.0990	0.1090	0.2880	0.0520
2008	**AIB**	0.0423	0.3416	9.0746	0.0369	0.4440	0.1120	0.2040	0.0530
2009	**AIB**	0.0425	0.3981	11.2190	0.0369	0.0850	0.1000	0.2100	0.0520
2010	**AIB**	0.0389	0.3657	13.5998	0.0438	0.0810	0.1040	0.2660	0.0520
2011	**AIB**	0.0455	0.3779	16.9927	0.0311	0.3320	0.1140	0.3920	0.0520
2012	**AIB**	0.0404	0.3215	17.8192	0.0275	0.2410	0.0870	0.3030	0.0510
2013	**AIB**	0.0328	0.2822	18.7358	0.0317	0.0810	0.0990	0.2420	0.0500
2014	**AIB**	0.0374	0.3191	19.6750	0.0341	0.0740	0.1030	0.2650	0.0500
2015	**AIB**	0.0341	0.2704	20.6688	0.0143	0.1010	0.1040	0.2470	0.0500
2016	**AIB**	0.0317	0.2506	21.9094	0.0522	0.0730	0.0880	0.1990	0.0510
2017	**AIB**	0.0322	0.2807	23.2237	0.0395	0.0990	0.1090	0.2880	0.0520
2008	**DB**	0.0424	0.4552	9.0746	0.0369	0.4440	0.1120	0.2040	0.0530
2009	**DB**	0.0362	0.3879	11.2190	0.0369	0.0850	0.1000	0.2100	0.0520
2010	**DB**	0.0371	0.4079	13.5998	0.0438	0.0810	0.1040	0.2660	0.0520
2011	**DB**	0.0430	0.4511	16.9927	0.0311	0.3320	0.1140	0.3920	0.0520
2012	**DB**	0.0510	0.4887	17.8192	0.0275	0.2410	0.0870	0.3030	0.0510
2013	**DB**	0.0431	0.3974	18.7358	0.0317	0.0810	0.0990	0.2420	0.0500
2014	**DB**	0.0436	0.3686	19.6750	0.0341	0.0740	0.1030	0.2650	0.0500
2015	**DB**	0.0389	0.3296	20.6688	0.0143	0.1010	0.1040	0.2470	0.0500
2016	**DB**	0.0333	0.2831	21.9094	0.0522	0.0730	0.0880	0.1990	0.0510
2017	**DB**	0.0283	0.2454	23.2237	0.0395	0.0990	0.1090	0.2880	0.0520
2008	**BOA**	0.0513	0.5220	9.0746	0.0369	0.4440	0.1120	0.2040	0.0530
2009	**BOA**	0.0266	0.2802	11.2190	0.0369	0.0850	0.1000	0.2100	0.0520
2010	**BOA**	0.0313	0.3353	13.5998	0.0438	0.0810	0.1040	0.2660	0.0520
2011	**BOA**	0.0355	0.3910	16.9927	0.0311	0.3320	0.1140	0.3920	0.0520
2012	**BOA**	0.0350	0.3183	17.8192	0.0275	0.2410	0.0870	0.3030	0.0510
2013	**BOA**	0.0313	0.3173	18.7358	0.0317	0.0810	0.0990	0.2420	0.0500
2014	**BOA**	0.0312	0.2299	19.6750	0.0341	0.0740	0.1030	0.2650	0.0500
2015	**BOA**	0.0273	0.2065	20.6688	0.0143	0.1010	0.1040	0.2470	0.0500
2016	**BOA**	0.0290	0.2294	21.9094	0.0522	0.0730	0.0880	0.1990	0.0510
2017	**BOA**	0.0278	0.2425	23.2237	0.0395	0.0990	0.1090	0.2880	0.0520
2008	**WB**	0.0461	0.3138	9.0746	0.0369	0.4440	0.1120	0.2040	0.0530

2009	**WB**	0.0500	0.3062	11.2190	0.0369	0.0850	0.1000	0.2100	0.0520
2010	**WB**	0.0553	0.3019	13.5998	0.0438	0.0810	0.1040	0.2660	0.0520
2011	**WB**	0.0568	0.3426	16.9927	0.0311	0.3320	0.1140	0.3920	0.0520
2012	**WB**	0.0549	0.2857	17.8192	0.0275	0.2410	0.0870	0.3030	0.0510
2013	**WB**	0.0433	0.2457	18.7358	0.0317	0.0810	0.0990	0.2420	0.0500
2014	**WB**	0.0359	0.1930	19.6750	0.0341	0.0740	0.1030	0.2650	0.0500
2015	**WB**	0.0330	0.1874	20.6688	0.0143	0.1010	0.1040	0.2470	0.0500
2016	**WB**	0.0296	0.1705	21.9094	0.0522	0.0730	0.0880	0.1990	0.0510
2017	**WB**	0.0338	0.2110	23.2237	0.0395	0.0990	0.1090	0.2880	0.0520
2008	**UB**	0.0387	0.2690	9.0746	0.0369	0.4440	0.1120	0.2040	0.0530
2009	**UB**	0.0287	0.2568	11.2190	0.0369	0.0850	0.1000	0.2100	0.0520
2010	**UB**	0.0420	0.3885	13.5998	0.0438	0.0810	0.1040	0.2660	0.0520
2011	**UB**	0.0418	0.3578	16.9927	0.0311	0.3320	0.1140	0.3920	0.0520
2012	**UB**	0.0407	0.3384	17.8192	0.0275	0.2410	0.0870	0.3030	0.0510
2013	**UB**	0.0375	0.3115	18.7358	0.0317	0.0810	0.0990	0.2420	0.0500
2014	**UB**	0.0304	0.2292	19.6750	0.0341	0.0740	0.1030	0.2650	0.0500
2015	**UB**	0.0249	0.2124	20.6688	0.0143	0.1010	0.1040	0.2470	0.0500
2016	**UB**	0.0248	0.2068	21.9094	0.0522	0.0730	0.0880	0.1990	0.0510
2017	**UB**	0.0223	0.1943	23.2237	0.0395	0.0990	0.1090	0.2880	0.0520
2008	**NIB**	0.0435	0.2654	9.0746	0.0369	0.4440	0.1120	0.2040	0.0530
2009	**NIB**	0.0457	0.3015	11.2190	0.0369	0.0850	0.1000	0.2100	0.0520
2010	**NIB**	0.0478	0.3112	13.5998	0.0438	0.0810	0.1040	0.2660	0.0520
2011	**NIB**	0.0484	0.2939	16.9927	0.0311	0.3320	0.1140	0.3920	0.0520
2012	**NIB**	0.0471	0.2549	17.8192	0.0275	0.2410	0.0870	0.3030	0.0510
2013	**NIB**	0.0414	0.2272	18.7358	0.0317	0.0810	0.0990	0.2420	0.0500
2014	**NIB**	0.0386	0.2111	19.6750	0.0341	0.0740	0.1030	0.2650	0.0500
2015	**NIB**	0.0333	0.2025	20.6688	0.0143	0.1010	0.1040	0.2470	0.0500
2016	**NIB**	0.0290	0.1822	21.9094	0.0522	0.0730	0.0880	0.1990	0.0510
2017	**NIB**	0.0290	0.1822	23.2237	0.0395	0.0990	0.1090	0.2880	0.0520