

Determinants of commercial banks financial performance in Ethiopia

By:

Dawit Fekadu Ayano

**Addis Ababa University
College of Business and Economics
Department of Accounting and Finance**

April, 2016

Addis Ababa, Ethiopia

Determinants of commercial banks financial performance in Ethiopia

Advisor

Dr. Venkati Ponnala

**A thesis submitted to Addis Ababa University College of Business and
Economics Department of Accounting and Finance in Partial fulfillment of the
requirement for the degree of Masters of Science in Accounting and Finance**

April, 2016

Addis Ababa, Ethiopia

Declaration

I, Dawit Fekadu Ayano, here by declare that the thesis work entitled “*Determinants of Commercial Banks financial performance in Ethiopia*” submitted by me for the award of the degree of Master of Science in Accounting and Finance of Addis Ababa University at Addis Ababa Ethiopia, is original work and it hasn’t been presented for the award of any other Degree, Diploma, Fellowship or other similar titles of any other university or institution.

Name **Dawit Fekadu**

Advisor’s Name **Dr. Venkati P.**

Signature: _____

Signature: _____

Certification
Addis Ababa University
School of Graduate Studies

This is to certify that the thesis prepared by Dawit Fekadu Ayano, entitled: *Determinants of Commercial Banks financial performance in Ethiopia* and submitted in partial fulfillment of the requirements for the Degree of Masters of Science in Accounting and Finance complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

Approved by:

External Examiner _____ Signature _____ Date _____

Internal Examiner _____ Signature _____ Date _____

Advisor **Venkati Ponnala (phD)** Signature _____ Date _____

Chair of Department or Graduate Program Coordinator

Abstract

This study examines the determinants of financial performance of commercial banks in Ethiopia by using panel data of seven sample commercial banks out of eighteen commercial banks operated in Ethiopia over the period 2000-2014. Since the data is secondary in nature, the quantitative approach to research was used. Besides, the random effect model was used. Under this study, both internal and external factors were included. The internal factors used in this study include capital adequacy, Asset quality, Earning ability, liquidity management and Bank size whereas, the external factor is foreign exchange rate. Moreover, ROA, ROE and NIM were used to measure the financial performance. This study runs a redundant fixed effects test using Hausman specification test. Hence based on the result random effect model was adopted. Based on the regression result; asset quality, earning ability and bank size have a significant influence on the financial performance of Ethiopian commercial banks measured by return on asset , return on equity and net interest margin. Thus, management bodies of commercial bank should strive to strengthen the identified significant factors.

Key words: *financial performance, commercial banks*

Acknowledgements

My deepest and warmest thank goes to the Almighty God and His mother Saint Marry, who help me in all aspect of my life including the achievement of this masters program. Along with, I would like to express my sincere gratitude to my advisor Dr. Venkati Ponnala, for his expert guidance, helpful criticism, valuable suggestions and encouragement at every stage during the completion of this work. It was pleasant and inspiring experience for me to work under his guidance.

I am also grateful, to NBE, bank supervision department staffs, for their assistance by giving audited financial reports. It is my pleasure to thank, the financial officers of all sampled banks, my special thanks also forwarded to Awash International Bank S.C. Librarians.

I add a special note of admiration and gratitude to my families, friends and staffs who have contributed in many ways toward the completion of this thesis, for their moral support, to done and to go through this piece of work. At last but not least I want to say to My Father, Fekadu Ayano this is a result of your sacrifice RIP may God give your soul heaven.

Table of Contents

Declaration	i
Certification	ii
Abstract	iii
Acknowledgements	iv
Table of Contents	v
List of tables	viii
List of figures	ix
List of acronyms	x
CHAPTER ONE	1
Introduction	1
1.1 Background of the study	1
1.2 Statement of the problems	3
1.3 Objective of the study	4
1.3.1 General objectives	4
1.3.2 Specific objective	4
1.4 Hypotheses of the study	5
1.5 Significance of the Study	6
1.6 Scope of the Study	6
1.7 Limitation of the Study	7
1.8 Organization of the paper	7
CHAPTER TWO	8
Review of Related Literature	8
2.1 Theoretical framework	8
2.1.1. Overview of banking history in Ethiopia	9
2.1.2 Bank Performance Indicators	14
2.1.2.1 Return on Equity (ROE)	14
2.1.2.2 Return on Asset (ROA)	14
2.1.2.3 Net Interest Margin (NIM)	15
2.1.3 Determinants of Bank Performance	15
2.1.3.1 Bank Specific Factors/Internal Factors	16

2.1.3.2 External Factors/ Macroeconomic Factors	23
2.2 Review of Empirical studies.....	24
2.2.1 Single country studies	25
2.2.2 Panel country studies	32
2.2.3 Review of previous studies on Ethiopia.....	34
2.3 Conclusion and knowledge gap	36
2.4 Conceptual framework.....	37
CHAPTER THREE	39
Research Design and Methodology	39
3.1 Research design	39
3.1.1 Population of the study	39
3.1.2 Sampling techniques	39
3.1.3 Source and types of data	40
3.1.4 Data analysis	40
3.2 Operationalization of the Study Variables.....	42
3.3 Model Specification	43
3.4 Model Assumptions	44
CHAPTER FOUR.....	46
Data Analysis and Presentation	46
4.1. Descriptive statistics	46
4.2. CLRM assumptions and Diagnostic tests	48
4.2.1. Heteroskedasticity test	48
4.2.2. Multicollinearity test.....	50
4.2.3. Normality test.....	51
4.2.4. Testing for serial correlation.....	53
4.3. Model selection criteria.....	55
4.4. Regression analysis.....	57
4.4.1 Regression result of model specification I.....	58
4.4.2 Regression result of model specification II	64
4.4.3 Regression result of model specification III	70
4.5 Summary of Analysis.....	76

CHAPTER FIVE	79
Summery, Conclusion and Recommendation.....	79
5.1. Summary	79
5.2 Conclusion	81
5.3 Recommendation	82
References.....	I
Appendices.....	VIII
Appendix -I: Tests for the Heteroskedasticity on ROA model: ARCH.....	IX
Appendix -II: Tests for the Heteroskedasticity on ROE model: ARCH.....	X
Appendix -III: Tests for the Heteroskedasticity on NIM model: ARCH.....	XI
Appendix-IV: Summary of ratio data	XII

List of tables

Table 1 List of Commercial Banks in Ethiopia.....	13
Table 2 List of the sample Banks.....	40
Table 3 Operationalization of the variables	42
Table 4 Summary of descriptive statistics.....	48
Table 5 Heteroskedasticity test for ROA	49
Table 6 Heteroskedasticity test for ROE	49
Table 7 Heteroskedasticity test for NIM.....	49
Table 8 Results of multicollinearity Test: High Pair-Wise Correlation Coefficients.....	50
Table 9 Testing for serial correlation of ROA model.....	54
Table 10 Testing for serial correlation of ROE model	54
Table 11 Testing for serial correlation of NIM model.....	54
Table 12 Hausman Test for ROA model	55
Table 13 Hausman Test for ROE model.....	56
Table 14 Hausman Test for NIM model.....	56
Table 15 Model regressed using ROA as a proxy of financial performance.....	58
Table 16 Model regressed using ROE as a proxy of financial performance	64
Table 17 Model regressed using NIM as a proxy of financial performance	70
Table 18 Summary and Comparison of test result with expectation for ROA model	76
Table 19 Summary and Comparison of test result with expectation for ROE model.....	77
Table 20 Summary and Comparison of test result with expectation for NIM model.....	78

List of figures

Figure 1 conceptual frameworks	38
Figure 2 Normality test for ROA model	51
Figure 3 Normality test for ROE model	52
Figure 4 Normality test for NIM model.....	53

List of acronyms

AIB -	Awash International Bank S.C
AIDB -	Agricultural and Development Bank
AQ-	Asset Quality
BLUE-	Best Linear Unbiased Estimators
BOA -	Bank of Abyssinia S.C
BS-	Bank Size
CA-	Capital Adequacy
CAD-	Cash against Documents
CBE -	Commercial Bank of Ethiopia
CBE -	Construction and Business Bank
CLRM-	Classic Linear Regression Model
DB -	Dashen Bank S.C
DBE -	Development Bank of Ethiopia
EA-	Earning Ability
FEXRA-	Foreign Exchange Rate
GDP -	Gross Domestic Product
ISHOPA -	Imperial Savings and Home Ownership Public Association
LC -	Letter of Credit
LM-	Liquidity Management
NBE -	National Bank of Ethiopia
NIB -	Nib International Bank S.C
NIM -	Net Interest Margin
NPL -	Non-performing loans
OLS -	Ordinary Least Square
ROA -	Return on Assets
ROE -	Return on Equity
SMCE -	Saving and Mortgage Corporation of Ethiopia
SSA-	Sub-Saharan Africa
UB -	United Bank S.C
WB -	Wegagen Bank S.C

CHAPTER ONE

Introduction

1.1 Background of the study

A dynamic role of banks as financial intermediaries in the economy of a country can be seen as a major resource allocator of a state. They transfer deposited money from depositors to investors continuously. In addition to their intermediary function, the financial performance of banks has serious implications for economic growth of countries. Whenever a country has a better financial performance, shareholders or investors are rewarded on their investment. This, in turn, encourages additional investment and brings about economic growth. On the other hand, poor banking performance may lead to banking failure and crisis which have negative effects on the economic growth. As such, examining the determinants of financial performance of banks is crucial to understanding the stability of financial sector as well as consecutive economic crisis.

Onwards the 1940s great depression, investigating the financial performance of commercial banks has been of great interest to academic research. The last two decades studies have shown that commercial banks in Sub-Saharan Africa (SSA) are more profitable than the rest of the world with an average Return on Assets (ROA) of 2.35 percent (Flamini, et al , 2009). One of the major reasons behind high return in the region was investment in risky ventures. The other possible reason for the high profitability in commercial banking business in SSA is the existence of huge gap between the demand for bank service and the supply thereof. That means, in SSA the number of banks are few compared to the demand for the services; as a result there is less competition and banks charge high interest rates. This is especially true in East Africa where the few government owned banks take the lion's share of the market. The performance of commercial banks can be affected by internal and external factors (Al-Tamimi & Hassan , 2010; Aburime U. , 2005). These factors can be classified into bank specific (internal) and macroeconomic (external) variables. 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.

Many researchers in various countries have made investigation on this area by considering the importance and the hot issue of financial performance in banking sector. For instance research conducted by (Goddard, J., Molyneux, P. and Wilson, S. J., 2004) by using panel data and dynamic panel estimation to investigate the determinants of profitability in six selected European countries banking sectors: Denmark, France, Germany, Italy, Spain, and the UK, for the period 1992-98. The result suggested that among modeled determinants of profitability incorporate: size, capital asset ratio, credit risk and ownership, by measuring profitability in term of Return On Equity (ROE), checked that bank- specific determinants and profitability relationship is very strong. Finally they checked that there is little evidence of a systematic relationship between industry - specific determinants (i.e. ownership) type and profitability.

In the case of Sub - Sahara African (SSA) countries banking sector, the profitability of the commercial banks industries are affected by different internal and external factors. For instance research conducted by (Flamini, Valentina , McDonald, & Liliana, 2009) used a sample of 389 banks in 41 SSA countries to study the determinants of bank profitability measured by the ratio of after tax profits to total assets (ROA). The results revealed that the bank - specific, industry - specific and macroeconomic determinants affected the bank return or bank profitability in strong manner. And finally they conclude that Bank profits are high in Sub-Saharan Africa (SSA) as compared to other regions.

In Ethiopia the commercial banks dominate the financial sector. In a country where the financial sector is dominated by commercial banks, any failure in the sector has a huge implication on the economic growth of the country. This is due to the fact that any bankruptcy that could happen in the sector has a domino effect that can lead to bank runs, crises and bring overall financial crisis and economic problems. However, substantial amount of studies have not conducted to investigate the status of banks financial performance as well as the determinants of financial performance of the Ethiopian banking system according to the researchers knowledge. This research examined the internal and external factors that determine the financial performance of Ethiopian commercial banks industry from the period 2000-2014. Moreover, the current banking failures in the developed countries and the bailouts thereof motivated this study to evaluate the determinants of financial performance of Commercial banks in Ethiopia. Thus, to take protective and qualifying measures, there is dire need to understand the performance of banks and its determinants.

1.2 Statement of the problems

In the dynamic globalized world, Commercial Banks plays an important role as financial mediators in the economic development of the nation. Banks collect financial resources from individuals and organizations, and redistribute it to others so as to have further benefit. (Okoth,V & Gemechu,B, 2013). They do so, if they get necessary earnings to cover their operational cost they incur. That is to say, for sustainable intermediation function, banks need to be profitable.

Beyond the intermediation function, the financial performance of banks has critical implications for economic growth of countries. Good financial presentation of Banks rewards the shareholders for their investment. This in turn, gives confidence for additional investment and brings about economic growth. On the other hand, poor bank performance may lead to banking failure and crisis which have negative consequence on the economic growth (Okoth,V & Gemechu,B, 2013).

Nowadays, examining the performance of commercial banks become very crucial for their profitable survival. The survival of commercial Banks in this dynamic economic environment is very dependent upon their good performance that based on scientific investigation. So, its wellbeing and successful operation captures the interest of different researchers and other professionals. Thus, a number of studies have examined the determinants of banks' performance in many countries around the world. For instance, (Nassreddine, et al , 2013) for Tunisian banks, (Okoth,V & Gemechu,B, 2013) for Kenyan banks, (Ezra, 2013) for SSA banks, (Tan & Floros, 2012)for China banks, (Sarita, et al, 2012) for Indonesian banks, (Dietrich & Wanzenried, 2009)for Switzerland banks, (Sufian F., 2011)for Korean banks, (Sufian & Shah, 2009)for Bangladesh banks and others undertook studies on financial performance of bank. Even though, all these and other researchers conducted study on this area, the determinants of financial performance have been debated for many years and still unsolved issues in the corporate finance literature. Indeed what makes the financial performance determinants debate exciting is the determinants are dynamic through time to time and differ with the nature of operating of the firm from place to place (Flamini, et al, 2009).

Studies show, there are no universally accepted findings on what determines financial performance of the banking sector, because countries vary each other in their economic systems, financial systems, political systems and operating environments.

Specifically in Ethiopia the banking sector is unstudied area, though, few studies have been conducted on financial performance of Ethiopian commercial banks. For instance, study conducted on financial performance and ownership structure of Ethiopian commercial banks (Deepak & Abebaw, 2011) indicated that, even if, after 1994 financial liberalization the numbers of banks in the industry (particularly private banks) are increased and the performance progress of the sector is better than the past. However, Ethiopia financial sector remains closed and is much less developed than its neighbors. In addition to this, other study conducted by (Belayneh, 2011) examined the determinants of profitability at internal and external level and conclude that, Ethiopian commercial banks profitability affected by other additional factors. Thus, the main purpose of the study is then to identify the determinants of Ethiopian commercial banks financial performance for the fiscal year from 2000 to 2014. In addition, to examine the relationship among measures such as capital adequacy, asset quality, Earnings ability, liquidity management, Bank size and Foreign exchange rate to evaluate their impact on banks financial performance which measured by Return on Asset (ROA), Return on Equity (ROE) and Net Interest Margin (NIM). According to the knowledge of the researcher previous studies conducted does not include Earning ability and Foreign exchange rate in their study. This study includes these two variables to examine their effect on financial performance of Ethiopian commercial banks.

1.3 Objective of the study

1.3.1 General objectives

The main objective of the study is to investigate the internal and external determinants of Ethiopian commercial banks financial performance over the period 2000 - 2014.

1.3.2 Specific objective

Specifically, the study addresses the following objectives;

- ❖ To determine the effect of capital adequacy on the financial performance of Commercial banks.
- ❖ To assess the influence of Asset quality on the financial performance of commercial banks.
- ❖ To explore the significance of earning ability on the financial performance of Commercial Banks.
- ❖ To examine the influence of liquidity management on the financial performance of commercial banks.
- ❖ To determine the effect of Bank size on the financial performance of commercial banks.
- ❖ To examine the effect of foreign exchange rate on financial performance of Commercial banks.

1.4 Hypotheses of the study

Based on the objective, the study was tested the following hypothesis:

Hypothesis 1: *There is positive and significant effect between capital adequacy and financial performance of commercial banks.*

Hypothesis 2: *There is negative and significant effect between asset quality and financial performance of commercial banks*

Hypothesis 3: *There is negative and significant effect between earning ability and financial performance of commercial banks.*

Hypothesis 4: *There is positive and significant effect between liquidity management and financial performance of commercial banks.*

Hypothesis 5: *There is positive and significant effect between Bank size and commercial banks financial performance.*

Hypothesis 6: There is positive and significant effect between foreign exchange rate and financial Performance of commercial banks.

1.5 Significance of the Study

Like any other third world nation, the banking industry in Ethiopia is become important source of financing different business segments that operating in the nation. Due to this fact, this study which deals with the determinants of financial performance of commercial banks in Ethiopia is beneficial for different stakeholders such as management/Administration (interested in identifying indicators of success and failure to take the necessary actions to improve the performance of the company and choose the right decisions.), Government (interested in knowing which companies operate successfully or failed to take the necessary measures to avoid crises of the bankruptcy in these companies.), Investors (interested in such studies in order to protect their investment, and directing it to the best investment.) and Customers (interested in knowing the ability of Commercial banks to deposit their make deposit based on the indicators of success of the companies.)

This research has significant role to play in shading light on how to better understand what determines Commercial banks financial performance in Ethiopia. Furthermore, this study has a paramount importance in providing a better ground for bank managers, business professionals, business initiatives and policy makers. The study will also initiate bankers to give due emphasis on the management of identified variables which will boost profit. Furthermore, the supposed study might be used for further study in the banking sector.

1.6 Scope of the Study

The scope of the study limited to assess the determinants of commercial banks financial performance in Ethiopia By using fifteen years (2000-2014G.C) audited financial statements of each commercial bank. The study comprised all commercial banks which have at least fifteen years data. As a result, out of the eighteen commercial banks in Ethiopia including the largest government owned bank Commercial bank of Ethiopia, Awash international bank S.c., Bank of Abyssinia, Dashen bank, Wegagen bank, United bank and Nib international bank. The study

used three dependent and six independent variables i.e. the dependent variables were return on asset (ROA), return on equity (ROE) and net interest margin (NIM) and six independent variables were capital adequacy (CA), asset quality (AQ), earning ability (EA), liquidity management (LM), bank size (BS) and foreign exchange rate (FEXRA).

1.7 Limitation of the Study

Even if there are many variables that affect commercial banks profitability the study was concentrated only on six variables (capital adequacy, asset quality, earning ability, liquidity management, bank size and foreign exchange rate). Secondary data for fifteen years (2000-2014) collected from sampled seven Ethiopian commercial banks. And the analysis and its derived conclusions based on the secondary data sources (i.e. mainly on published annual reports).

1.8 Organization of the paper

This study consists of five chapters. Chapter one presents introduction, statement of the problem, objective of the study, hypotheses, scope and limitations and significance of the study. Chapter Two reviews the most significant theoretical and empirical studies. Chapter three presents methodology of the study. Then chapter four provides data analysis and presentation of econometric model outcomes and finally, chapter five gives summary, conclusions and recommendations with policy implication and further research direction.

CHAPTER TWO

Review of Related Literature

2.1 Theoretical framework

It is obvious that a sound and profitable banking sector is able to endure negative shocks and contribute to the stability of the financial system (Athanasoglou, Sophocles, & Matthaïos, 2005) Moreover, commercial banks play a significant role in the economic growth of countries. Through their intermediation function banks play a vital role in the efficient allocation of resources of countries by mobilizing resources for productive activities. They transfer funds from those who don't have productive use of it to those with productive venture. In addition to resource allocation good bank performance rewards the shareholders with sufficient return for their investment. When there is return there shall be an investment which, in turn, brings about economic growth. On the other hand, poor banking performance has a negative repercussion on the economic growth and development. Poor performance can lead to runs, failures and crises. Banking crisis could entail financial crisis which in turn brings the economic meltdown as happened in USA in 2007 (Marshall, 2009) That is why governments regulate the banking sector through their central banks to foster a sound and healthy banking system which avoid banking crisis and protect the depositors and the economy (Heffernan, (1996); Shekhar & Lekshmy, 2007) Thus, to avoid the crisis due attention was given to banking performance.

A more organized study of bank performance started in the late 1980's (Olweny & Shiphó, 2011) with the application of Market Power (MP) and Efficiency Structure (ES) theories (Athanasoglou, Sophocles, & Matthaïos, 2005) The MP theory states that increased external market forces results into profit. Moreover, the hypothesis suggest that only firms with large market share and well differentiated portfolio (product) can win their competitors and earn monopolistic profit. On the other hand, the ES theory suggests that enhanced managerial and scale efficiency leads to higher concentration and then to higher profitability. According to Nzongang and Atemnkeng in (Olweny & Shiphó, 2011) balanced portfolio theory also added additional dimension into the study of bank performance. It states that the portfolio composition of the bank, its profit and the return to the shareholders is the result of the decisions made by the management and the overall policy decisions. From the above theories, it

is possible to conclude that bank performance is influenced by both internal and external factors. According to (Athanasoglou, Sophocles, & Matthaios, 2005) the internal factors include bank size, capital, management efficiency and risk management capacity. The same scholars contend that the major external factors that influence bank performance are macroeconomic variables such as interest rate, inflation, economic growth and other factors like ownership.

2.1.1. Overview of banking history in Ethiopia

The first bank called Bank of Abyssinia was inaugurated in Feb. 16, 1906 following the agreement that was reached in 1905 between Emperor Minilik II and Mr. Ma Gillivray, representative of the British owned National Bank of Egypt marked the introduction of modern banking in Ethiopia. The Bank was totally managed by the Egyptian National Bank.

Within the first fifteen years of its operation, Bank of Abyssinia opened branches in different areas of the country. In 1906 a branch in Harar (Eastern Ethiopia) was opened at the same time of the inauguration of Bank of Abyssinia in Addis Ababa. Another at Dire Dawa was opened two years later and at Gore in 1912 and at Dessie and Djibouti in 1920. Mac Gillivray, the representative and negotiator of Bank of Egypt, was appointed to be the Governor of the new Bank and he was succeeded by H Goldie, Miles Backhouse, and CS Collier were in charge from 1919 until the bank's liquidation in 1931.

Generally, in its short period of existence, Bank of Abyssinia had been carrying out limited business such as keeping government accounts, some export financing and undertaking various tasks for the government. Moreover, the Bank faced enormous pressure for being inefficient and purely profit motivated and reached an agreement to abandon its operation and be liquidated in order to disengage banking from foreign control and to make the institution responsible to Ethiopia's credit needs. Thus by 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 (NBE, 2009/10,) and established by an official decree on August 29, 1931 with capital of £750,000. Bank of Egypt was willing to abandon its concessionary rights in return for a payment of Pound Sterling 40,000 and the transfer of ownership took place very smoothly and the

offices and personnel of the Bank of Abyssinia including its manager, Mr. Collier, being retained by the new Bank. Ethiopian government owned 60 percent of the total shares of the Bank and all transactions were subject to scrutiny by its Minister 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, DebreTabor, Harar, agency in Gambella and a transit office in Djibouti continued successfully until the Italian invasion in 1935. During the invasion, the Italians established branches of their main banks namely Banco di Italia, Banco di Roma, Banco di Napoli and Banco Nazionale del lavoro and started operation in the main towns of Ethiopia. However, they all ceased operation soon after liberation except Banco di Roma and Banco di Napoli which remained in Asmara. In 1941 another foreign bank, Barclays Bank, came to Ethiopia with the British troops and organized banking services in Addis Ababa, until its withdrawal in 1943. Then on 15th April 1943, the State Bank of Ethiopia commenced full operation after 8 months of preparatory activities. It acted as the central Bank of Ethiopia and had a power to issue bank notes and coins as the agent of the Ministry of Finance. In 1945 and 1949 the Bank was granted the sole right of issuing currency and deal in foreign currency. The Bank also functioned as the principal commercial bank in the country and engaged in all commercial banking activities.

The State Bank of Ethiopia had established 21 branches including a branch in Khartoum, Sudan and a transit office on 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 creating National Bank of Ethiopia (NBE) and commercial Bank of Ethiopia (CBE). Moreover it allowed foreign banks to operate in Ethiopia limiting their maximum ownership to be 49 percent while the remaining balance should be owned by Ethiopians.

There were two other banks in operation namely Banco di Roma S. C. and Bank of di Napoli S.C. that later reapplied for license according to the new proclamation each having a paid up capital of Eth. Birr 2million. The first privately owned bank, Addis Ababa Bank S.C., was established on Ethiopians initiative and started operation in 1964 with a capital of 2 million in association with

National and Grindlay Bank, London which had 40 percent of the total share. In 1968, the original capital of the Bank rose to 5.0 million and until it ceased operation, it had 300 staff at 26 branches.

There were other financial institutions operating in the country like the Imperial Savings and Home Ownership Public Association (ISHOPA) which specialized in providing loans for the construction of residential houses and to individuals under the guarantee of their savings. There was also the Saving and Mortgage Corporation of Ethiopia (SMCE) whose aims and duties were to accept savings and trust deposits account and provide loans for the construction, repair and improvement of residential house, commercial and industrial buildings and carry out all activities related to mortgage operations. On the other hand, there was a bank called agricultural bank that provides loan for the agricultural and other relevant projects established in 1945. But in 1951 the investment bank of Ethiopia replaced it. In 1965, the name of the bank once again hanged to Ethiopian Investment Corporation Share Company and the capital was raised to Eth. Birr 20 million, which is fully paid up. However, proclamation No. 55 of 1970 established the agricultural and Industrial Development bank Share Company by taking over the asset and liability of the former Development Bank and Investment Corporation of Ethiopia.

Following the declaration of socialism in 1974 the government extended its control over the whole economy and nationalized all large corporations. Organizational setups were taken in order to create stronger institutions by merging those that perform similar functions. Accordingly, the three private owned banks, Addis Ababa Bank, Banco di Roma and Banco di Napoli Merged in 1976 to form the second largest Bank in Ethiopia called Addis Bank with a capital of Eth. birr 20 million and had a staff of 480 and 34 branches. Before the merger, the foreign participation of these banks was first nationalized in early 1975. Then Addis Bank S.C. and Commercial Bank of Ethiopia were merged by proclamation No.184 of August 2, 1980 to form the sole commercial bank in the country till the establishment of private commercial banks in 1994. The Commercial Bank of Ethiopia commenced its operation with a capital of Birr 65 million, 128 branches and 3,633 employees. The Savings and Mortgage Corporation S. C and Imperial Saving and Home Ownership Public Association were also merged to form the Housing and Saving Bank with working capital of Birr 6 million and all rights, privileges, assets and liabilities were transferred by proclamation No.60, 1975 to the new bank.

Proclamation No. 99 of 1976 brought in to existence the Agricultural and Industrial Bank, which was formed in 1970 as a 100 percent state ownership, was bought under the umbrella of the National Bank of Ethiopia. Then it was reestablished by proclamation No. 158 of 1979 as a public finance agency possessing judicial personality and named Agricultural and Development Bank (AIDB). It was entrusted with the financing of the economic development of the Agricultural, Industrial and other sectors of the national economy extending credits of medium and long-term nature as well as short-term agricultural production loans.

The financial sector that the socialist oriented government left behind constituted only three banks and each enjoying monopoly in its respective market, the following was the structure of the sector at the end of the era: The National Bank of Ethiopia (NBE), the commercial Bank of Ethiopia (CBE) and Agricultural and Industrial Development Bank (AIDB).

Following the fall of the Dergue regime in 1991 that ruled the country for 17 years under the rule of command economy, the EPRDF declared a liberal economy system. In line with this, Monetary and Banking proclamation of 1994 established the National Bank of Ethiopia 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. Consequently after the proclamation issued private equity holders began to join the Ethiopian banking industry and as of (January, 2015) eighteen commercial banks are operated and out of this sixteen are private owned.

Table 1 List of Commercial Banks in Ethiopia

No.	Name of Commercial Banks	Year established
1	Construction and Business Bank (CBE)	1983
2	Commercial Bank of Ethiopia (CBE)	1963
3	Awash International Bank S.C (AIB)	1994
4	Dashen Bank S.C (DB)	1995
5	Bank Of Abyssinia S.C (BOA)	1996
6	Wegagen Bank S.C (WB)	1997
7	United Bank S.C (UB)	1998
8	Nib International Bank S.C (NIB)	1999
9	Cooperative Bank Of Oromia S.C (CBO)	2005
10	Lion International Bank S.C (LIB)	2006
11	Oromia International Bank S.C (OIB)	2008
12	ZemenBank S.C (ZB)	2009
13	Bunna International Bank S.C (BIB)	2009
14	Berhan International Bank S.C (BBI)	2010
15	AbayBank S.C (AB)	2010
16	Addis International Bank S.C (AdIB)	2011
17	Dehub Global Bank S.C (DGB)	2012
18	Enat Bank S.C (EB)	2013

Source NBE annual report 2013/14

2.1.2 Bank Performance Indicators

Good Financial performance is the ultimate goal of commercial banks. All the strategies designed and activities performed thereof are meant to realize this grand objective. However, this does not mean that commercial banks have no other goals. Commercial banks could also have additional social and economic goals. However, the intention of this study is related to the first objective, financial performance. Studies made on the financial performance of commercial Banks largely used Return on Asset(ROA), Return on Equity(ROE) and Net Interest Margin (NIM) as a common measure (Murthy & Sree, 2003; Alexandru, 2008; Ezra, 2013).As concluded by extensive Prior academic research there are different accounting based measures for banks'' profitability. For instance, Return on Equity (ROE) used by (Goddard, J., Molyneux, P. and Wilson, S. J., 2004), Return on Assets (ROA) used by (Flamini, McDonald, & Schumacher, 2009), the Return on Equity (ROE) and Return on Assets (ROA) utilized by (Athanasoglou, Delis, & Staikouras , 2006) and (Ommeren, 2011), ROE, ROA and Profit Earning Ratio (PER) applied by (Moin, 2008)and among others, (Huizinga & Demirguc - Kunt, 1999)uses the net interest margin (NIM) as proxy for banks'' Financial performance.

2.1.2.1 Return on Equity (ROE)

ROE is a financial ratio that refers to how much profit a company earned compared to the total amount of shareholder equity invested or found on the balance sheet. ROE is what the shareholders look in return for their investment. A business that has a high return on equity is more likely to be one that is capable of generating cash internally. Thus, the higher the ROE the better the company is in terms of profit generation. It is further explained by (Khrawish, 2011)that ROE is the ratio of Net Income after 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 the ROE the more effective the management in utilizing the shareholders capital.

2.1.2.2 Return on Asset (ROA)

ROA is also another major ratio that indicates the profitability of a bank. It is a ratio of Income to its total asset (Khrawish, 2011). It measures the ability of the bank management to generate income

by utilizing company assets at their disposal. In other words, it shows how efficiently the resources of the company are used to generate the income. It further indicates the efficiency of the management of a company in generating net income from all the resources of the institution (Khrawish, 2011). (Wen, 2010), state that a higher ROA shows that the company is more efficient in using its resources.

2.1.2.3 Net Interest Margin (NIM)

NIM is a measure of the difference between the interest income generated by banks and the amount of interest paid out to their lenders (for example, deposits), relative to the amount of their interest earning assets (Loans and Advances). It is usually expressed as a percentage of what the financial institution earns on loans in a specific time period and other assets minus the interest paid on borrowed funds divided by the average amount of the assets on which it earned income in that time period (the average earning assets). The NIM variable is defined as the net interest income divided by total earnings assets (Loans and Advances) (Gul, Faiza, & Khalid, 2011).

Net interest margin measures the gap between the interest income the bank receives on loans and advances and interest cost of its borrowed funds. It reflects the cost of bank intermediation services and the efficiency of the bank. The higher the net interest margin, the higher the bank's profit and the more stable the bank is. Thus, it is one of the key measures of bank profitability. However, a higher net interest margin could reflect riskier lending practices associated with substantial loan loss provisions (Khrawish, 2011).

2.1.3 Determinants of Bank Performance

The determinants of bank performances can be classified into bank specific (internal) and macroeconomic (external) factors (Al-Tamimi & Hassan , 2010; Aburime U. , 2005). These are stochastic variables that determine the output. Internal factors are individual bank characteristics which affect the banks performance. These factors are basically influenced by internal decisions of management and the 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.

2.1.3.1 Bank Specific Factors/Internal Factors

As explained above, the internal factors are bank specific variables which influence the profitability of specific bank. These factors are within the scope of the bank to manipulate them and that they differ from bank to bank. These include Capital Adequacy, Asset Quality, Management Efficiency, Earnings Ability, Liquidity and Bank size (Dang & Uyen, 2011). Each of these indicators is further discussed below.

➤ *Capital Adequacy*

Capital is one of the bank specific factors that influence the level of bank profitability. Capital is the amount of own fund available to support the bank's business and act as a buffer in case of adverse situation (Athanasoglou, Sophocles, & Matthaios, 2005). Banks capital creates liquidity for the bank due to the fact that deposits are most fragile and prone to bank runs. Moreover, greater bank capital reduces the chance of distress (Dang & Uyen, 2011). However, it is not without drawbacks that it induce weak demand for liability, the cheapest sources of fund Capital adequacy is the level of capital required by the banks to enable them withstand the risks such as credit, market and operational risks they are exposed to in order to absorb the potential loses and protect the bank's debtors. According to (Dang & Uyen, 2011), the adequacy of capital is judged on the basis of capital adequacy ratio (CAR). Capital adequacy ratio shows the internal strength of the bank to withstand losses during crisis. Capital adequacy ratio is directly proportional to the resilience of the bank to crisis situations. It has also a direct effect on the profitability of banks by determining its expansion to risky but profitable ventures or areas (Sangmi & Tabassum, 2010).

Capital adequacy is a reflection of the internal strength of a bank, which would stand it in good stead during the times of crisis. Capital adequacy may have a bearing on the overall performance of a bank, like opening of new branches, fresh lending in high risk but profitable areas, manpower recruitment and diversification of business through subsidiaries or through specially designated branches, as the Commercial banks could think these operational dimensions to the bank's capital adequacy achievement (Shankar, 1997).The NBE has set specific measure of the capital adequacy position of Banks, which is the ratio the Capital adequacy Ratio (CAR) (NBE

Directives No.SBB/9/95). The directive clearly set out the computation mechanism and the conversion factors for both on and off-balance sheet items and strictly set for all banks not to maintain their capital level below 8% of their risk weighted assets.

Capital adequacy is measuring by the ratio of equity capital to total risk weighted assets. It is sometimes mention as capital structured by great deal of literatures. Bank equity capital can be seen in two dimensions as stated by (Brooks, 2008) that is the amount contributed by the owners of a bank (paid-up share capital) that gives them the right to enjoy all the future earnings and the amount of owners' funds available to support a bank's business which includes reserves, and is also termed as total share holders' funds. Bank's capital is widely used as one of the determinants of bank profitability since it indicates the financial strength of the bank (Athanasoglou, Sophocles, & Matthaïos, 2005).

(Aburime U. T., 2008) Suggested that the bank level of safety will be achieves through the high capital requirement which generate positive net benefit. The degree of security exceeded the level maximizing net benefits. Capital adequacy requirements generally aim to increase the stability of a national banking system by decreasing the likelihood of a bank failure and a number of negative externalities exist in banking that cause risk to systematically under price.

Studies dealing about the capital adequacy are stated and concluded as follows. (Athanasoglou, Sophocles, & Matthaïos, 2005) Study on the effects of bank - specific, industry - specific and macroeconomic determinants of profitability on Greek bank from the period 1985 - 2001, based on the empirical framework that incorporates the traditional structure - conduct - performance (SCP) hypothesis. Applying General Movement Method (GMM) used a panel data, the investigation demonstrated that the existence of Positive correlation between returns and capital. Another research conducted by (Flamini, McDonald, & Schumacher, 2009) on the determinants of commercial banks profitability in Sub - Saharan Africa by taking 389 sample banks in 41 SSA countries, they measuring profitability by return on asset indicators. They founded that capital adequacy has positive and significant effect on profitability.

Other researcher (Berger, 1995) found that capital adequacy ratio affected ROA of USA banks positively in 1983-1989 and negatively in 1989-1992. Based on these results, Berger argued that the relationship between capital adequacy ratio and profitability depending on

the specific circumstances of the time period observed. According to the results of the study, a high capital adequacy ratio positively affects profitability when financial situation of banks is perceived as risky and it negatively affects profitability in normal situations due to alternative cost of capital. The main problem in benefiting from this result is the difficulty of determining an optimal level for the capital adequacy ratio.

Similar studies conducted on developing countries founded and concluded that; capital adequacy is significant company level determinants of profitability. According to (Naceur & Goaid, 2001) investigation the impact of bank-specific, industry-specific and, macroeconomic determinants of bank's net interest margins and return on asset in the Tunisian banking industry for the 1980-2000 period. The result shows that high net interest margin and return on asset (profitability) tend to be associated with banks that hold a relatively high amount of capital. As determined by (Aburime U. T., 2008) company level determinants of bank profitability evidence from Nigeria. Using a panel data set consist of 91 observations of 33 banks over the 2000 – 2004 period. Regression desired outcomes reveled that capital size is one of significant company level determinants of profitability. Though the results indicate that capital size is a significant determinant of bank profitability in Nigeria, only the size of the reserves component of bank capital has a significant relationship with bank profitability. But the shares component of bank capital does not have a significant relationship. According to (Belayneh, 2011) on the determinants of commercial banks profitability during the period 2001- 2010 by used Ordinary Least Square (OLS) and balanced panel data of seven Ethiopian commercial banks. The result from estimation shows that capital can significantly affect commercial banks profitability in Ethiopia. Following this he concluded that there is positive relationship between banks capital and profitability. And also the higher the capital level brings higher profitability for Ethiopian commercial banks since by having more capital; a bank can easily adhere to regulatory capital standards and the excess capital also can be provided as loans.

Generally, there is the presence of positive relationship between profitability and capital has been supported by (Athanasoglou, Sophocles, & Matthaïos, 2005; Flamini, Valentina , McDonald, & Liliana, 2009; Naceur & Goaid, 2001; Belayneh, 2011). Therefore, researchers widely suggest that the more capital a bank has, the more resistant it will be to failure.

➤ *Asset Quality*

The bank's asset is another bank specific variable that affects the profitability of a bank. The bank asset includes among others current asset, credit portfolio, fixed asset, and other investments. Often a growing asset (size) related to the age of the bank (Athanasoglou, Sophocles, & Matthaios, 2005). Loan is the major asset of commercial banks from which they generate income. The quality of loan portfolio determines the profitability of banks. The loan portfolio quality has a direct bearing on bank profitability. The highest risk facing a bank is the losses derived from delinquent loans (Dang & Uyen, 2011). Thus, nonperforming loan ratios are the best proxies for asset quality. Different types of financial ratios used to study the performances of banks by different scholars. It is the major concern of all commercial banks to keep the amount of nonperforming loans to low level. This is so because high nonperforming loan affects the profitability of the bank. Thus, low nonperforming loans to total loans shows that the good health of the portfolio a bank. The lower the ratio the better the bank performing (Sangmi & Tabassum, 2010).

The asset quality is measure an ability to manage credit risk for a bank or financial institution. The asset quality reflects the composition and productivity of the assets. Thus, asset quality has a direct impact on the profitability of a bank. As per (Yuqi , 2006), in terms of risk poor asset quality is the major cause for banks poor profitability. It is evaluated by understanding the performance of assets category wise and estimating future performance factoring in the likely distribution of the assets in future. The bank's experience of loan loss, provisions/ write off, loan recovery rate, ability to reduce nonperforming assets and extent of weak assets are analyzed in this regard (Financial Management and Analysis of Projects 2006).

Many empirical evidences stated that asset quality has direct impact on the profitability of banks. The quality of assets particularly, loan assets and investments, would depend largely on the risk management system of the bank. The value of loan assets would depend on the realizable value of the collateral while investment assets would depend on the market value. (Deepak & Abebaw, 2011) Used ratio of Nonperforming assets (loans) to total loans and advances (NPL) as an indicator of bank's asset quality. They stated that the amount of nonperforming assets has a direct implication in the profitability of the bank that is if the proportion of the non performing assets in relation to

total loans increase the profitability will be decreased and vice versa.

➤ ***Earning Ability***

The quality of earnings is a very important criterion which represents the quality of bank's profitability and its capability to maintain quality and earn consistently. It primarily determines the profitability of bank and explains its sustainability and growth of future earnings (Khrawish, 2011).

The quality and trend of earnings of a bank depend largely on how well the management manages the assets and liabilities of the bank. A bank must earn reasonable profit to support asset growth, build up adequate reserves and enhance shareholders' value. Good earnings performance would inspire the confidence of depositors, investors, creditors, and the public at large (Financial Management and Analysis of Projects 2006).

The quality of earnings of a bank determines the ability of the entity to meet debt obligations, the rate of growth of assets, reserves and ultimately the shareholders' value. The quality of earning coupled with the costs impacts the profitability. The quality of earning is also affected by the extent of asset liability mismatch and the resultant volatility in earnings due to changes in the interest rate (Bikker & Hu, 2002). Generally a bank that depends more on leverage will experience more volatile earnings and this also affects the credit creation and liquidity function of the bank (Tobias & Themba , 2011).

➤ ***Liquidity Management***

Liquidity is another factor that determines the level of bank performance. Liquidity refers to the ability of the bank to fulfill its obligations, mainly of depositors. According to (Dang & Uyen, 2011)adequate level of liquidity is positively related with bank profitability. The most common financial ratios that reflect the liquidity position of a bank according to the above author are customer deposit to total asset and total loan to customer deposits. Other scholars use different financial ratio to measure liquidity. For instance (Ilhomovich, 2009) used cash to deposit ratio to measure the liquidity level of banks in Malaysia. However, the study conducted in China and Malaysia found that liquidity level of banks has no relationship with the performances of banks (Said & Mohd, 2011). In the Ethiopian context there seems clear measure of the liquidity: the liquid

asset to deposit ratio, which the National Bank of Ethiopia, has set the minimum liquid asset of the Bank not to be less than 15% of the Bank's net current liability. Out of this the directive obliged banks to hold 5% of them in primary reserve assets (NBE Directives No.SBB/9/95).

➤ *Bank Size*

Bank size which is measured by total deposits (Dietrich & Wanzenried, 2009) and Al-Alami (1991) or assets (Smirlock, 1985) is one of the control variables that determines the financial performance of the commercial banks. Studies conducted on determinants of bank profitability took bank size variable, as considered to an important determinant of bank performance (Kosmidou K. , 2008). If the relative size of a firm expands its market power and profits increases, this is the Market-Power (MP) hypothesis. The hypothesis also referred to as the Structure Conduct-Performance (SCP) hypothesis (Athanasoglou, Sophocles, & Matthaïos, 2005).

One of the most important questions underlying bank policy is which size optimizes bank profitability, because there is no clear cut point which indicates the relation of appropriate bank size and its profitability? The effect of a growing size on profitability has proved positive to a certain extent. However, for banks that become extremely large, the effect of size could be negative due to bureaucratic and other reasons (Athanasoglou, Sophocles, & Matthaïos, 2005).

The different studies regarding bank size concluded mixed empirical results. Some studies found economies of scale for large banks (e.g. (Athanasoglou, Delis, & Staikouras , 2006) South Eastern European banks and (Kosmidou K. , 2008) on Greece banks and others concluded that diseconomies of scale for large banks due to possible bureaucratic bottlenecks and managerial inefficiencies or economies of scale for small banks (e.g. (Athanasoglou, Sophocles, & Matthaïos, 2005) on Greece banks, (Aburime U. T., 2008) on Nigeria banks and (Ngo, 2006) Australian bank. As extensive researchers pointed out the expected sign of bank size is ambiguous. Hence, the size-profitability relationship may expect to be non-linear. The researcher uses the natural logarithm of total Assets as a proxy for bank size.

Research conducted by (Belayneh, 2011) on the determinants of commercial banks profitability during the period 2001 - 2010 concluded that the size of all Ethiopian commercial banks which is

measured by log of total asset is increased for the last 10 years. In case of Ethiopian commercial banks, as the result implies that larger banks enjoy the higher profit than smaller banks in Ethiopia banking sector because they are exploiting the benefit of economies of scale.

In the literature, asset and/or deposit base of banks have adopted as proxy for their size. At times, their market shares of assets and/or deposit have also used. The second set of measures, however, follows from the first. According (Aburime U. T., 2008) investigation on Nigerian banking industry on the area of bank performance and supervision by adopted the data envelopment analysis approach founded that; the profitability of the bigger banks is significantly higher than that of the smaller banks.

The impact of a bank's size on its profitability is not uniform. In a study of European banks for the period of 1992 to 1998, (Goddard, J., Molyneux, P. and Wilson, S. J., 2004) identified only slight relationship between size and profitability. Some of earlier studies have different results. (Smirlock, 1985) Proves a significant and positive impact of a bank's size on its profitability. (Short, 1979) Goes further by claiming that bank size has a positive influence on profitability through lowering the cost of raising capital for big banks. Later, studies by (Hu & Bikker, 2002) And (Goddard, J., Molyneux, P. and Wilson, S. J., 2004) support the proposition that increasing a bank's size positively affects profitability through cost of capital. However, there is no consensus in the literature on whether an increase in size provides economies of scale to banks. For example, some researches including (Berger, 1995) claim that there is no significant relationship between profitability and size.

Bank Size is described by the accounting value of banks total assets. Size is an important determinant of profitability. The effect of a bank's size on profitability is not settled in the literature. We expect a positive effect on earnings to be derived from economies of scale and lower perceived probability of default of larger banks. However, increase in size can lead to decreasing profits for banks due to cumbersome bureaucracy. In attempt to track a possible non-linear relationship between banks' profits and size we include size squared into the model. Deposits measured relatively to banks size have a negative impact on bank performance. This is unexpected, since banks normally should strive to attract more deposits as a source of funds.

However, (Badola & Verma , 2006) also found a negative effect of deposits to interest margin in Ukrainian banking.

Total assets are measure of bank size. In the balance sheet, bank assets consist of short and long term in nature. In order to capture possible non-linear relationship between size and profitability, the use of logarithm of total assets as a proxy for bank size is paramount. The rationale behind this thinking is because large banks are more likely to benefit from economies of scale. In this study it is assumed the bigger the bank size the higher the profitability.

2.1.3.2 External Factors/ Macroeconomic Factors

Those factors which are beyond the management's control are referred as external or macroeconomic factors and these factors are related to the industry and macroeconomic factors. The external determinants are variables that are not related to bank management but reflect the economic and legal environment that affects the operation and performance of financial institutions. According to (Deepak & Abebaw, 2011), the external factors, they have a relatively small impact on the profitability of Ethiopian banks. Turning to the external determinants, several factors have been suggested as impacting on financial performance and for this study foreign exchange rate was used.

➤ *Foreign Exchange rate*

According to Demburg and McDougall (1980) Exchange rate is defined as the domestic price of foreign currency which can be determined either administratively or by the market forces of demand and supply of currencies through imports and exports respectively in the foreign exchange market. The importance of this definition is that it focuses on the concept of price as a nature of exchange rate. The basis for exchange rate determination has been on the premise of purchasing power parity (PPP) concept as enunciated by Cassel (1918). Purchasing power parity (PPP) concept defines exchange rate as the amount of the currency of one country, which endows the holder with the same amount of purchasing power. Expressed differently, purchasing power parity theory states that the same collection of goods purchased with different currencies should have same cost as measured in any of the currencies (Cooper and Fraser, 1990). The implication of the PPP in the short run is that a nation's currency will tend to

depreciate in the foreign exchange market when its rate of inflation exceeds that of other nations and appreciates when its inflation rate is the relatively lower (Cookey,1997).

Foreign Exchange risk arises when a bank holds assets or liabilities in foreign currencies and impacts the earnings and capital of bank due to the fluctuations in the exchange rates. No one can predict what the exchange rate will be in the next period, it can move in either upward or downward direction regardless of what the estimates and predictions were. This uncertain movement poses a threat to the earnings and capital of bank, if such a movement is in undesired and unanticipated direction (Evans, 2014). (Songul, 2013)Turkish banking sector's profitability factors found positive relationship between exchange rate and profitability. Thus this variable has significant and positive impact on profitability. Official exchange rate refers to the exchange rate determined by national authorities or to the rate determined in the legally sanctioned exchange market. It is calculated as an annual average based on monthly averages (local currency units relative to the U.S. dollar).

2.2 Review of Empirical studies

This section gives a brief review of the previous studies made on the determinants of bank performance from both developed and developing nations. Thus, empirical works done on the determinants of bank performance have focused on either a panel of countries (Masood & Ashraf, 2012; Huizinga & Demirguc - Kunt, 1999; Sufian & Shah, 2009; Ezra, 2013; Goddard, J., Molyneux, P. and Wilson, S. J., 2004) or on an individual country (Athanasoglou, Sophocles, & Matthaios, 2005; Kumbirai & Webb, 2010; Tan & Floros, 2012; Yadollahzadeh, Ahmadi, & Soltan, 2013; Dietrich & Wanzenried, 2009; Gul, Faiza, & Khalid, 2011; Sufian & Shah, 2009; Okoth,V & Gemechu,B, 2013; Ghazouani & Moussa, 2013; Alkhatib, 2012).Moreover, most of the studies undertaken on bank performance consider both internal and external factors to examine performance of banks. So, the determinants of bank performance studies conducted in a single country, panel country and studies made in Ethiopia related to bank performance are reviewed as follows.

2.2.1 Single country studies

(Athanasoglou, Sophocles, & Matthaios, 2005) Examine the effect of bank-specific, industry-specific and macroeconomic determinants of bank profitability; using an empirical framework that incorporates the traditional Structure-Conduct-Performance (SCP) hypothesis and they apply a GMM technique to a panel of Greek banks that covers the period 1985-2001. They used independent variables like Capital, credit risk, productivity, expense management, size, ownership, concentration, inflation and business cycle. According to the empirical results, capital is important in explaining bank profitability and that increased exposure to credit risk lowers profits. Additionally, labor productivity growth has a positive and significant impact on profitability, while operating expenses are negatively and strongly linked to it. The estimated effect of size does not provide evidence of economies of scale in banking. Likewise, the ownership status of the banks is insignificant in explaining profitability, denoting that private banks do not in general make relatively higher profits, at least during the period under consideration. Also, the SCP hypothesis is not verified, as the effect of industry concentration on bank profitability was found insignificant.

(Badola & Verma , 2006) Made an attempt to identify the key determinants of profitability of public sector banks in India. The analysis is based on step-wise multivariate regression model used on temporal data from 1991-92 to 2003-04. The study has brought out that the explanatory power of some variables is significantly high. Such variables include non interest income (NII), operating expenses (OE), provision and contingencies (P&C) and Spread. However, some variables namely credit/deposit ratio, NPAs and business per employee (BPE) are found with low explanatory power. Hence, the variables non-interest income, operating expenses, provision and contingencies and spread have a significant relationship with net profit. Among them two variables P&C and OE are found having negative relationship. Based on the result they conclude that control over non-performing assets, operating expenses, provision and contingencies are major areas of concern for the management of public sector banks.

(Kosmidou, Tanna, & Pasiouras, 2006) Investigates the impact of bank-specific characteristics, macroeconomic conditions and financial market structure on UK owned commercial banks' profits measured by return on average assets (ROAA) and net interest margins (NIM). An

unbalanced panel data set of 224 observations, covering the period 1995- 2002, provided the basis for the econometric analysis. The result of the study shows that capital strength, represented by the equity to assets ratio is the main determinant of UK banks' profits. The other significant determinants are cost-to-income ratio and bank size, both of which impact negatively on bank profits. Besides, the macroeconomic factors namely GDP growth and inflation has a positive impact on bank performance.

The objective of the study made by (Chan & Vong, 2008) was to examine the contribution of bank-specific as well as macroeconomic and financial structure factors to the variation in profitability across banks and over time in Macao by Utilizing bank level data for the period 1993-2007. They adopt the panel data regression to determine the important factors in achieving high profitability by using internal variables such as capital ratio, asset composition, fund source, asset quality, expense management, fee based services, tax and market share including external variables like GDP growth rate, real interest rate and inflation. They use ROA as a profitability measure. Their results reveal that capital strength of a bank positively affects profitability. On the other hand, the asset quality, as measured by the loan loss provisions, affects the performance of banks adversely. In addition, banks with a large retail deposit-taking network do not achieve a level of profitability higher than those with a smaller network. Finally, with regard to macroeconomic variables, only the rate of inflation reveals a significant relationship with banks' performance.

(Dietrich & Wanzenried, 2009)Examined how bank-specific characteristics, macroeconomic variables and Industry-specific factors affect the profitability of 453 commercial banks in Switzerland over the time period from 1999 to 2006.According to (Dietrich & Wanzenried, 2009), this is the first econometric study that has examined the important issue of the determinants of the banking profitability for the Swiss banking market. Besides, this study incorporates the influence of previously ignored factors such as, the growth of a bank's loans relative to the growth rate of the market, the share of interest income relative to total income, the effective tax rate, bank age or the yearly change of regional population in the regression model. They found that better capitalized bank seem to be more profitable. Also, in case that a bank's loan volume is growing faster than the market, the impact on bank profitability is positive. Looking at the effect of the share of interest income at total income, they found that banks with a

higher interest income share are less profitable. Bank age does not have an impact on bank profitability. As to the geographic distribution, banks in the Lake Geneva region, which is the second most important banking area in Switzerland, are slightly more profitable than banks in the Zurich region. Looking at the ownership variables, foreign banks are clearly less profitable than Swiss owned banks. Similarly, privately owned institutions have a slightly higher profitability compared to state-owned banks. GDP growth affects the bank profitability positively, and the effective tax rate and the market concentration rate, which both have a significantly negative impact on bank profitability.

The objective of the study made by (Alexiou & Sofoklis, 2009) was to identify the crucial factors that affected the profitability of the six major Greek commercial banks by using Panel data analysis over the period 2000- 2007 . In this case, ROA and ROE were the dependent variables while bank capital, credit risk, bank size, liquidity risk, operating cost, inflation rate, interest rate, GDP, private consumption and investment were the independent variables. Macroeconomic factors such as inflation and private Consumption appear to play a significant role in shaping the performance of banking institutions. Additionally, bank-specific variables, such as capital or measures of cost-efficiency, also play a critical role in determining bank profitability.

Study made by (Sufian & Shah, 2009)examines the performance of 37 Bangladeshi commercial banks between the year 1997 and 2004 by using an unbalanced bank level panel data. They found that bank specific characteristics, in particular loans intensity, credit risk, and cost have positive and significant impacts on bank performance, while non-interest income shows negative relationship with bank profitability. Regarding bank size results suggest that it is not uniform across the various measures employed. The empirical findings suggest that size has a negative impact on return on average equity (ROAE), while the opposite is true for return on average assets (ROAA) and net interest margins (NIM). Regarding the impact of macroeconomic indicators, they conclude that the variables have no significant impact on bank profitability, except for inflation which has a negative relationship with Bangladesh banks profitability.

(Kumbirai & Webb, 2010)Made study on the performance of South Africa’s commercial banking sector for the period 2005-2009. They employed financial ratios to measure the

profitability, liquidity and credit quality performance of five large South African commercial banks. They found that overall bank performance increased considerably in the first two years of the analysis. A significant change in trend is noticed at the beginning of the global financial crisis in 2007, reaching its peak during 2008-2009. This resulted in falling profitability, low liquidity and deteriorating credit quality in the South African Banking sector.

The study made by (Gul, Faiza, & Khalid, 2011) examined the relationship between bank specific and macro-economic characteristics of bank profitability by using data of top fifteen Pakistani commercial banks over the period 2005-2009. They used the pooled Ordinary Least Square (OLS) method to investigate the impact of assets, loans, equity, deposits, economic growth, inflation and market capitalization on major profitability indicators i.e., return on asset (ROA), return on equity (ROE), return on capital employed (ROCE) and net interest margin (NIM) separately. The empirical results have found strong evidence that both internal and external factors have a strong influence on the profitability.

(Sufian F., 2011) Studied bank specific and macroeconomic determinants of profitability by using an unbalanced bank level panel data set of Korean banks for the time period 1992-2003. He found that Korean banks with lower liquidity levels tend to show higher profitability. Furthermore, higher diversification regarding banks income sources towards derivative instruments and other fee based activities shows a positive effect. On the other hand, the impacts of credit risk and overhead costs are negative.

(Alkhatib, 2012) Empirically examine the financial performance of five Palestinian commercial banks listed on Palestine securities exchange (PEX). to assess the financial performance of Palestinian commercial banks, (Alkhatib, 2012) developed 3 models; each consists of one dependent variable and 4 identical independent variables. He used ROA as an internal financial performance indicator the Tobin's Q model (price/book) as a market financial performance indicator and finally the economic value added as an economic financial performance indicator. Bank size, credit risk, operational efficiency and asset management were used as independent variables. The study employed the correlation and multiple regression analysis of annual time series data from 2005-2010. the result of the research reveal that, bank size and asset management were positively related with ROA but credit risk and operational efficiency were negatively correlated with ROA under the first model. Under the second model

both bank size and asset management were positively correlated whereas credit risk and operational efficiency is negatively correlated with the market performance of banks measured by Tobin's Q. under the third model that is the model which use economic performance of banks measured by EVA, except operational efficiency, bank size, credit risk and asset management ratio were positively correlated with EVA.

(Lamarana, 2012)Examines the performance of the Malaysians local banks and foreign banks and compares their profitability in the financial sector. This comparative study aims to investigate the factors influencing bank profitability in Malaysia for the period 2005-2011 covering 16 major commercial banks (8 locally owned and 8 foreign owned). He uses ROA and ROE as a dependent variable. On the other hand, capital adequacy, asset quality, management efficiency, liquidity and bank size are the independent variables. The researcher use regression analysis to the panel data. The comparison between the two categories of ownership indicates that foreign banks are more profitable than domestic banks.

(Tan & Floros, 2012) took a sample of 101 banks (five state owned banks,12 joint-stock commercial banks and 84 city commercial banks) to examine the determinants of bank profitability in China for the period of 2003-2009 by using unbalanced bank level panel data. They examine the effects of inflation on bank profitability, while controlling for comprehensive bank-specific and industry-specific variables. They use ROA and NIM as a dependent variable. The study indicated that there is a positive relationship between bank profitability, cost efficiency, banking sector development, stock market development and inflation in China. The authors report that low profitability can be explained by higher volume of non-traditional activity and higher taxation.

The goal of the study conducted by (Yadollahzadeh, Ahmadi, & Soltan, 2013) was to examine the effective factors on the performance of commercial banks in Iran for nine commercial banks during 2006- 2010 using panel data regression method. They considered Return on asset and return on equity as dependent variables which are separately examined by explanatory variables including bank's size, gearing ratio, nonperforming loans, asset management, operating efficiency and capital adequacy ratio. Their research results show that the variables of bank's size, management efficiency and capital adequacy ratio have a positive effect on the

performance of commercial banks while the variables of operating efficiency, gearing ratio and non-performing loans have a negative effect on the performance.

(Weersainghe & Ravinda, 2013) examined the impact of bank specific such as Bank Size, Liquidity Risk, and Operating Cost, Capital adequacy, Credit Risk and macroeconomic determinants like GDP growth rate and Interest Rate on the profitability of commercial banks in Sri Lanka by using quarterly data relating to the bank specific and macroeconomic indicators during the period 2001-2011 and carrying out a multiple panel regression. Moreover, they used ROA and ROE as profitability indicator. According to the empirical results, it was observed that the large banks are recorded more profits due to economic of scale than the banks which are well sound with a higher regulatory capital ratio. Further, the results from the panel regression suggest that the liquidity and operating cost efficiency banks were negatively related to the commercial banks profitability in Sri Lankan. In addition, interest rate found to be having a significant impact on the bank profitability with a negative relationship between the Return on Assets of a bank.

By using linear multiple regression model and Generalized Least Square on panel data, (Okoth, V & Gemechu, B, 2013) studied the determinants of financial performance of commercial banks in Kenya for ten years from 2001 to 2010. They used independent variables like capital adequacy, asset quality, Management Efficiency, Liquidity Management, GDP Growth Rate, and Inflation Rate and ROA, ROE, and NIM, as a dependent variable. They found that bank specific factors significantly affect the performance of commercial banks in Kenya, except for liquidity variable. But the overall effect of macroeconomic variables was inconclusive at 5% significance level. The moderating role of ownership identity on the financial performance of commercial banks was insignificant.

The purpose of the study made by (Ghazouani & Moussa, 2013) is to empirically assess the main explanatory factors that might affect the banks performance in Tunisia. They use internal factors namely; size, capital ratio, credit quality, operational efficiency, bank deposit growth and ownership and the External factors include both industry-specific variables such as Concentration and size bank system and macroeconomic variables like GDP Growth and inflation. They use data from the 10 conventional commercial banks on the longest relevant

period from 1998 to 2011. They apply a dynamic panel data estimation approach, by employing the generalized method of moments (GMM). The empirical result suggests that the bank capitalization, as well as the best managerial efficiency, have a positive and significant effect on the bank performance. Private owned banks seem to be more profitable than state owned ones. Industry-specific factors, as the concentration and that of the system bank size have a negative and a significant effect on performance. As for the impact of the macroeconomic indicators, they conclude that the overall variables do not have a significant effect on bank performance. However Inflation seems to affect negatively bank's net interest margin.

The study made by (Berger, 1995) examines the determinants of foreign bank profitability and makes a comparison on performance of foreign banks and domestic banks using the fixed effects method. The sample is an unbalanced panel data set of 51 commercial banks operating in Vietnam from 2000 to 2012. He use ROA and NIM as a dependent variable and ratio of overhead costs, short term customer funding, equity, loans, loan loss provision and other income, to total assets; and total assets to the whole banking total assets, GDP growth rate, the inflation rate, the depth of the financial sector and institutional quality as explanatory variable. He argues that foreign bank profitability is influenced significantly by all bank specific factors, macroeconomic factors and multinational bank indicators. He found that total assets and other income have positive impact on profitability. Moreover, parent bank profitability indicates significant and negative influence on foreign bank profitability. Besides, foreign banks perform better than domestic banks due to their ownership advantage.

Study on the financial performance of the Naara rural bank in the upper east region of Ghana conducted by (Hadad, 2013) used the annual financial statements covering a period of eleven years (2000 to 2010). Multiple regression was the major statistical tool used to analyze the data collected from the Naara rural bank. The research is aimed at establishing empirically the relationship that exists between Naara rural banks financial performance on one hand and its credit portfolio, non-performing loan, liquidity and size (total asset) on the other hand. The result of the research reveals that liquidity and size were positively and significantly related to the performance of the bank. Although the effect of its loans portfolio is positive, its influence on performance is statistically insignificant. In addition, non-performing loans were also negative and significantly related to the performance of the bank.

2.2.2 Panel country studies

(Huizinga & Demirguc - Kunt, 1999) Using bank level data for 80 countries in the 1988-period, they show that differences in interest margins and bank profitability reflect a variety of determinants: bank characteristics, macroeconomic conditions, explicit and implicit bank taxation, deposit insurance regulation, overall financial structure, and several underlying legal and institutional indicators. Controlling for differences in bank activity, leverage, and the macroeconomic environment, they found that a larger bank asset to GDP ratio and a lower market concentration ratio lead to lower margins and profits. Moreover, foreign banks have higher margins and profits compared to domestic banks in developing countries, while the opposite holds in developed countries. Also, there is evidence that the corporate tax burden is fully passed on to bank customers.

(Mohana & Tekeste, 2012) Undertook study to analyze how bank characteristics and the overall financial environment affect the performance of Islamic banks. Utilizing bank level data, the study examines the performance indicators of Islamic banks across eight Middle Eastern countries between 1993 and 1998. A variety of internal and external banking characteristics were used to predict profitability and efficiency. In general, his analysis of determinants of Islamic banks' profitability confirms previous findings. Controlling for macroeconomic environment, financial market structure, and taxation, the results indicate that high capital-to-asset and loan-to-asset ratios lead to higher profitability. The results also indicate that foreign-owned banks are likely to be profitable. Everything remaining equal, the regression results show that implicit and explicit taxes affect the bank performance and profitability negatively while favorable macroeconomic conditions impact performance measures positively. His results also indicate that stock markets and banks are complementary to each other.

The profitability of European banks during the 1990s is investigated by (Goddard, J., Molyneux, P. and Wilson, S. J., 2004) using cross-sectional, pooled cross-sectional time-series and dynamic panel models. They use cross-sectional and dynamic panel estimation to investigate selected determinants of profitability in six major European banking sectors: Denmark, France, Germany, Italy, Spain and the UK, for the period 1992-98. Models for the determinants of profitability incorporate size, diversification, risk and ownership type, as well as dynamic effects.

Despite intensifying competition there is significant persistence of abnormal profit from year to year. The evidence for any consistent or systematic size-profitability relationship is relatively weak. The relationship between the importance of off-balance-sheet business in a bank's portfolio and profitability is positive for the UK, but either neutral or negative elsewhere. The relationship between the capital-assets ratio and profitability is positive.

(Sufian & Shah, 2009) Use a sample of 389 banks in 41 SSA countries to study the determinants of bank profitability from 1998 through 2006. Their study is based on an unbalanced panel of SSA commercial banks. They use the return on assets (ROA) as a measure of bank profitability. They use independent variables namely, credit risk, activity mix, capital, bank size, market power, GDP growth and inflation. They found that apart from credit risk, higher returns on assets are associated with larger bank size, activity diversification, and private ownership. Bank returns are affected by macroeconomic variables, suggesting that macroeconomic policies that promote low inflation and stable output growth do boost credit expansion. The results also indicate moderate persistence in profitability. Causation in the Granger sense from returns on assets to capital occurs with a considerable lag, implying that high returns are not immediately retained in the form of equity increases. Thus, the paper gives some support to a policy of imposing higher capital requirements in the region in order to strengthen financial stability.

(Masood & Ashraf, 2012) undertook study on the determinants of Islamic banks profitability in case of different countries by taking 25 banks out of 12 countries for the period of 2005-2010. The objective of their study was to inspect whether bank-specific and macro-economic determinants influence Islamic banks' profitability in the selected countries of different regions by using the balanced panel data regression model. They used ROA and ROE as profitability measure and considered both micro and macro variables as determinants of profitability. The micro determinants include asset size, capital adequacy, asset quality, liquidity, deposits, Assets Management, Operating efficiency, Gearing Ratio, Financial Risk and macro factors included GDP growth and inflation rate. Their study results reveals that, banks with larger assets size and with efficient management lead to greater return on assets and also their result shows that management efficiency regarding operating expenses positively and significantly affects the banks' profitability.

(Ezra, 2013)Undertake study on the determinants of commercial banks profitability in sub-Saharan Africa using an unbalanced panel of 216 commercial banks drawn from 42 countries in SSA for the period 1999 to 2006.He employed the random effect panel methods to estimate bank profitability. Growth in bank asset, growth in bank deposit, capital adequacy, operational efficiency, liquidity ratio, growth in GDP and inflation are an explanatory variable. The findings show that the bank level variables such as capital adequacy and growth in bank deposits have positive influence on bank profitability. According to the study, Positive growth of in these indicators could be results of banking sector liberalization that has been implemented in most of SSA countries since 1980s and 1990s. on the other hand, growth in bank assets, operational efficiency and bank liquidity indicators have negative effect on bank profitability. The negative effect of these indicators could be explained by disproportionate accumulation of assets through merger and acquisitions of foreign based banks at high costs that has occurred in SSA in the last two decades. On the other hand, negative effect of bank liquidity can be explained by low bank lending. For macro-economic variables, Francis M.E found that both growth in GDP and inflation had a negative effect on bank profitability.

2.2.3 Review of previous studies on Ethiopia

(Belayneh, 2011)Examine the impact of bank-specific, industry specific and macroeconomic determinants of Ethiopian commercial banks profitability that covers the period 2001- 2010 by applying the balanced panel data of seven Ethiopian commercial banks. He used the ROA as a dependent variable and capital, size, loan, deposits, noninterest income, noninterest expense, credit risk, market concentration, economic growth, inflation and saving interest rate as independent variables. The estimation results show that all bank-specific determinants, with the exception of saving deposit, significantly affect commercial banks profitability in Ethiopia. Market concentration is also a significant determining factor of profitability. Finally, with regard to macroeconomic variables, only economic growth exhibits a significant relationship with banks' profitability.

The study carried out by (Mohana & Tekeste, 2012)was to explore the key determinants of profitability of commercial banks operating in Ethiopia by using unbalanced panel data set of banks over the period 1999/00-2008/09. They used internal factors like capital adequacy,

liquidity, credit risk, loan portfolio, asset quality, and expense management and external factors related to the industry and the macroeconomic factors within which the banks operate. Moreover ROAA was used as dependent variable. In their analysis the fixed effects model is used to control the unobservable bank specific characteristics. The result of the study reveals that Capital adequacy (equity to asset ratio), diversification (non-interest income to total income) and bank size (log of total assets) are among the internal factors that have positive and significant impact on the profitability of Ethiopian commercial banks. Moreover, the loan loss reserve to total loans is also found to have negative impact on profitability though it is statistically insignificant. In addition to this, liquidity and operational efficiency are among the internal factors that negatively affect the profitability of the banks. Finally, the macroeconomic factors have insignificant impact on the commercial banks profitability in Ethiopia.

The purpose of the study made by (Habtamu, 2012) is to investigate determinants of private commercial banks profitability in Ethiopia by using panel data of seven private commercial banks from year 2002 to 2011. He used quantitative research approach and secondary financial data are analyzed by using multiple linear regressions models for the three bank profitability measures; Return on Asset (ROA), Return on Equity (ROE), and Net Interest Margin (NIM). He applied fixed effect regression model to investigate the impact of capital adequacy, asset quality, managerial efficiency, liquidity, bank size, and real GDP growth rate on major bank profitability measures i.e., (ROA), (ROE), and (NIM) separately. Beside this, he used primary data analysis to solicit managers perception towards the determinants of private commercial banks profitability. The empirical results shows that bank specific factors; capital adequacy, managerial efficiency, bank size and macro-economic factors; level of GDP, and regulation have a strong influence on the profitability of private commercial banks in Ethiopia.

The main objective of the study made by (Birhanu, 2012) is to examine the effect of bank-specific, industry-specific and macroeconomic determinants of Ethiopian commercial banking industry profitability from the period 2000 - 2011 by using OLS estimation method to measure the effects of internal and external determinants on profitability in terms of average return on asset and net interest margin. The result reveals that, all bank-specific determinants, with the exception of bank size, expense management and credit risk, affect bank profitability significantly and positively in the anticipated way. In addition to this, no evidence is found in

support of the presence of market concentration. Finally, from macroeconomic determinants GDP has positive and significant effect on both asset return and interest margin of the bank. But interest rate policy has significant and positive effect only on interest margin.

(Amdemikael, 2012), Carried out study to examine the bank-specific, industry-specific and macro-economic factors affecting bank profitability for eight commercial banks operating in Ethiopia covering the period of 2000-2011. He adopts a mixed research approach by combining documentary analysis and in-depth interviews. He used ROA as a dependent variable and capital strength, operational efficiency, income diversification, liquidity risk, bank size, asset quality, industry concentration level, real GDP growth and inflation as independent variables. The findings of the study show that capital strength, income diversification, bank size and gross domestic product have statistically significant and positive relationship with banks' profitability. On the other hand, variables like operational efficiency and asset quality have a negative and statistically significant relationship with banks' profitability. However, the relationship for liquidity risk, concentration and inflation is found to be statistically insignificant.

2.3 Conclusion and knowledge gap

From the review of the relevant literature relating to the determinants of bank performance, it's possible to see the existence of knowledge gap. Even though studies were undertaken by (Belayneh, 2011; Amdemikael, 2012; Birhanu, 2012; Habtamu, 2012) and (Mohana & Tekeste, 2012), on the determinants of Ethiopian banking performance, they all fails to include the important variables like Earning ability and Foreign exchange rate. Because these variables are very important variables which can significantly affects the performance of Ethiopian banking industry.

Besides ,the growth and development of the Ethiopian banking industry in terms of number of commercial banks, total assets and capital ,branch network, increasing their outreach to remote areas and continuously reporting profits of different magnitude necessitate the examination of the determinants of bank performance in Ethiopian banking industry.

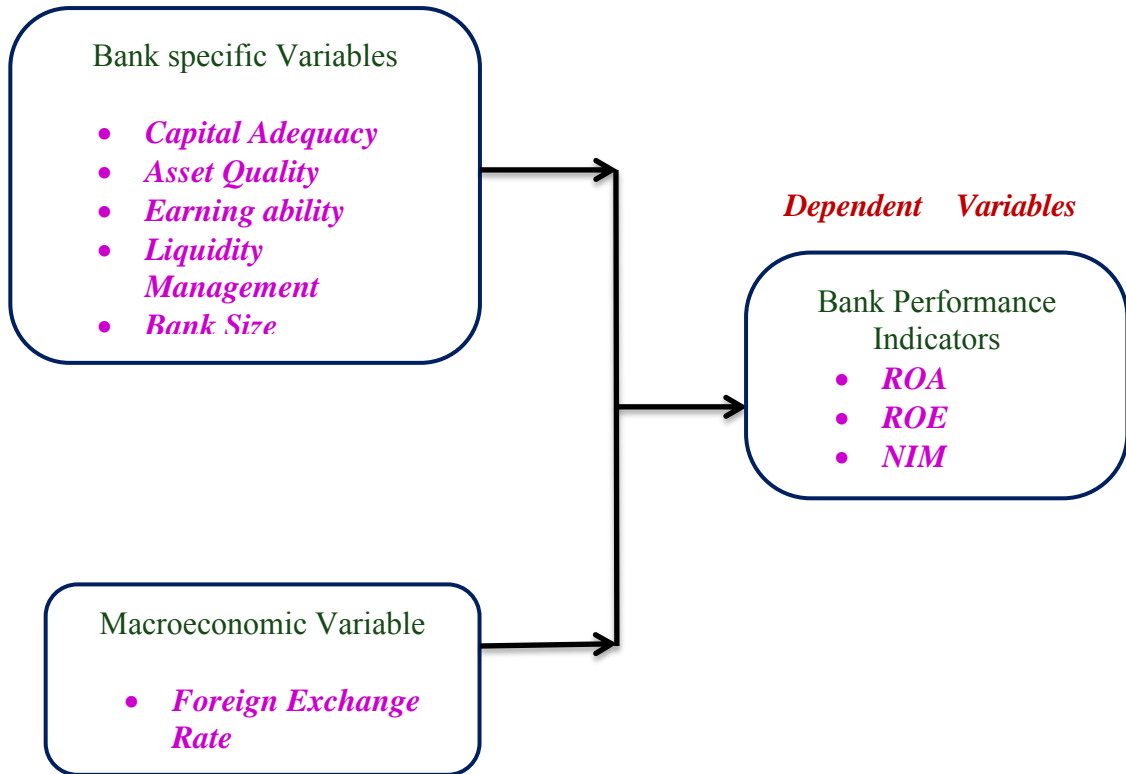
In addition, a lot of literatures are developed to examine the determinants of banks performance but those studies show different and even contradictory results. This shows that there is no consensus in the banking literature on the determinants of bank performance.

2.4 Conceptual framework

Different empirical evidences suggested that the financial performances of commercial banks are determined by internal and external factors. Both Internal and external factors used in this study includes Capital Adequacy, Asset Quality, Earnings Ability, Liquidity Management, Bank size and Foreign exchange rate only for the study proposed.

Figure 1 conceptual frameworks

Independent Variables



Source: Designed by the researcher

CHAPTER THREE

Research Design and Methodology

3.1 Research design

To attain the stated objectives of the study, which was to investigate the determinants of commercial banks financial performance in Ethiopia, the researcher follows an explanatory research approach. According to (Tobias & Themba , 2011), the advantage of using panel data is that it controls for individual heterogeneity, less collinearity variables and tracks trends in the data something which simple time-series and cross-sectional data cannot provide. Furthermore, the study was employed using quantitative research approach based on secondary data gathered from the audited financial statements of commercial banks under study and National bank of Ethiopia annual report and different publications“ of NBE for Macroeconomic variables. The secondary data analysis was used E-views 9 software.

3.1.1 Population of the study

The detailed Annual balance sheet and income statement information for a universe of Ethiopian commercial banks are used as a main source of data to gather important information for the study. This is a balanced panel for the period from the 2000 to 2014 G.C. Banks that has less than fifteen years of available data is excluded from the sample. These banks are newly-chartered. The Population in this study hence includes 18 commercial banks in Ethiopia (2 under government ownership and 16 private owned commercial banks).

3.1.2 Sampling techniques

This study includes all banks operating in Ethiopia as a population of the study. However, banks that operate less than fifteen years was not taken since those banks have no experience and have no data for fifteen years. Due to this reason, by using purposive sampling technique from 18 Commercial banks operating in Ethiopia this study took seven banks which are established prior to 2000 G.C. which is listed on the below table 2.

Table 2 List of the sample Banks

SAMPLE COMMERCIAL BANKS	
Name of Commercial Banks	Year of establishment
1.Commercial Bank of Ethiopia	1963
2.Awash International Bank	1994
3.Dashen Bank	1995
4.Bank of Abyssinia	1996
5.Wegagen Bank	1997
6.United Bank	1998
7.Nib International Bank	1999

The above table 2 is supposed to be representative to the banking sector of Ethiopia in this study.

3.1.3 Source and types of data

In order to carry out any research activity; information should be gathered from proper sources. According to (Yuqi , 2006), secondary data have its own advantages. Compared to primary data, secondary data gives higher quality data, the feasibility to conduct longitudinal studies and the permanence of data which means secondary data generally provide a source of data that is both permanent and available in a form that may be checked relatively easily by others. Therefore, to increase the dependability of the data, the study used secondary data which was based on the audited financial statement of the banks which are readily available on their website and archives as well as the macroeconomic data were collected from National Bank of Ethiopia annual reports, and other published and unpublished documents.

3.1.4 Data analysis

The data collected using data collection sheet are edited, coded and cleaned. Then the data are analyzed using econometric software (E-views 9). A multiple linear regression model and t-statistic are 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 was primarily based on panel data, which was collected through structured document review. Thus, the collected panel data was analyzed using descriptive statistics, correlations and multiple linear regression analysis. Mean values and standard deviations were used to analyze the general trends of the data from 2000 to 2014 based on the sector sample of 7 banks and a correlation matrix was also used to examine the relationship between the dependent variable and explanatory variables. For this study, the regression analysis known as OLS was used to estimate the relationship between profitability and its determinants. The multiple linear regressions model was run, and thus OLS was conducted using E-views 8 econometric software package, to test the casual relationship between the firm's profitability and their potential determinants and to determine the most significant and influential explanatory variables affecting the profitability of Ethiopian banks.

3.2 Operationalization of the Study Variables

This section presents the measurements that were used to operationalize the study variables.

Table 3 Operationalization of the variables

	Variable	Notation	Measurement	Used by (source)	Expected Result
Dependent	Return on assets	ROA	Net income before tax to its total asset	(Chan & Vong, 2008)	
	Return on equity	ROE	Net Income after Taxes divided by Total Equity Capital	(Okoth, V & Gemechu, B, 2013)	
	Net interest margin	NIM	A percentage of earns on loans in a time period and other assets (Interest Income) minus the interest paid on borrowed funds (Interest Expense) divided by the average amount earning assets (Loans and Advances).	(Tan & Floros, 2012)	
Independent	Capital Adequacy	CA	Total Capital to Total Asset	(Ezra, 2013)	+
	Asset Quality	AQ	Non-performing loans to total loans	(Habtamu, 2012)	-
	Earning Ability	EA	Interest Income to Total Income	(Khrawish, 2011)	-
	Liquidity Management	LM	The liquid asset to total deposit	(Hadad, 2013)	+
	Bank size	BS	Log of Total Assets	(Sufian & Shah, 2009)	+
	Foreign exchange rate	FEXRA	Yearly average Exchange Rate	(Evans, 2014)	+

Source: compiled by the researcher

3.3 Model Specification

The researcher formulates the some econometric model which are a representation of the basic features of an economic phenomenon so as to achieve the broad research objective. It is an abstraction of the real world. The specification of a model is based on the available information relevant to the study in question. This is to say, the formulation of an economic model is dependent on available information on the study as embedded in standard theories and other major empirical works, or else, the model would be theoretical. In order to determine the dynamic and simultaneous inter- relationship between banking industry profitability and its determinants, an empirical model used by (Davydenko , 2010), (Athanasoglou, Sophocles, & Matthaios, 2005) and (Berger, 1995) prior theoretical model.

The previous studies that have been reviewed from literature made on financial performance of commercial banks were focused on different financial variables such like Return on Assets (ROA), Return on Equity (ROE) and Net Interest Margin (NIM). According to (Jah & Hui, 2012), (Ali , Akhtar, & Ahmed, 2011) the performance indicators are ROA and ROE jointly. While (Ahmed, 2011) claim ROA as performance indicator and also according to (Siddiqui & Shoaib, 2011) used ROE as performance indicator.

Thus, the major dependent variables used for performance measurement in this study were Return on Asset (ROA), Return on Equity (ROE) and Net Interest Margin (NIM) Jointly. The major determinants (independent variables) are capital adequacy, asset quality, Earning Ability and liquidity management was provided by selected ratios. Macro economic variables (GDP growth rate and average annual Inflation Rate) specifically used as independent variables. In this study the following baseline model of (Olweny & Shipho, 2011) will be used as well:

$$ROA_{it} = \alpha_0 + \alpha_1 CA_{it} + \alpha_2 AQ_{it} + \alpha_3 EA_{it} + \alpha_4 LM_{it} + \alpha_5 BS_{it} + \alpha_6 FEXRA_t + \varepsilon_{it} \dots \dots (1)$$

$$ROE_{it} = \alpha_0 + \alpha_1 CA_{it} + \alpha_2 AQ_{it} + \alpha_3 EA_{it} + \alpha_4 LM_{it} + \alpha_5 BS_{it} + \alpha_6 FEXRA_t + \varepsilon_{it} \dots \dots (2)$$

$$NIM_{it} = \alpha_0 + \alpha_1 CA_{it} + \alpha_2 AQ_{it} + \alpha_3 EA_{it} + \alpha_4 LM_{it} + \alpha_5 BS_{it} + \alpha_6 FEXRA_t + \varepsilon_{it} \dots \dots (3)$$

Where:-

- ROA_{it} = Return on Asset of Bank i at time t
- ROE_{it} = Return on Equity of Bank i at time t
- NIM_{it} = Net interest margin of Bank i at time t
- α_0 = Intercept
- CA_{it} = Capital Adequacy of bank i at time t
- AQ_{it} = Asset Quality of bank i at time t
- EA_{it} = Earning Ability of Bank i at time t
- LM_{it} = Liquidity Ratio of Bank i at time t
- BS_{it} = Bank Size of Bank i at time t
- $\alpha_1 - \alpha_6$ = Coefficients parameters
- $FEXRA_t$ = Yearly average Exchange Rate at time t
- ε_{it} = Error term where i is cross sectional and t time identifier

3.4 Model Assumptions

The following diagnostic tests were carried out to ensure that the data suits the basic assumptions of classical linear regression model.

Normality: To check the normality, descriptive statistics was used. A normal distribution is not skewed and is defined to have a coefficient of kurtosis of (Brooks, 2008). One of the most commonly applied tests for normality; the Bera-Jarque formalizes these ideas by testing whether the coefficient of Skewness and the coefficient of excess kurtosis are zero and three respectively. (Brooks, 2008) Also states that, if the residuals are normally distributed, the histogram should be bell-shaped and the Bera-Jarque statistic would not be significant at 5% significant level.

Multicollinearity: There were different arguments towards the multicollinearity problem. (Gujarati D. N., 2004) Stated that multicollinearity problems exist when the correlation coefficient among variables greater than 0.75. (Cooper & Schendlar, 2003) Suggested that a correlation above 0.8 between explanatory variables should be corrected for. Lastly, (Hair JF, 2006) argued that also correlation coefficient below 0.9 may not cause serious multicollinearity problem. In contrary to this, (Kennedy , 2008) argued that as any correlation coefficient above 0.7 could cause a serious

multi collinearity problem leading to inefficient estimation and less reliable results. A correlation matrix used to ensure the correlation.

Heteroscedasticity: According to (Brooks, 2008), Heteroscedasticity means that error terms do not have a constant variance. If heteroscedasticity occur, the estimators of the ordinary least square method are inefficient and hypothesis testing is no longer reliable or valid as it will underestimate the variances and standard errors. There are several tests to detect the Heteroscedasticity problem, which are Park Test, Glesjer Test, Breusch-Pagan-Goldfrey Test, White's Test and Autoregressive Conditional Heteroscedasticity (ARCH) test. In this case, this study chooses to use ARCH test to detect Heteroscedasticity.

H_0 : There is no Heteroscedasticity problem in the model.

H_1 : There is Heteroscedasticity problem in the model.

Decision Rule: Reject H_0 if p-value greater than significance level. Otherwise, do not reject H_0 .

Tests for Autocorrelation: Assumption that is made of the CLRM's disturbance terms is that 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. If the errors are not uncorrelated with one another, it would be stated that they are "auto correlated" or that they are "serially correlated". A test of this assumption is therefore required. To test the presence of autocorrelation, to test for autocorrelation the researcher apply Breusch-Godfrey Serial Correlation LM test.

CHAPTER FOUR

Data Analysis and Presentation

This chapter deals with the analysis and presentation of the results of the study. The data were analyzed by using E-views 9 software. The descriptive statistics and the correlation analysis were discussed. Followed by the diagnostic test, which is necessary to fulfill the assumption of the classical linear regression model. Then, econometric analysis and discussion of the main finding of the study were presented. Finally, the results of the regression analysis were discussed by supporting empirical evidence.

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 variables used in the study were ROA, ROE and NIM while the independent variables were capital adequacy, asset quality, earning ability, liquidity Management, bank size, and Foreign exchange rate. Thus, the total observation for each dependent and explanatory variables were 105 (panel data of 7 commercial banks for 15 years). The table 4 demonstrates the mean, standard deviation, minimum and maximum values for the dependent and independent variables for sample banks over the year 2000 to 2014.

The ROA measured by the NIBT divided by TA has a mean value of 3.35 percent. This indicates that the sample banks on average earned a NIBT of 3.35 percent of the total asset. Since ROA indicates the efficiency of the management of a company in generating NIBT from all the resources of the institutions, the higher ROA shows that the company is more efficient in using its resources. The maximum value of ROA was 5.68 and minimum value of 0.51. That means the most profitable and least profitable banks among the sampled banks earned 5.68 cents and 0.51 cents of net income for a single birr invested in the assets of the firm respectively.

The ROE which is measured by the NIAT divided by total Equity has a mean value of 22.82 percent. This implies that, the sample banks on average earned 22.82 percent of each birr invested in. accordingly, during the study period the sample commercial banks in Ethiopia had

relatively good performance which is measured by ROE when it's compared with the ROA and NIM.

The NIM which is measured by the net interest income divided by the total loan and advances has a mean value of 6.33 percent. This implies that, the sample banks on average earned 6.33 percent net interest income of the total loan and advances. Since NIM reflects the cost of bank's intermediation services and the efficiency of the bank, the higher the NIM the higher the bank's profit and the more stable the bank is.

Regarding the independent variables, the Capital adequacy which is measured by total equity divided by total assets has a mean value of 11.73 with a maximum and minimum value of 27.69 and 3.74 percent respectively. In addition, the standard deviation of the Capital adequacy was 4.61 percent. The 2nd independent variable used in the study was Asset quality which is measured by Non-performing loan divided by total loans has a mean value of 5.59 with a Maximum and minimum value of 33.67 and 0 present respectively. The 3rd independent variable used in the study was earning ability which is measured by Interest income divided by total income has a mean value of 61.33 with a maximum and minimum value of 82.33 and 38.64 present respectively. The 4th independent variable used in the study was liquidity management which is measured by total equity divided by total deposit has a mean value of 39.58 with a maximum and minimum value of 78.10 and 6.19 present respectively. The 5th internal independent variable used in the study was bank size which was measured by the natural logarithm of total assets has a mean value of 9.67 with a maximum and minimum value of 11.38 and 8.22 percent respectively. In addition, the standard deviation of the bank size was 0.65 percent. This implies that in the study period the sample commercial banks have a small variation in their total asset.

The external variable used in the study was foreign exchange rate. It has a mean value of 11.44 with a standard deviation 3.98 this implies that the foreign exchange rate in Ethiopia during the study period remains highly unstable.

Table 4 Summary of descriptive statistics

Variables		Observations	Mean	Maximum	Minimum	Std. Dev.
Dependent	ROA	105	0.03347	0.056833	0.005131	0.011823
	ROE	105	0.228244	0.70604	-0.016929	0.125108
	NIM	105	0.06335	0.104724	0.026023	0.01535
Independent	CA	105	0.117331	0.276914	0.037437	0.046135
	AQ	105	0.055940	0.336698	0.000000	0.067257
	EA	105	0.613299	0.823332	0.386355	0.089346
	LM	105	0.395819	0.781031	0.061898	0.142762
	BS	105	9.667827	11.38512	8.217849	0.651109
	FEXRA	105	11.43581	19.0748	8.1426	3.977353

Source: computed from E-views 9 result

4.2. CLRM assumptions and Diagnostic tests

The diagnostic tests were undertaken to ensure that the assumptions of classical linear regression model are concerned, the coefficient estimators of both α (constant term) and β (independent variables) that are determined by ordinary least square (OLS) will have a number of desirable properties, and usually known as Best Linear Unbiased Estimators (BLUE). Hence, the following sections discuss results of the diagnostic tests (i.e., heteroscedasticity, autocorrelation, multicollinearity, normality and model specification test) 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. Heteroskedasticity test

The homoskedasticity 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 heteroskedastic (Brooks, 2008). As noted in (Brooks, 2008) Homoskedasticity fails whenever

the variance of the unobservable changes across different segments of the population, which are Determined by the different values of the explanatory variables. The ARCH test for heteroskedasticity was used to test the presence of the heteroskedasticity. Accordingly, table 5, 6 and 7 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 Heteroskedasticity in ROA, ROE and NIM 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 heteroskedasticity.

Table 5 Heteroskedasticity test for ROA

Heteroskedasticity Test: ARCH

F-statistic	1.263494	Prob. F(1,101)	0.2637
Obs*R-squared	1.272594	Prob. Chi-Square(1)	0.2593

Source: computed from E-views 9 results

Table 6 Heteroskedasticity test for ROE

Heteroskedasticity Test: ARCH

F-statistic	2.940444	Prob. F(1,97)	0.0896
Obs*R-squared	2.912774	Prob. Chi-Square(1)	0.0879

Source: computed from E-views 9 result

Table 7 Heteroskedasticity test for NIM

Heteroskedasticity Test: ARCH

F-statistic	0.651265	Prob. F(1,101)	0.4216
Obs*R-squared	0.659906	Prob. Chi-Square(1)	0.4166

Source: computed from E-views 9 result

4.2.2. Multicollinearity test

Multicollinearity means the existence of a “perfect” or exact, linear relationship among some or all explanatory variables (Gujarati D. , 2004). As noted in (Gujarati D. , 2004) if multicollinearity is perfect, the regression coefficients of the explanatory variables are indeterminate and their standard errors are infinite. If multicollinearity is less than perfect, the regression coefficients, although determinate, possess large standard errors (in relation to the coefficients themselves), which means the coefficients cannot be estimated with great precision or accuracy.

There were different arguments towards the multicollinearity problem. (Gujarati D. , 2004) Stated that multicollinearity problems exist when the correlation coefficient among variables greater than 0.75. (Cooper & Schendlar, 2003) Suggested that a correlation above 0.8 between explanatory variables should be corrected for. Lastly, (Hair JF, 2006) argued that also correlation coefficient below 0.9 may not cause serious multicollinearity problem. In contrary to this, (Kennedy , 2008) argued that as any correlation coefficient above 0.7 could cause a serious multicollinearity problem leading to inefficient estimation and less reliable results. A correlation matrix used to ensure the correlation. This study adopts the most conservative view of (Kennedy , 2008) among the other and accepts the problem of multicollinearity if the value is exceeds than 0.7.

Table 8 Results of multicollinearity Test: High Pair-Wise Correlation Coefficients

	CA	AQ	EA	LM	BS	FEXRA
CA	1.000000	-0.466300	-0.032079	0.462508	-0.506782	0.085735
AQ	-0.466300	1.000000	-0.002935	-0.237601	0.085305	-0.396185
EA	-0.032079	-0.002935	1.000000	-0.251359	-0.216517	-0.152664
LM	0.462508	-0.237601	-0.251359	1.000000	-0.512477	-0.207413
BS	-0.506782	0.085305	-0.216517	-0.512477	1.000000	0.594497
FEXRA	0.085735	-0.396185	-0.152664	-0.207413	0.594497	1.000000

Source: computed from E-views 9 result

Table 8 showed that there is no strong pair-wise correlation between the explanatory variables (CA, AQ, EA, LM, BS and FEXRA). In this study the highest correlation coefficient is 0.594497 between Foreign exchange rate and size of banks. Thus, it can be concluded using the rule of

(Kennedy , 2008) the all variables have low correlation power which implies no multicollinearity problem in the explanatory variables selected to financial performance of the commercial banks.

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:

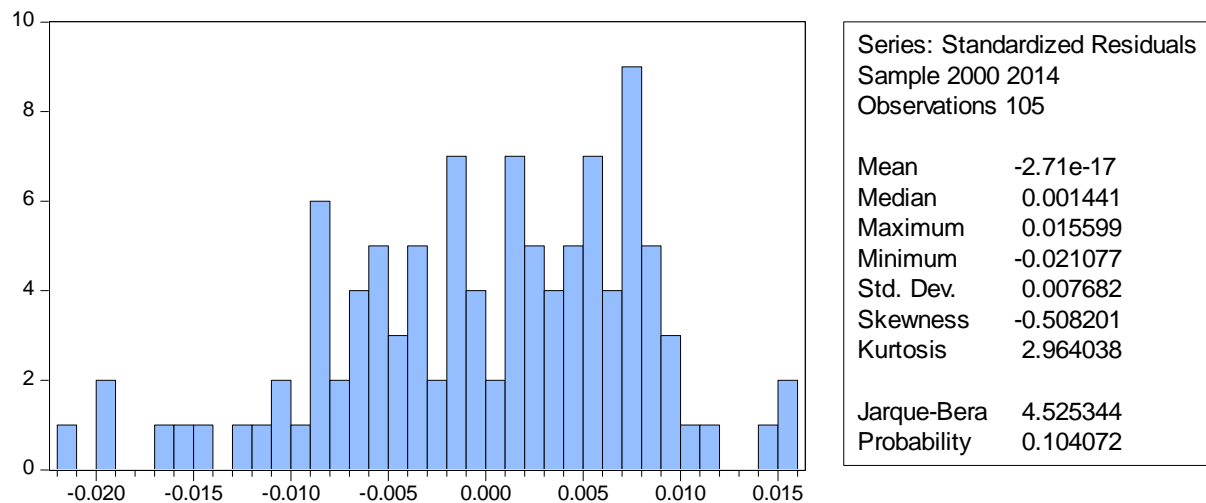
H₀: Error term is normally distributed

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.

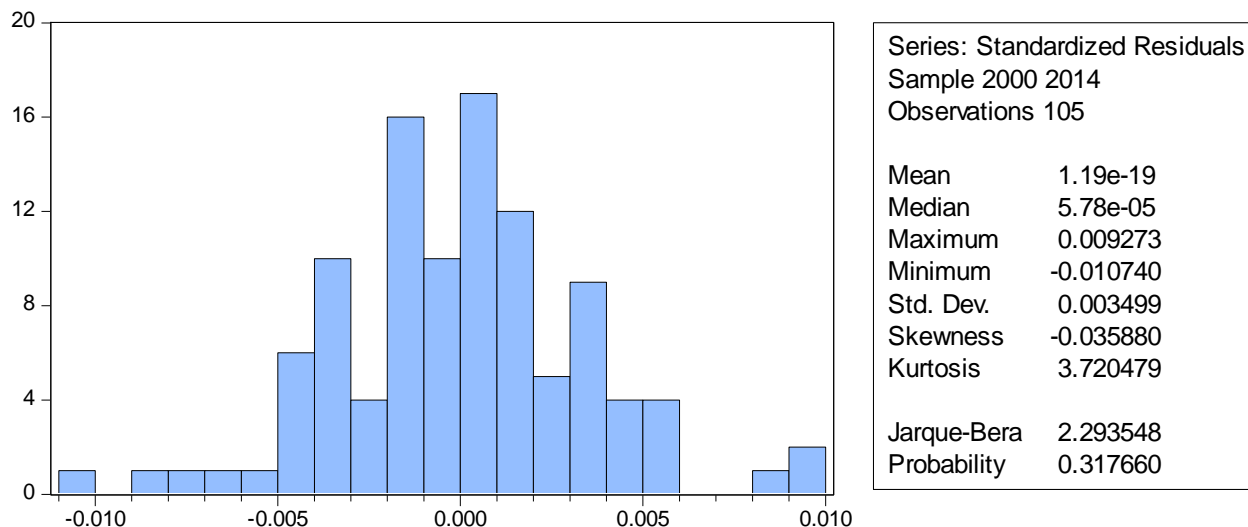
Figure 2 Normality test for ROA model



Source: computed from E-views 9 result

As shown in figure 2 since, 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 model.

Figure 3 Normality test for ROE model

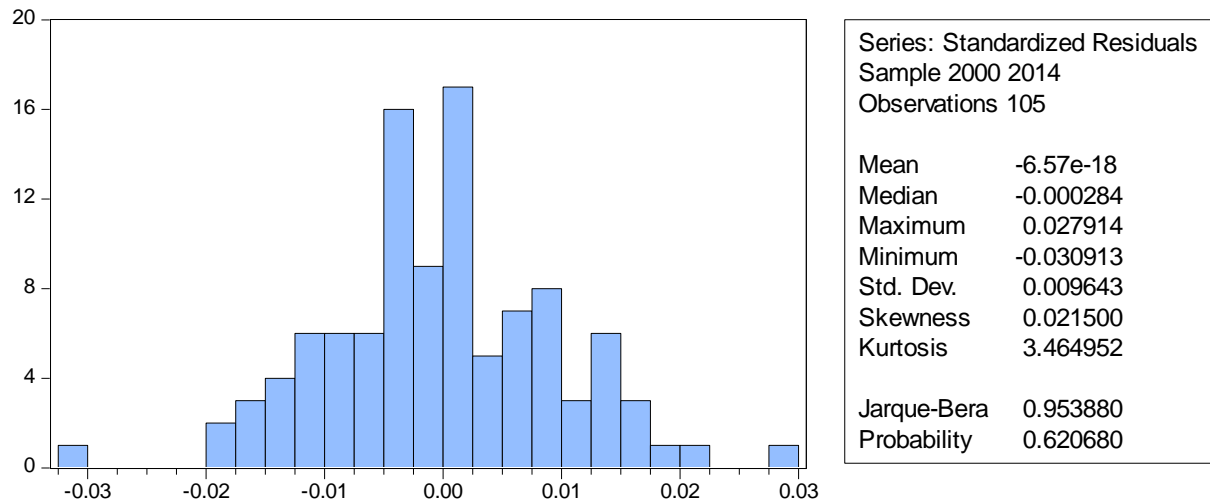


Source: computed from E-views 9 result

As shown in figure 3 since, 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 ROE model.

As shown in figure 4 since, 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 NIM model.

Figure 4 Normality test for NIM model



Source: computed from E-views 9 result

4.2.4. Testing for serial correlation

Serial correlation is usually a result of model miss-specification or genuine autocorrelation of the model error term. In the presence of such a phenomenon, ordinary least squares are no-longer BLUE (Best Linear Unbiased estimators). In such cases R-squared may be over-estimated. There was thus every need to test for serial correlation in the residuals.

According to (Brooks, 2008) , when the error term for any observation is related to the error term of other observation, it indicate that autocorrelation problem exist in this model. In the case of autocorrelation problem, the estimated parameters can still remain unbiased and consistent, but it is inefficient. The result of T-test, F-test or the confidence interval will become invalid due to the variances of estimators tend to be underestimated or overestimated. Due to the invalid hypothesis testing, it may lead to misleading results on the significance of parameters in the model. Breusch-Godfrey Serial Correlation LM Test was used to detect autocorrelation problem.

Ho: $\rho=0$, i.e. no serial correlation

H1: $\rho=1$ i.e. presence of serial correlation

Decision Rule: Reject H_0 if p-value greater than significance level. Otherwise, do not reject H_0 . Hence all the models used in this study have no serial correlation.

Table 9 Testing for serial correlation of ROA model

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.555264	Prob. F(2,95)	0.5758
Obs*R-squared	1.201689	Prob. Chi-Square(2)	0.5483

Source: computed from E-views 9 result

Table 10 Testing for serial correlation of ROE model

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.120795	Prob. F(2,93)	0.3304
Obs*R-squared	2.400654	Prob. Chi-Square(2)	0.3011

Source: computed from E-views 9 result

Table 11 Testing for serial correlation of NIM model

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	2.039138	Prob. F(2,95)	0.1358
Obs*R-squared	4.280864	Prob. Chi-Square(2)	0.1176

Source: computed from E-views 9 result

As can be seen from the above tables 9, 10 and 11, F test result and the P value of F-statistic for ROA, ROE and NIM model was 0.5758, 0.3304 and 0.1358 respectively which is beyond the significance level of 5%. Hence, the null hypothesis of no serial correlation is failed to reject at 5 percent of significant level. This implying that there is no significant evidence for the presence of serial correlation in these models. The Chi-Square P-value of the models also supports the absence of serial correlation. Therefore, can be concluded that, the covariance between residuals is zero, data is normal and absence of serial correlation problem was found conclusively from the LM tests.

4.3. Model selection criteria

There are two types of panel estimator approaches that can be employed, namely: fixed effects models (FEM) and random effects models (REM) Brooks, (2008).

The simplest types of fixed effects models allow the intercept in the regression model to differ cross-sectionally but not over time, while all of the slope estimates are fixed both cross-sectionally and over time. The random effects approach proposes different intercept terms for each entity and again these intercepts are constant over time, with the relationships between the explanatory and explained variables assumed to be the same both cross-sectionally and temporally (Brooks, 2008). To examine whether individual effects are fixed or random, a Hausman specification test was conducted providing evidence in favor of the REM model (Baltagi, 2005). The null hypothesis for this test is that unobservable heterogeneity term is not correlated or random effect model is appropriate, with the independent variables. If the null hypothesis is rejected then we employ Fixed Effects method. (Brooks, 2008).

H_0 : Random Effects model is appropriate

H_1 : Fixed Effects model is appropriate

Decision Rule: Reject H_0 if p-value less than significance level 5%. Otherwise, do not reject H_0 . According to the results presented below the study adopt Random effects model.

Table 12 Hausman Test for ROA model

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	6	1.0000

Source: computed from E-views 9 result

Table 13 Hausman Test for ROE model

Correlated Random Effects - Hausman Test
 Equation: Untitled
 Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	8.259808	6	0.2197

Source: computed from E-views 9 result

Table 14 Hausman Test for NIM model

Correlated Random Effects - Hausman Test
 Equation: Untitled
 Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	6	1.0000

Source: computed from E-views 9 result

As shown from the above Hausman specification test Tables 12, 13 and 14, the P-values of ROA, ROE and NIM models were 1.0000, 0.2197 and 1.0000, which are more than 5% level of significance. Hence, the null hypothesis of the random effect model is appropriate and failed to reject at 5 percent of significant level. This implying that, random effect model is more appropriate than fixed effect model and gives more comfort that random effects model results are valid.

4.4. Regression analysis

This section presents the overall results of the regression analysis on the determinants of bank financial performance. In this study ROA, ROE and NIM was used as proxy for performance measure. The regression analysis result is presented by using separate table for each model.

Table 15 shows the regression analysis for ROA. In this regression analysis the dependent variable is ROA while the independent variables are CA, AQ, EA, LM, BS and FEXRA. Besides, table 16 shows the result of the regression analysis for ROE. In this model the dependent variable was ROE, while CA, AQ, EA, LM, BS and FEXRA were the independent variables. And also, table 17 shows the result of the regression analysis for NIM. In this model the dependent variable was NIM, while CA, AQ, EA, LM, BS and FEXRA were the independent variables.

4.4.1 Regression result of model specification I

Table 15 Model regressed using ROA as a proxy of financial performance

Dependent Variable: ROA

Method: Panel EGLS (Cross-section random effects)

Sample: 2000 2014

Periods included: 15

Cross-sections included: 7

Total panel (balanced) observations: 105

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.053699	0.027369	-1.962036	0.0526
CA	0.079075	0.025413	3.111584	0.0024
AQ	-0.079807	0.014234	-5.606965	0.0000
EA	-0.043343	0.010307	-4.205289	0.0001
LM	-0.009231	0.006972	-1.324135	0.1885
BS	0.012367	0.002514	4.920205	0.0000
FEXRA	-0.000610	0.000318	-1.919195	0.0579
Effects Specification				
			S.D.	Rho
Cross-section random			0.002868	0.1363
Idiosyncratic random			0.007220	0.8637
Weighted Statistics				
R-squared	0.600387	Mean dependent var		0.018241
Adjusted R-squared	0.575921	S.D. dependent var		0.011381
S.E. of regression	0.007412	Sum squared resid		0.005383
F-statistic	24.53958	Durbin-Watson stat		1.592091
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.577795	Mean dependent var		0.033470
Sum squared resid	0.006138	Durbin-Watson stat		1.396448

Source: computed from E-views 9 result

The estimation results reported in Table 15 depicted that, The R-squared and Adjusted R-squared values of 0.60 and 0.58 respectively is an indication that the model is a good fit. This means more than 58% of variations in return on asset of Ethiopian commercial banks were explained by independent variables included in the model. However, the remaining 42% 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 24.54 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 random effect estimation regression result in the above table 15 shows that, coefficient intercept (α) is -0.053699. This means, when all explanatory variables took a value of zero, the average value ROA would be take -0.053699 unit and statistically significant at 5% level of significance.

❖ **Capital Adequacy (CA) and return on asset (ROA)**

As the above random effect regression output table 15 presented that, the coefficient of capital adequacy (CA) measured by Total Capital to Total Asset is 0.079075 and its P-value is 0.0024. Holding other independent variables constant at their average value, when capital adequacy (CA) increase by one percent, return on asset (ROA) of sampled Ethiopian commercial banks was increase by 8% and statistically significant at 1% of significant level. Therefore, the researcher failed to reject the null hypothesis that capital adequacy has a positive effect on ROA. This means, there is no sufficient evidence to support the negative relationship between ROA and CA.

The relationship is positive as expected and this positive relationship between CA and ROA could be attributed to the fact that a bank with high capital adequacy ratio has high financial performance (ROA). This finding is consistent with previous studies with (Athanasoglou, Sophocles, & Matthaïos, 2005; Flamini, Valentina, McDonald, & Liliana, 2009; Naceur & Goaid, 2001); and (Belayneh, 2011). According to those researchers a bank with a sound capital position is able to pursue business opportunities more effectively and has more time and flexibility to deal with

problems arising from unexpected losses, thus achieving increased profitability, this finding reflecting the sound financial condition of Ethiopian commercial banks.

The possible reason for the significant positive relationship could be that, increase in capital level brings higher financial performance for Ethiopian commercial banks since by having more capital; a bank can easily adhere to regulatory capital standards so that excess capital can be provided as loans.

❖ **Asset Quality (AQ) and return on asset (ROA)**

Table 15 presented the coefficient of Asset Quality (AQ) measured by non-performing loans to total loans is -0.079807 and its P-value are 0.0000. Holding other independent variables constant at their average value, when Asset Quality (AQ) increased by one percent, return on asset (ROA) of sampled Ethiopian commercial banks would be decreased by 8 percent and statistically significant at 1% level of significant. Therefore, the researcher failed to reject the null hypothesis that asset quality has a negative effect on ROA. This means, there is no sufficient evidence to support the positive relationship between ROA and CA.

The relationship is negative as expected and this negative relationship between AQ and ROA could be attributed to the fact that a bank which has high non-performing loans has low financial performance (ROA). This finding is consistent with previous studies with (Bourke, 1989), (Yuqi , 2006), and (Tobias & Themba , 2011). Poor asset quality is major causes of bank failures. High non-performing loan associated with low financial performance (ROA).

The possible reason for the significant negative relationship could be the low collectivity of the disbursed loans with their interest income according to the schedule in Ethiopian commercial banks. This may suggests that Ethiopian commercial banks strictly follow up the timely collection of loan disbursed with interest income.

❖ **Earning Ability (EA) and return on asset (ROA)**

Table 15 presented that the coefficient of earning Ability (EA) measured by Interest Income to Total Income is -0.043343 and its P-value are 0.0001. Holding other independent variables constant at their average value, when earning Ability (EA) increased by one percent, return on

asset (ROA) of sampled Ethiopian commercial banks would be decreased by 4 percent and statistically significant at 1% level of significant. Therefore, the researcher failed to reject the null hypothesis that earning Ability has a negative effect on ROA. This means, there is no sufficient evidence to support the positive relationship between ROA and EA.

The relationship is negative as expected and this negative relationship between EA and ROA could be attributed to the fact that a bank more concentrated on interest income source than other income source has low financial performance (ROA). This finding is consistent with previous studies with (Rasiah, 2010), (Sufian F., 2011) and (Belayneh, 2011) which is focused on non-interest income. Focusing only on interest income is associated with low financial performance (ROA).

The possible reason for the significant negative relationship could be given high concentration on interest income than other income source reduces the financial performance (ROA) of Ethiopian commercial banks. This may suggest that Ethiopian commercial banks in addition to their interest income source to work for income diversification.

❖ **Liquidity management (LM) and return on asset (ROA)**

Table 15 above depicted that, the coefficient of liquidity management (LM) measured by liquid assets to total deposits is -0.009231 and its P-value is 0.1885. Holding other independent variables constant at their average value, when liquidity management (LM) increased by one percent, return on asset (ROA) of sampled Ethiopian commercial banks would be decreased by 0.9231%, but statistically insignificant at 5% of significance level. In other words, there is insignificant negative relationship between liquidity management (LM) and return on asset (ROA) of sampled Ethiopian commercial banks. Therefore, the researcher rejects the null hypothesis that there is positive relationship between LM and ROA. This means, there is no sufficient evidence to support the positive relationship between LM and ROA.

In contrary to the hypothesis of this research, LM shows a negative relationship with return on asset (ROA) of sampled Ethiopian commercial banks. The result is consistent with the findings of (Yuqi , 2006) and Guru et al (1999). Liquidity Management of commercial banks included in this study has no significant relationship with return on asset, in contrast,

many previous studies for instance (Bourke, 1989), (Yuqi , 2006), and (Tobias & Themba , 2011) stated that liquidity is the major causes of bank failure.

The possible reason for the negative association between LM and ROA could be attributed to the fact that, Ethiopian banking industry holds more liquid assets rather than to disburse it as a loan and earn more interest income.

❖ **Bank Size (BS) and return on asset (ROA)**

The above table 15 depicted that, the coefficient of Bank size (BS) measured by Log of Total Assets is 0.012367 and its P-value is 0.0000. Holding other independent variables constant at their average value, when Bank size (BS) increased by one birr, return on asset of Ethiopian commercial banks would be increased by 1.24% and statistically significant at 1% of significance level. Therefore, the researcher failed to reject the null hypothesis that BS has a positive effect on ROA. This means, there is no sufficient evidence to support the negative relationship between ROA and BS.

The relationship is positive as expected and this positive relationship between BS and ROA could be attributed to the fact that in Ethiopian banking industry the large bank size performs better than the smaller banks due to the existence of economies of scale. The result is consistent with the previous studies of (Gul, Faiza, & Khalid, 2011), (Athanasoglou, Delis, & Staikouras , 2006), (Sufian & Shah, 2009), (Weersainghe & Ravinda, 2013), (Yadollahzadeh, Ahmadi, & Soltan, 2013), (Sarita, Zandi, & Shahabi, 2012), (Masood & Ashraf, 2012) suggesting that large banks may benefited from economies of scale, in contrast, (Dietrich & Wanzenried, 2009) and (Ezra, 2013) found negative relationship between bank size and performance. They suggested that the smaller the bank, the more efficient the bank will be. Therefore, the finding of this study shows that in Ethiopian banking industry the large bank size perform better than the smaller banks due to the existence of economies of scale. Thus, this study accepted the hypothesis which stated there is a positive relationship between bank size and bank performance in Ethiopia.

The possible reason for the significant positive relationship could be that, large bank size performs better than the smaller banks due to the existence of economies of scale.

❖ **Foreign Exchange rate (FEXRA) and return on asset (ROA)**

Table 15 above depicted that, the coefficient of foreign exchange rate (FEXRA) is -0.000610 and its P-value are 0.0579. Holding other independent variables constant at their average value, when foreign exchange rate (FEXRA) increased by one birr, return on asset of sampled Ethiopian commercial banks would be decreased by 0.061%, but statistically insignificant at 5% of significance level. In other words, there is insignificant negative relationship between FEXRA and ROA of Ethiopian commercial banks. Therefore, the researcher rejects the null hypothesis that there is positive relationship between FEXRA and ROA. This means, there is no sufficient evidence to support the positive relationship between ROA and FEXRA.

In contrary to the expectation of this research, FEXRA shows negative relationship with ROA of Ethiopian commercial banks. In relation to previous literature the results for negative coefficients are not similar to the parameters that are observed and revealed by the numbers of researchers (Evans., 2014) and (Songul., 2013).

The possible reason for the insignificant negative relationship between Foreign exchange rate and return on asset of sampled Ethiopian commercial banks could be that, during the valuation of foreign currency, the bank with more liability in foreign currency incurred loss that means the net income of the bank is decreased but the assets of the bank is remain unchanged. This is the reason why the negative relationship is shown between FEXRA and ROA. But the insignificance negative relationship is due-to that of commercial banks in Ethiopia don't have more deposit in foreign currency and the impact of liability incurred in foreign banks in connection with the importers are on themselves.

4.4.2 Regression result of model specification II

Table 16 Model regressed using ROE as a proxy of financial performance

Dependent Variable: ROE
Method: Panel EGLS (Cross-section random effects)
Date: 03/23/16 Time: 20:41
Sample: 2000 2014
Periods included: 15
Cross-sections included: 7
Total panel (balanced) observations: 105
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.420195	0.228487	-1.839037	0.0689
CA	-0.817494	0.222933	-3.666992	0.0004
AQ	-0.523092	0.130579	-4.005931	0.0001
EA	-0.336741	0.088794	-3.792399	0.0003
LM	-0.151893	0.064992	-2.337117	0.0215
BS	0.115132	0.020275	5.678652	0.0000
FEXRA	-0.006367	0.002836	-2.245308	0.0270

Effects Specification		S.D.	Rho
Cross-section random		0.000000	0.0000
Idiosyncratic random		0.070430	1.0000

Weighted Statistics			
R-squared	0.692855	Mean dependent var	0.228244
Adjusted R-squared	0.674050	S.D. dependent var	0.125108
S.E. of regression	0.071427	Sum squared resid	0.499978
F-statistic	36.84452	Durbin-Watson stat	1.630646
Prob(F-statistic)	0.000000		

Unweighted Statistics			
R-squared	0.692855	Mean dependent var	0.228244
Sum squared resid	0.499978	Durbin-Watson stat	1.630646

Source: computed from E-views 9 result

The estimation results reported in Table 16 depicted that, The R-squared and Adjusted R-squared values of 0.69 and 0.67 respectively is an indication that the model is a good fit. This means more than 67% of variations in return on equity of Ethiopian commercial banks were explained by independent variables included in the model. However, the remaining 33% 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 36.84 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 4.13 shows that, coefficient intercept (α) is -0.420195. This means, when all explanatory variables took a value of zero, the average value ROE would be take -0.420195 unit and statistically insignificant at 5% level of significance.

❖ **Capital Adequacy (CA) and return on equity (ROE)**

Table 16 above depicted that, the coefficient of capital Adequacy (CA) measured by total capital to total asset is -0.817494 and its P-value is 0.0004. Holding other independent variables constant at their average value, when capital Adequacy (CA) increased by one percent, return on equity (ROE) of sampled Ethiopian commercial banks would be decreased by 81.75%, and statistically significant at 1% of significance level. In other words, there is significant negative relationship between capital Adequacy (CA) and return on equity (ROE) of sampled Ethiopian commercial banks. Therefore, the researcher rejects the null hypothesis that there is positive relationship between CA and ROE. This means, there is no sufficient evidence to support the positive relationship between CA and ROE.

In contrary to the hypothesis of this research, CA shows a negative relationship with return on equity (ROE) of sampled Ethiopian commercial banks. As far as the concern of the researcher the result is not consistent with other researcher's findings.

The possible reason for the negative association between CA and ROE could be attributed to the fact that, when the assets of the banks more financed by capital in return the income expected form each birr in banks share is decreased. It shows that Ethiopian banking sector more depend on customers deposit than shareholder's investment in the capital of the bank.

❖ **Asset Quality (AQ) and return on equity (ROE)**

Table 16 presented that, the coefficient of Asset Quality (AQ) measured by non-performing loans to total loans is -0.523092 and its P-value are 0.0001. Holding other independent variables constant at their average value, when Asset Quality (AQ) increased by one percent, return on equity (ROE) of sampled Ethiopian commercial banks would be decreased by 52 percent and statistically significant at 1% level of significant. Therefore, the researcher failed to reject the null hypothesis that asset quality has a negative effect on ROE. This means, there is no sufficient evidence to support the positive relationship between ROE and AQ.

The relationship is negative as expected and this negative relationship between AQ and ROE could be attributed to the fact that a bank which has high non-performing loans has low financial performance (ROE). This finding is consistent with previous studies with (Bourke, 1989), (Yuqi , 2006), and (Tobias & Themba , 2011). Poor asset quality is major causes of bank failures. High non-performing loan associated with low financial performance (ROE).

The possible reason for the significant negative relationship could be due to the lower collectivity of disbursed loans and their interest income according to their schedule in Ethiopian commercial banks. This may suggest that Ethiopian commercial banks strictly follow up the timely collection of loan disbursed with interest income.

❖ **Earning Ability (EA) and return on equity (ROE)**

Table 16 presented that, the coefficient of earning Ability (EA) measured by Interest Income to Total Income is -0.336741 and its P-value are 0.0003. Holding other independent variables constant at their average value, when earning Ability (EA) increased by one percent, return on equity (ROE) of sampled Ethiopian commercial banks would be decreased by 34 percent and statistically significant at 1% level of significant. Therefore, the researcher failed to reject the null hypothesis that earning Ability has a negative effect on ROE. This means, there is no sufficient evidence to support the positive relationship between ROE and EA.

The relationship is negative as expected and this negative relationship between EA and ROE could be attributed to the fact that a bank more concentrated on interest income source

than other income source has low financial performance (ROE). This finding is consistent with previous studies with (Rasiah, 2010), (Sufian F., 2011) and (Belayneh, 2011) which is focused on non-interest income. Focusing only on interest income is associated with low financial performance (ROE).

The possible reason for the significant negative relationship could be high concentration given for interest income than other income source is reduce the financial performance (ROE) of Ethiopian commercial banks. It is suggested that in addition to their interest income Ethiopian commercial banks has to do for their income diversification.

❖ **Liquidity management (LM) and return on equity (ROE)**

Table 16 above depicted that, the coefficient of liquidity management (LM) measured by liquid assets to total deposits is -0.151893 and its P-value is 0.0215. Holding other independent variables constant at their average value, when liquidity management (LM) increased by one percent, return on equity (ROE) of sampled Ethiopian commercial banks would be decreased by 15.19%, and statistically significant at 5% of significance level. In other words, there is significant negative relationship between liquidity management (LM) and return on equity (ROE) of sampled Ethiopian commercial banks. Therefore, the researcher rejects the null hypothesis that there is positive relationship between LM and ROE. This means, there is no sufficient evidence to support the positive relationship between LM and ROE.

In contrary to the hypothesis of this research, LM shows a negative relationship with return on equity (ROE) of sampled Ethiopian commercial banks. The result is consistent with the findings of (Yuqi , 2006) and Guru et al (1999). Liquidity Management of commercial banks included in this study has no significant relationship with return on asset, in contrast , many previous studies for instance (Bourke, 1989), (Yuqi , 2006), and (Tobias & Themba , 2011) stated that liquidity is the major causes of bank failure.

The possible reason for the negative association between LM and ROE could be attributed to the fact that, Ethiopian banking industry holds more liquid assets rather than to disburse it as a loan and earn more interest income.

❖ **Bank Size (BS) and return on equity (ROE)**

The above table 16 depicted that, the coefficient of Bank size (BS) measured by Log of Total Assets is 0.115132 and its P-value is 0.0000. Holding other independent variables constant at their average value, when Bank size (BS) increased by one birr, return on equity of Ethiopian commercial banks would be increased by 11.51% and statistically significant at 1% of significance level. Therefore, the researcher failed to reject the null hypothesis that BS has a positive effect on ROE. This means, there is no sufficient evidence to support the negative relationship between ROE and BS.

The relationship is positive as expected and this positive relationship between BS and ROE could be attributed to the fact that in Ethiopian banking industry the large bank size performs better than the smaller banks due to the existence of economies of scale. The result is consistent with the previous studies of (Gul, Faiza, & Khalid, 2011), (Athanasoglou et al , 2006), (Sufian & Shah, 2009), (Weersainghe & Ravinda, 2013), (Yadollahzadeh, Ahmadi, & Soltan, 2013), (Sarita et al, 2012) and (Masood & Ashraf, 2012) suggesting that large banks may benefited from economies of scale, in contrast, (Dietrich & Wanzenried, 2009) and (Ezra, 2013) found negative relationship between bank size and performance. They suggested that the smaller the bank, the more efficient the bank will be. Therefore, the finding of this study shows that in Ethiopian banking industry the large bank size perform better than the smaller banks due to the existence of economies of scale. Thus, this study accepted the hypothesis which stated there is a positive relationship between bank size and bank performance measured by ROE in Ethiopia.

The possible reason for the significant positive relationship could be that, banks in large size perform better than those banks in small size due to the existence of economies of scale.

❖ **Foreign Exchange rate (FEXRA) and return on equity (ROE)**

Table 16 above depicted that, the coefficient of foreign exchange rate (FEXRA) is -0.006367 and its P-value is 0.0270. Holding other independent variables constant at their average value, when foreign exchange rate (FEXRA) increased by one birr, return on equity of sampled Ethiopian commercial banks would be decreased by 0.64%, and statistically significant at 5% of significance level. Therefore, the researcher rejects the null hypothesis that FEXRA has a positive

impact on ROE. The sign differs from the initial assumption. This means, there is no sufficient evidence to support the positive relationship between ROE and FEXRA.

In contrary to the expectation of this research, FEXRA shows a negative relationship with ROE of Ethiopian commercial banks. In relation to previous literature the results for negative coefficients are not similar to the parameters that are observed and revealed by the numbers of researchers (Evans., 2014) and (Songul., 2013).

The possible reason for the significant negative relationship between Foreign exchange rate and return on equity of sampled Ethiopian commercial banks could be that, in many Ethiopian 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 documents (CAD).

4.4.3 Regression result of model specification III

Table 17 Model regressed using NIM as a proxy of financial performance

Dependent Variable: NIM

Method: Panel EGLS (Cross-section random effects)

Date: 03/13/16 Time: 07:21

Sample: 2000 2014

Periods included: 15

Cross-sections included: 7

Total panel (balanced) observations: 105

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.177519	0.037077	-4.787882	0.0000
CA	0.141399	0.032515	4.348707	0.0000
AQ	-0.020005	0.018145	-1.102486	0.2730
EA	0.060719	0.013276	4.573450	0.0000
LM	0.003385	0.008824	0.383609	0.7021
BS	0.018779	0.003511	5.348523	0.0000
FEXRA	0.000461	0.000419	1.099738	0.2741

Effects Specification			
		S.D.	Rho
Cross-section random		0.006999	0.3811
Idiosyncratic random		0.008919	0.6189

Weighted Statistics			
R-squared	0.635437	Mean dependent var	0.019800
Adjusted R-squared	0.613117	S.D. dependent var	0.014115
S.E. of regression	0.008779	Sum squared resid	0.007553
F-statistic	28.46917	Durbin-Watson stat	1.965010
Prob(F-statistic)	0.000000		

Unweighted Statistics			
R-squared	0.605331	Mean dependent var	0.063350
Sum squared resid	0.009671	Durbin-Watson stat	1.534771

Source: computed from E-views 9 result

The estimation results reported in Table 17 depicted that, The R-squared and Adjusted R-squared values of 0.64 and 0.61 respectively is an indication that the model is a good fit. This means more than 61% of variations in net interest margin of Ethiopian commercial banks were explained by independent variables included in the model. However, the remaining 39% changes in net interest margin of Ethiopian commercial banks are caused by other factors that are not included in the model. Furthermore, the F-statistic was 28.47 and the probability of not rejecting the null hypothesis that there is no statistically significant relationship existing between the dependent variable (NIM) 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 net interest margin.

The panel random effect estimation regression result in the above table 17 shows that, coefficient intercept (α) is -0.177519. This means, when all explanatory variables took a value of zero, the average value NIM would be take -0.177519 unit and statistically significant at 1% level of significance.

❖ **Capital Adequacy (CA) and net interest margin (NIM)**

As the above random effect regression output table 17 presented that, the coefficient of capital adequacy (CA) measured by Total Capital to Total Asset is 0.141399 and its P-value is 0.0000. Holding other independent variables constant at their average value, when capital adequacy (CA) increase by one percent net interest margin (NIM) of sampled Ethiopian commercial banks was increase by 14% and statistically significant at 1% of significant level. Therefore, the researcher failed to reject the null hypothesis that net interest margin has a positive effect on NIM. This means, there is no sufficient evidence to support the negative relationship between NIM and CA.

The relationship is positive as expected and this positive relationship between CA and NIM could be attributed to the fact that a bank with high capital adequacy ratio has high financial performance (NIM). This finding is consistent with previous studies with (Athanasoglou, Sophocles, & Matthaios, 2005; Flamini, Valentina, McDonald, & Liliana, 2009; Naceur & Goaid, 2001); and (Belayneh, 2011). According to those researchers a bank with a sound capital position is able to pursue business opportunities more effectively and has more time and flexibility to deal with problems arising from unexpected losses, thus achieving

increased profitability, this finding reflecting the sound financial condition of Ethiopian commercial banks.

The possible reason for the significant positive relationship could be that, increase in capital level brings higher financial performance for Ethiopian commercial banks since by having more capital; a bank can easily adhere to regulatory capital standards so that excess capital can be provided as loans.

❖ **Asset Quality (AQ) and net interest margin (NIM)**

Table 17 above depicted that, the coefficient of Asset Quality (AQ) measured by non-performing loans to total loans is -0.020005 and its P-value is 0.2730. Holding other independent variables constant at their average value, when Asset Quality (AQ) increased by 1%, net interest margin (NIM) of sampled Ethiopian commercial banks would be decreased by 2% but statistically insignificant at 5% of significance level. Therefore, the researcher failed to reject the null hypothesis that there is negative relationship between Asset Quality and net interest margin. This means, there is no sufficient evidence to support the positive relationship between Asset Quality and net interest margin.

As expected, Asset Quality has a negative relationship with net interest margin in Ethiopian commercial banks. The relationship is negative as expected and this negative relationship between AQ and NIM could be attributed to the fact that a bank which has high non-performing loans has low financial performance (NIM). This finding is consistent with previous studies with (Bourke, 1989), (Yuqi , 2006), and (Tobias & Themba , 2011). Poor asset quality is major causes of bank failures. High non-performing loan associated with low financial performance (NIM).

The possible reason for the insignificant negative relationship could be the collectivity of disbursed loans is very small with their interest income according to the schedule in Ethiopian commercial banks. It indicates that Ethiopian commercial banks have strictly follow-up the timely collection of loan disbursed with interest income.

❖ **Earning Ability (EA) and net interest margin (NIM)**

Table 17 above depicted that, the coefficient of Earning Ability (EA) measured by Interest Income to Total Income is 0.060719 and its P-value is 0.0000. Holding other independent variables constant at their average value, when Earning Ability (EA) increased by one percent, net interest margin (NIM) of sampled Ethiopian commercial banks would be increased by 6%, and statistically insignificant at 1% of significance level. In other words, there is significant positive relationship between Earning Ability (EA) and net interest margin (NIM) of sampled Ethiopian commercial banks. Therefore, the researcher rejects the null hypothesis that there is negative relationship between EA and NIM. This means, there is no sufficient evidence to support the negative relationship between EA and NIM.

In contrary to the hypothesis of this research, EA shows a positive relationship with net interest margin (NIM) of sampled Ethiopian commercial banks. The result is consistent with the findings of (Yuqi , 2006) and (Guru et al ,1999).

The possible reason for the positive association between EA and NIM could be attributed to the fact that, Ethiopian commercial banks was more depend on interest income than other sources of incomes.

❖ **Liquidity management (LM) and net interest margin (NIM)**

Table 17 above depicted that, the coefficient of Liquidity management (LM) measured by liquid assets to total deposits is 0.003385 and its P-value is 0.7021. Holding other independent variables constant at their average value, when Liquidity management (LM) increased by 1%, net interest margin (NIM) of sampled Ethiopian commercial banks would be increased by 0.03% but statistically insignificant at 5% of significance level. Therefore, the researcher failed to reject the null hypothesis that there is positive relationship between Liquidity management and net interest margin. This means, there is no sufficient evidence to support the negative relationship between Liquidity management and net interest margin.

As expected, Liquidity management has a positive relationship with net interest margin in Ethiopian commercial banks. The relationship is positive as expected and this positive relationship

between LM and NIM could be attributed to the fact that Ethiopian commercial bank hold more liquid asset have the possibility to disburse the cash as a loan to customers and earn more interest income than banks that have less liquid assets. This finding is consistent with previous studies (Bourke, 1989), (Yuqi , 2006), and (Tobias & Themba , 2011) stated that liquidity is the major causes of bank failure.

The possible reason for the positive association between LM and NIM could be attributed to the fact that, Ethiopian commercial bank hold more liquid asset which have the possibility to disburse the cash as a loan to customers and earn more interest income than banks that have less liquid assets.

❖ **Bank Size (BS) and net interest margin (NIM)**

The above table 17 depicted that, the coefficient of Bank size (BS) measured by Log of Total Assets is 0.018779 and its P-value is 0.0000. Holding other independent variables constant at their average value, when Bank size (BS) increased by one birr, net interest margin (NIM) of Ethiopian commercial banks would be increased by 2% and statistically significant at 1% of significance level. Therefore, the researcher failed to reject the null hypothesis that BS has a positive effect on NIM. This means, there is no sufficient evidence to support the negative relationship between NIM and BS.

The relationship is positive as expected and this positive relationship between BS and NIM could be attributed to the fact that in Ethiopian banking industry the large bank size performs better than the smaller banks due to the existence of economies of scale. The result is consistent with the previous studies of (Gul, Faiza, & Khalid, 2011), (Athanasoglou, Delis, & Staikouras , 2006), (Sufian & Shah, 2009), (Weersainghe & Ravinda, 2013), (Yadollahzadeh, Ahmadi, & Soltan, 2013), (Sarita, Zandi, & Shahabi, 2012) and (Masood & Ashraf, 2012) suggesting that large banks may benefited from economies of scale, in contrast, (Dietrich & Wanzenried, 2009) and (Ezra, 2013) found negative relationship between bank size and performance. They suggested that the smaller the bank, the more efficient the bank will be. Therefore, the finding of this study shows that in Ethiopian banking industry the large bank size perform better than the smaller banks due to the existence of economies of scale. Thus, this study

accepted the hypothesis which stated there is a positive relationship between bank size and bank performance measured by NIM in Ethiopia.

The possible reason for the significant positive relationship could be that, banks in large size perform better than the smaller banks due to the existence of economies of scale.

❖ **Foreign Exchange rate (FEXRA) and net interest margin (NIM)**

Table 17 above depicted that, the coefficient of Foreign Exchange rate (FEXRA) is 0.000461 and its P-value is 0.2741. Holding other independent variables constant at their average value, when Foreign Exchange rate (FEXRA) increased by 1%, net interest margin (NIM) of sampled Ethiopian commercial banks would be increased by 0.05% but statistically insignificant at 5% of significance level. Therefore, the researcher failed to reject the null hypothesis that there is positive relationship between Foreign Exchange rate and net interest margin. This means, there is no sufficient evidence to support the negative relationship between Foreign Exchange rate and net interest margin.

As expected, Foreign Exchange rate has a positive relationship with net interest margin in Ethiopian commercial banks. The relationship is positive as expected and this positive relationship between FEXRA and NIM could be attributed to the fact that Ethiopian commercial bank hold more asset in foreign currency have advantage when the exchange rate of the currency increased by selling it for more Ethiopia birr and disbars it as a loan and earn more interest income than banks hold less assets in foreign currency. This finding is consistent with previous studies researchers (Evans., 2014) and (Songul., 2013).

The possible reason for the positive association between FEXRA and NIM could be attributed to the fact that, Ethiopian commercial bank hold more asset in foreign currency, have advantage when the exchange rate of the currency increased by selling it for more Ethiopian birr and disburse it as a loan and earn more interest income than banks hold less assets in foreign currency.

4.5 Summary of Analysis

Table 18 Summary and Comparison of test result with expectation for ROA model

Dependent variable		ROA		
Explanatory variables	Expected relationship	Actual relationship	Statistical significance Test	Hypothesis status
CA	Positive	Positive	significant at1%	Failed to reject
AQ	Negative	Negative	significant at1%	Failed to reject
EA	Negative	Negative	significant at1%	Failed to reject
LM	Positive	Negative	Insignificant	reject
BS	Positive	Positive	significant at1%	Failed to reject
FEXRA	Positive	Negative	Insignificant	reject

Source: own computation

As shown from the above summary table 18 the independent variables: liquidity management and foreign exchange rates were deviated from the expected results i.e. the researcher hypothesized positive relationship but the finding result is negative. So, the possible reason for the negative association between LM and ROA could be attributed to the fact that, Ethiopian banks hold more liquid assets rather to disburse it as a loan and earn interest income. The insignificant negative relationship between FEXRA and ROA is due-to that commercial banks in Ethiopia don't have significant deposit in foreign currency and the impact of liability incurred in foreign banks in connection with the importers are billed to the importers according to the costs incurred by the banks.

Table 19 Summary and Comparison of test result with expectation for ROE model

Dependent variable		ROE		
Explanatory variables	Expected relationship	Actual relationship	Statistical significance Test	Hypothesis status
CA	Positive	Negative	significant at1%	reject
AQ	Negative	Negative	significant at1%	Failed to reject
EA	Negative	Negative	significant at1%	Failed to reject
LM	Positive	Negative	significant at 5%	Reject
BS	Positive	Positive	significant at1%	Failed to reject
FEXRA	Positive	Negative	significant at5%	Reject

Source: own computation

As shown from the above summary table 19, independent variables: Capital adequacy, Liquidity Management and Foreign exchange rate were deviated from the expected results. Although the researcher hypothesized positive relationship, the finding result is negative. So, the possible reason for the negative association between CA and ROE could be attributed to the fact that, when the assets of the banks financed by shareholders capital the amount expected as a return from each birr invested in banks share is decreased. That is why Ethiopian banking sectors depend heavily on customers deposit than investment in the capital of the bank. The possible reason for the negative association between LM and ROE could be attributed to the fact that, Ethiopian banking industry holds more liquid assets than to disburse it as a loan and earn more interest income. The possible reason for the significant negative relationship between Foreign exchange rate and return on equity of Ethiopian commercial banks could be attributed to shortage of foreign currency and not earn service charges from foreign transaction like letter of credit (LC) and cash against documents (CAD).

Table 20 Summary and Comparison of test result with expectation for NIM model

Dependent variable		NIM		
Explanatory variables	Expected relationship	Actual relationship	Statistical significance Test	Hypothesis status
CA	Positive	Positive	significant at 1%	Failed to reject
AQ	Negative	Negative	Insignificant	Failed to reject
EA	Negative	Positive	significant at 1%	Reject
LM	Positive	Positive	Insignificant	Failed to reject
BS	Positive	Positive	significant at 1%	Failed to reject
FEXRA	Positive	Positive	Insignificant	Failed to reject

Source: own computation

As shown from the above summary table 20, the independent variable; earning ability was deviated from the expected result i.e. the researcher hypothesized negative relationship with NIM but the finding result is positive. The possible reason for the positive association between EA and NIM could be attributed to the fact that, Ethiopian commercial banks depend on interest income than other sources of income.

CHAPTER FIVE

Summery, Conclusion and Recommendation

Based on the finding of the study summary and conclusions are drawn and possible recommendations are forwarded. Accordingly, the first section presents the summary and conclusion part and the second section present the possible recommendation.

5.1. Summary

The main objective of this study was to examine the determinants of 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. Those factors include Capital adequacy, asset quality, earning ability, liquidity management and bank size. Furthermore, external factors represent events outside the influence of the banks and also called macroeconomic factor which is foreign exchange rate among others. And three regression models are used for three financial performance measures: (ROA), (ROE), and (NIM).

By using internal factors such as Capital adequacy, asset quality, earning ability, liquidity management and bank size with the external variable foreign exchange rate this study examined the determinants of financial performance of commercial banks in Ethiopia over the period 2000-2014, which were analyzed using descriptive statistics, and multiple linear regression analysis. The analyses were made in line with the specific research objectives and stated hypotheses formulated in the study. Thus, panel data of seven banks for fifteen years was used for the analysis purpose. Data used for the bank specific factors were obtained from each bank audited financial reports, whereas data of external factors were obtained from NBE. Before making regression analysis, the study goes through all diagnostic tests, including multicollinearity, hetroskadacity; normality and autocorrelation were made for the classical linear regression model by using E-veiws9 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 Multi-collinearity and normally distributed.

In relation to financial performance measured by ROA; CA, AQ, EA and BS have significant impact on the financial performance of Ethiopian commercial banks, but LM and FEXRA have no significant impact. CA and BS have positive coefficient, but AQ, EA, LM and FEXRA have negative coefficient. Except LM and FEXRA all independent variables have negative relationship with return on asset in agreement with the hypothesis. The explanatory variables included in this study jointly explain about 58 percent of the variation in return on asset.

With regard to ROE as a financial performance measure for the study; all explanatory variables except BS i.e. CA, AQ, EA, LM, and FEXRA has a negative relationship and 1%, 1%, 1% , 5% and 5% significance level respectively. BS has a positive relationship with 1% statistically significance level. Against to the hypothesis the regression analysis result indicated that CA, LM and FEXRA have a negative relationship with return on equity. Although, there is negative relationship between return on equity and liquidity, it is significant, which means the more liquidity the bank, the lower the profitability.

Also Result shows that CA, EA and BS had a significant relationship with NIM. The rest three explanatory variables i.e. AQ, LM and FEXRA were found to be insignificant with NIM. In addition, the study has showed positive coefficient for financial performance measured by NIM CA, EA, BS, and FEXRA while AQ have negative coefficient. Also the coefficient of determination (adjusted R^2) is 0.613117 which indicates that the explanatory variables were able to account 61% of the total variations of the dependent variable NIM.

Asset quality (AQ) measured by non-performing loan to total loans have negative relationship with the financial performance of Ethiopian commercial banks measured by ROA, ROE and NIM. Except with NIM which shows insignificance, from both ROA and ROE it have 1% significance level relationship.

Bank size (BS) has a significant and positive impact on financial performance of Ethiopian commercial banks measured (ROA, ROE and NIM) this shows that in Ethiopia banking industry

large bank size performs better than the smaller banks due to the existence of economies of scale in contrast banks with less size perform less.

Foreign Exchange rate (FEXRA) has negative and insignificant relationship with ROA, negative and significant relationship with ROE and positive and insignificant relationship with NIM. This shows that there was a shortage and excess of asset and liability in foreign currency respectively in the financial reports of commercial banks in Ethiopian. In the other hand, there was also a shortage of foreign currency as a whole in the financial sector.

5.2 Conclusion

Based on the findings, it can be concluded that Capital adequacy and bank size, have 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 Asset quality, Earning ability and Foreign exchange rate have significant impact on ROA with a negative relationship; which means any increase/decrease on the value of these variables leads to a decrease/increase on financial performance of Commercial banks (ROA) respectively. In contrast, Liquidity Management has no significant relationship with ROA.

Capital Adequacy, Asset quality, Earning ability, Liquidity Management and Foreign exchange rate have significant impact on ROE with a negative relationship; which means any increase/decrease on the value of these variables leads to a decrease/increase on financial performance of Commercial banks Measured by ROE respectively. And also Bank Size has significant impact on ROA with a positive relationship; it implies that any increase/decrease on the value of these variables leads to an increase/decrease on financial performance of Commercial banks (ROE).

Concerning on the net interest margin, Capital Adequacy, Earning ability and bank size have significant impact on NIM 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 Measured by NIM respectively. In contrast, asset quality, Liquidity management and foreign exchange rate have no significant relationship with NIM.

5.3 Recommendation

Based on the study finding, the financial performance of Ethiopian commercial banks measured by ROA, ROE and NIM were mainly affected by the internal factors; i.e. Capital adequacy, Earning ability and Bank size. Since the management of the bank has control over the bank specific (internal) factors, it is possible to improve the performance of the bank by giving more attention on the identified bank specific factors such as, Capital adequacy, Earning ability and bank size.

Management bodies of Ethiopian commercial banks should strive to strengthen the bank specific factors like capital adequacy, earning ability and bank size. Since, they are found to be the most significant variables that affect financial performances of Ethiopian commercial banks measured by ROA, ROE and NIM.

- ✓ They have to Strengthening their capital to make them the best financial performer by selling their share to existing shareholders and new entrants to the banking industry investment.
- ✓ Deposit mobilization is the main issue of the banking sector because the banks with more deposit have the capacity to disburse more loans in order to get more interest income and increasing the capital level by retained it rather than distributing it as a dividend and also the disbursed loans increases the asset of the banks, so they have to work hard on it.
- ✓ It is better to commercial banks to have a diversified income source i.e. collecting more Service charges from foreign transactions like (foreign money transfer, letter of credit and other sources) because, this source of income is more crucial during loan default risk and interest rate fluctuation occur. And also Ethiopian commercial banks can improve their fee based income by introducing innovative products and services to make them best financial performer.
- ✓ And also they have to build their own asset in order to make them best financial performer by acquiring and building more fixed assets.

Finally, this study investigates the determinants of financial performance of commercial banks in Ethiopia. But, the variables included in the study were not exhaustive enough. Other researchers may include the rest unseen bank specific and macroeconomic variables.

References

- Aburime, U. (2005). Determinants of Bank Profitability: Company-Level Evidence from Nigeria. Nigeria: University of Nigeria, Enugu Campus.
- Aburime, U. T. (2008). Impact of Political Affiliation on Bank Profitability in Nigeria. *African Journal of Accounting, Economics, Finance and Banking Research*, Vol.4, No. 4, pp. 61-75.
- Ahmed, A. A. (2011). Financial Performance Evaluation of Some Selected Jordanian Commercial Banks. *International Research Journal of Finance and Economics*, Vol. 6(4), pp 50-63.
- Alexandru, C. G. (2008). The Assessment of Banking Performances-Indicators of Performance in Bank Area. *MPRA Paper No. 11600*.
- Alexiou, C., & Sofoklis, V. (2009). Determinants of Bank Profitability", Evidence from Greek Banking industry. *Economic Annals*, volume LIV No.182.
- Ali, K., Akhtar, M., & Ahmed, H. (2011). Bank-Specific and Macroeconomic Indicators of Profitability - Empirical Evidence from the Commercial Banks of Pakistan. *International Journal of Business and Social Science*, Vol. 2(6), 235-242.
- Alkhatib, A. (2012). „Financial Performance of Palestinian Commercial Banks“. *International Journal of Business and Social Science*, Vol. 3 No. 3.
- Al-Tamimi, H., & Hassan, A. (2010). Factors Influencing Performance of the UAE Islamic and Conventional National Banks. . Department of Accounting, Finance and Economics, College of Business Administration, University of Sharjah.
- Amdemikael, A. (2012). „Factors Affecting Profitability of Ethiopian Banking Industry“, Msc Thesis, Addis Ababa University. .
- Athanasoglou, P. P., Sophocles, N. B., & Matthaios, D. D. (2005). Bank-specific, industry-specific and macroeconomic determinants of bank profitability . Working paper, Bank of Greece. *Vol. 1(1)*, pp 3-4.
- Athanasoglou, P., Delis, M., & Staikouras, C. (2006). Determinants of Bank profitability in the South Eastern European region Munich Personal RePEc Archive (MPRA) Paper No. 10274. .
- Badola, B., & Verma, R. (2006). Determinants of profitability of banks in India a multivariate analysis ., *Delhi Business Review X*, Vol. 7, No. 2, pp. 11 - 19.
- Baltagi, B. H. (2005). *Econometric analysis of Panel data* (3rd ed. ed.). John Wiley and sons Ltd.

- Baral, K. J. (2005). Health Check-up of Commercial Banks in the Framework of CAMEL: A Case Study of Joint Venture Banks in Nepal. *The Journal of Nepalese Business Studies*, Vol. 2(1), Pp. 14-35.
- Belayneh, H. (2011). Determinants of Commercial Banks profitability of Ethiopian.
- Berger, A. N. (1995). The Profit-Structure Relationship in Banking-Tests of Market-Power and Efficient-Structure Hypotheses. *Journal of Money, Credit and Banking*, Vol. 27, No.2, pp. 404-31.
- Bikker, J., & Hu, H. (2002). *Cyclical patterns in profits, provisioning and lending of banks and procyclicality of the new Basel capital requirements*. BNL Quarterly.
- Birhanu, T. (2012). „Determinants of Commercial Banks Profitability of Commercial Banks in Ethiopia“, Msc thesis, Addis Ababa University. .
- Bobakova, I. V. (2003). Raising the Profitability of Commercial Banks. *Journal of International Finance*, Volume XI, pp. 21-25., Volume XI, pp. 21-25.
- Bourke, P. (1989). Concentration and other determinants of bank profitability in Europe, North America and Australia. *Journal of Banking and Finance*, pp. 65- 79.
- Brooks, C. (2008). *Introductory Econometrics for Finance* (2nd edition ed.). Newyork, Cambridge University press.
- Chantapong, S. (2005). Comparative Study of Domestic and Foreign Bank Performance in Thailand:The Regression Analysis. The Office of Macroeconomic Policy and Analysis, Monetary PolicyGroup (MPG), The Central Bank of Thailand, Bangkokhuntr, 2005.
- Cooper, & Schendlar, C. D. (2003). *Business Research Methods* (8th, Ed ed.). New York: k: McGraw- Hill/Irwin.
- Dang, & Uyen. (2011). The CAMEL Rating System in Banking Supervision: a Case Study of Arcada University of Applied Sciences, International Business.
- Davydenko , A. (2010). Determinants of Bank Profitability in Ukraine. *Undergraduate Economic Review*, Vol. 7, Nop. 1, pp. 9 - 18.
- Deepak, K., & Abebaw, K. G. (2011). Financial performance and ownership structure of Ethiopian commercial banks. *Journal of Economics and International Finance*, Vol. .
- Demirguc-Kunt, A., & Detragiache, E. (2000). Monitoring Banking sector fragility: a multivariate logit approach. *World Bank Economic Review*, Oxford University Press, Vol. 14, No. 2, pp. 287-307.

- Dietrich, A., & Wanzenried, G. (2009). „What Determines the Profitability of Commercial Banks ?“ New Evidence from Switzerland. .
- Directive.No.SBB/9/95. (2011, December 10). National Bank of Ethiopia, Licensing and Supervision of Banking Business ProclamationNo. 84/1994 (1994). Computation of Risk Weighted Asset Business. [Online], available at <http://www.nbe.gov.et>. Addis Ababa, Ethiopia.
- Elyor, S. (2009). Factors Affecting the Performance of Foreign Banks in Malaysia. A Thesis Submitted in Partial Fulfillment of the Requirements of Universiti Utara Malaysia for the Degree of Master of Science (Banking). [Online]. October 2009.Available from:www.ep3.uum.edu.
- Evans, O. (2014). effects of macroeconomic factors on commercial banks profitability in Kenya:Case of Equity bank limited.
- Evans., O. (2014). effects of macroeconomic factors on commercial banks profitability in Kenya:Case of Equity bank limited. .
- Ezra, M. (2013). „Determinants of Commercial Bank Profitability in Sub-Saharan Africa“. *International Journal of Economics and Finance, Vol.5*.
- Flamini, C., Valentina , C., McDonald, G., & Liliana, S. (2009). The Determinants of Commercial Bank Profitability in Sub-Saharan Africa. IMF Working Paper.
- Fries, S., Neven, D., & Seabright, P. ((2002). Bank Performance in Transition Economies. *European Bank for Reconstruction and Development Working Paper, No.7*, pp. 115 - 122.
- Ghazouani, I., & Moussa, S. (2013). „Explanatory Factors of Bank performance“, Evidence from Tunisia. *International Journal of Economics, Finance and Management, Vol2, NO.1*.
- Goddard, J., Molyneux, P. and Wilson, S. J. (2004). The profitability of European Banks: a cross-sectional and dynamic panel analysis. The Manchester School,. *Vol.72 No.3*, 363-381 and 1463-6786.
- Gujarati, D. (2004). „*Basic Econometrics*“(4th edition ed.). Boston: McGrawHill.
- Gujarati, D. N. (2004). *Basic Econometrics* (edition ed., Vol. Vol. 4th). MacGraw-hill Companies.
- Gul, S., Faiza, I., & Khalid, Z. (2011). Factors Affecting Bank Profitability in Pakistan. *The Romanian Economic Journal,, Vol. 2(3)*, pp. 6-9.

- Guru , B. J., Staunton, & Balashanmugam. (2002). Determinants of commercial bank profitability in Malaysia. *University Multimedia working papers*, pp. 19 - 27.
- Habtamu, N. (2012). Determinants of Bank Profitability“, An Empirical Study on Ethiopian Private Commercial Banks, Msc thesis, School of Business and Public Administration, Addis Ababa university.
- Hadad, F. (2013). „Financial performance of Rural Banks in Ghana“ A Case Study on Naara Rural Bank, European. *Journal of Banking and Finance, Vol.11*.
- Hair JF, B. W. (2006). *Multivariate data analysis* (6th Edition ed.). New Jersey: Pearson Education.
- Heffernan, S. ((1996)). *Modern banking in Theory and Practice*. England: John Wiley &.
- Hu, H., & Bikker, J. (2002). Cyclical patterns in profits, provisioning and lending of banks and procyclicality of the new Basel capital requirements. *BNL Quarterly Review* 221. pp.143-175.
- Ilhomovich, S. E. (2009). Factors affecting the performance of foreign banks in Malaysia. . Malaysia: A thesis submitted to the fulfillment of the requirements for the degree Master of ScCollege of Business (Finance and Banking.)ience (Banking).
- Jah, S., & Hui, X. (2012). A comparison of financial performance of commercial. *African Journal of Business Management, 6(25)*, 7601-7611.
- Kennedy , P. (2008). *Guide to econometrics* (6th edn ed.). Malden: Blackwell Publishing.
- Khrawish, H. A. (2011). Determinants of Commercial Banks Performance: Evidence from Jordan. *International Research . Zarqa University, . Journal of Finance and Economics, Vol. 5(5)*, pp. 19-45.
- Kosmidou, K. (2008). The determinants of Bank“s profit in Greece during the period of EU Financial Integration., *Maneerial Finance*(Issue, 34), pp. 146 - 159.
- Kosmidou, Tanna, & Pasiouras. (2006). Determinants of profitability of domestic UK commercial banks: Panel evidence from the period 1995-2002, .
- Kumbirai, M., & Webb, R. (2010). „A Financial Ratio Analysis of Commercial Bank Performance in South Africa“. *African Review of Economics and Finance, vol.2, No.1*.
- Lamarana, M. (2012). „Financial Performance of the Malaysian Banking Industry“ Domestic vs Foreign Banks, Eastern Mediterranean University .

- Marshall, J. (2009). The financial crisis in the US: key events, causes and responses, . *Research Paper 09/34*, <http://www.parliament.uk>.
- Masood, O., & Ashraf, M. (2012). „Bank Specific and Macroeconomic Profitability Determinants of Islamic Banks“, The Case of Different Countries, *Qualitative Research in Financial Markets*,. *Vol.4, No.2/3*.
- Mohana, K., & Tekeste, B. (2012). „Determinants of profitability of Commercial Banks in Developing country“, Evidence from Ethiopia. *International Journal of Accounting and Finance*, *Vol.2* (Issue 3).
- Moin, M. S. (2008). Performance of Islamic Banking and Conventional Banking in Pakistan: A Comparative Study. Unpublished Master’s thesis, University of Skovde, School of Technology and Society, Skovde. .
- Murthy, Y., & Sree, R. O. (2003). A Study on Financial Ratios of major Commercial Banks. *Research Studies, College of Banking & Financial Studies, Sultanate of Oman*.
- Naceur, S. B., & Goaid, M. (2001). The determinants of commercial bank interest.
- Nassreddine, G., Fatman, S., & Anis, J. (2013). Determinants of Banks performance“ Viewing Test by Cognitive Mapping Technique, A case of Biat“. *International Review of Management and Business Research*,. *Vol.2*(Issue.1).
- NBE Directives No.SBB/9/95. (n.d.). National Bank of Ethiopia Licensing and Supervision of Banking Business Proclamation No.84/1994 (1994). Minimum Capital Requirement for Banks [Online], available at <http://www.nbe.gov.et> [accessed on december 10, 2011].
- NBE, N. B. (2009/10.). *NBE, “Annual report”*. Addis Ababa, Ethiopia.
- Neely, M., & Wheelock, D. (1997). Why does bank performance vary across states? *Federal Reserve Bank of St. Louis Review*, pp. 27-38.
- Ngo, P. T. (2006). Endogenous Capital and Profitability in Banking. *Journal of Economics and Finance, the Australian National University Working Paper No. 464 ISBN 86831 4641*, pp. 54 - 69.
- Okoth, V., & Gemechu, B. (2013). „Determinants of Financial Performance of Commercial Banks in Kenya“. *International Journal of Economics and Financia, Issues Vol. 3, No.1*.
- Oloo, O. (2010). Banking Survey Report, The best banks this decade 2000-2009 , Think Business Limited, Kenya, www.bankingsurvey.co.ke.
- Olweny, T., & Shipho, T. M. (2011). Effects of Banking Sectoral Factors on the Profitability of Commercial Banks in Kenya. *Economics and Finance Review*, *1(5)*, 1-30.

- Ommeren, S. (2011). An examination of the Determinants of Banks' Profitability in the European Banking sector. Unpublished Master's thesis, Erasmus University, school of Economics, departments of Finance, Rotterdam.
- Ongore, V. O. (2011). The relationship between ownership structure and firm performance: An empirical analysis of listed companies in Kenya. *African Journal of Business Management*, Vol.5(6), PP 2120-2128.
- P., A., S.N., B., & M.D., D. (2005). Bank-specific, Industry-specific and Macroeconomic determinants of bank profitability. *Working paper No.*
- Rasiah, D. (2010). Theoretical framework of profitability as applied to commercial banks.
- Said, R. M., & Mohd, H. T. (2011). Performance and Financial Ratios of Commercial Banks in Malaysia and China.
- Sangmi, & Tabassum, N. (2010). Analyzing Financial Performance of Commercial Banks in India: Application of CAMEL Model. *Pakistan Journal Commercial Social Sciences*.
- Sarita, B., Zandi, G., & Shahabi, A. (2012). „Determinants of Performance in Indonesian Banking“, A cross-sectional and Dynamic panel Data Analysis. .
- Shankar, K. (1997). Planning for Capital adequacy in public sector banks. *The Management Accountant*, 32(2), 100-104.
- Shekhar, K., & Lekshmy, S. (2007). *Banking Theory and Practice* (20th ed ed.). New Delhi: VIKAS publshig House.
- Short, B. (1979). The Relation between Commercial Bank Profit Rates and Banking Concentration in Canada, Western Europe and Japan. *Journal of Banking and Finance*(Issue, 3), pp. 209-219.
- Siddiqui, M. A., & Shoaib, A. (2011). Measuring performance through capital structure: Evidence from banking sector of Pakistan. *African Journal of Business Management*, Vol. 5(5), pp 1871-1879.
- Smirlock, M. (1985). Evidence on the None Relationship between Concentration and Profitability in Banking. *Journal of Money, Credit and Banking*, Vol. 17, No.1, pp.69 -83.
- Songul., K. (2013). Turkish banking sectors profitability factors.
- Sufian, F. (2011). „Profitability of The Korean Banking Sector“, Panel Evidence on Bank Specific and Macroeconomic Determinants. *Journal of Economics and Management*, vol.7,No.1 , PP.43-72.

- Sufian, F., & Shah, M. (2009). „Determinants of Bank Profitability in a Developing Economy“, Empirical Evidence from Bangladesh. *Journal of Business Economics and Management*.
- Tan, Y., & Floros, C. (2012). „Bank profitability and Inflation“, The case of China. *Journal of Economic Studies*, vol.39 No.6, pp.675-696.
- Tobias, O., & Themba, M. S. (2011). Effects of Banking Sectoral.
- Uzhegova, O. (2010). The Relative Importance of Bank-specific Factors for Bank Profitability in Developing Economies/P 2010/02. [Online]. April 2010. Available from: <http://ssrn.com/abstract=1595751>. [Accessed: 10 June 2010].
- Vong, A. I., & Chan, H. S. (2008). Determinants of Bank Profitability in Macao. *Journal of Economics and Finance*, Vol. 7 No 19, pp. 93 - 109.
- Vong, A., & Hoi, S. (2009). Determinants of Bank Profitability in Macao. Faculty of Business Administration, University of Macau.
- Weersainghe, V., & Ravinda, T. (2013). „Determinants of profitability of Commercial Banks in Srilanka“. *International Journal of Arts and commerce*, vol.2 No.10. .
- Wen, W. (2010). Ownership Structure and Banking Performance: New Evidence in China. Universitat Autònoma de Barcelona Departament D'economia de L'empresa, 2010.
- Yadollahzadeh, N., Ahmadi, M., & Soltan, M. (2013). „The Effective Factors on profitability of Commercial Banks in Iran“. *World of Sciences Journal*.
- Yuqi, L. (2006). Determinants of Banks. Profitability and its Implication on Risk Management Practices: Panel Evidence from the UK in the Period 1999-2006; University of Nottingham .

Appendices

Appendix -I: Tests for the Heteroskedasticity on ROA model: ARCH

Heteroskedasticity Test: ARCH

F-statistic	1.263494	Prob. F(1,101)	0.2637
Obs*R-squared	1.272594	Prob. Chi-Square(1)	0.2593

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 03/15/16 Time: 16:31

Sample (adjusted): 3 105

Included observations: 103 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.23E-05	1.26E-05	4.929405	0.0000
RESID^2(-1)	0.111070	0.098812	1.124053	0.2637

R-squared	0.012355	Mean dependent var	7.01E-05
Adjusted R-squared	0.002577	S.D. dependent var	0.000108
S.E. of regression	0.000107	Akaike info criterion	-15.42035
Sum squared resid	1.17E-06	Schwarz criterion	-15.36919
Log likelihood	796.1481	Hannan-Quinn criter.	-15.39963
F-statistic	1.263494	Durbin-Watson stat	2.007558
Prob(F-statistic)	0.263655		

Appendix -II: Tests for the Heteroskedasticity on ROE model: ARCH

Heteroskedasticity Test: ARCH

F-statistic	2.940444	Prob. F(1,97)	0.0896
Obs*R-squared	2.912774	Prob. Chi-Square(1)	0.0879

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 03/15/16 Time: 16:35

Sample (adjusted): 3 105

Included observations: 99 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.007273	0.002781	2.615740	0.0103
RESID^2(-1)	0.171446	0.099982	1.714772	0.0896

R-squared	0.029422	Mean dependent var	0.008767
Adjusted R-squared	0.019416	S.D. dependent var	0.026533
S.E. of regression	0.026274	Akaike info criterion	-4.420492
Sum squared resid	0.066960	Schwarz criterion	-4.368066
Log likelihood	220.8144	Hannan-Quinn criter.	-4.399280
F-statistic	2.940444	Durbin-Watson stat	1.929035
Prob(F-statistic)	0.089580		

Appendix -III: Tests for the Heteroskedasticity on NIM model: ARCH

Heteroskedasticity Test: ARCH

F-statistic	0.651265	Prob. F(1,101)	0.4216
Obs*R-squared	0.659906	Prob. Chi-Square(1)	0.4166

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 03/15/16 Time: 16:38

Sample (adjusted): 3 105

Included observations: 103 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000157	3.33E-05	4.723822	0.0000
RESID^2(-1)	0.079984	0.099112	0.807010	0.4216

R-squared	0.006407	Mean dependent var	0.000171
Adjusted R-squared	-0.003431	S.D. dependent var	0.000291
S.E. of regression	0.000291	Akaike info criterion	-13.42419
Sum squared resid	8.58E-06	Schwarz criterion	-13.37303
Log likelihood	693.3459	Hannan-Quinn criter.	-13.40347
F-statistic	0.651265	Durbin-Watson stat	1.988339
Prob(F-statistic)	0.421557		

Appendix-IV: Summary of ratio data

Years	ROA	ROE	NIM	CA	AQ	EA	LM	BS	FEXRA	BANK
2000	0.0294	0.3188	0.0692	0.0611	0.1421	0.7559	0.4034	10.3243	8.1426	CBE
2001	0.0092	0.0149	0.0653	0.0556	0.1891	0.7348	0.2489	10.3681	8.3279	CBE
2002	0.0229	0.5678	0.0260	0.0374	0.2494	0.5838	0.1453	10.3453	8.5425	CBE
2003	0.0290	0.3968	0.0688	0.0554	0.3367	0.5148	0.1949	10.3915	8.5809	CBE
2004	0.0179	0.2855	0.0654	0.0517	0.3345	0.5379	0.1934	10.4451	8.6197	CBE
2005	0.0238	0.4064	0.0458	0.0430	0.2522	0.4648	0.4715	10.5208	8.6518	CBE
2006	0.0306	0.5269	0.0649	0.0420	0.1771	0.4603	0.2568	10.5542	8.6810	CBE
2007	0.0270	0.2053	0.0819	0.0973	0.1366	0.4583	0.2991	10.6374	8.7943	CBE
2008	0.0371	0.2988	0.0619	0.0906	0.0428	0.5187	0.2665	10.7019	9.2441	CBE
2009	0.0458	0.3817	0.0931	0.0848	0.0199	0.6109	0.2014	10.7739	10.4205	CBE
2010	0.0379	0.3558	0.0892	0.0746	0.0076	0.6103	0.1946	10.8703	12.8909	CBE
2011	0.0371	0.4592	0.0889	0.0546	0.0040	0.6799	0.1916	11.0579	16.1178	CBE
2012	0.0499	0.7060	0.0883	0.0485	0.0241	0.5792	0.1281	11.2010	17.2536	CBE
2013	0.0438	0.6380	0.1047	0.0470	0.0274	0.6949	0.1133	11.2910	18.1947	CBE
2014	0.0399	0.6196	0.0955	0.0441	0.0112	0.6977	0.0619	11.3851	19.0748	CBE
2000	0.0207	0.1241	0.0544	0.1014	0.1629	0.7064	0.3407	9.0158	8.1426	AIB
2001	0.0256	0.1358	0.0495	0.1160	0.1241	0.6780	0.3488	9.0417	8.3279	AIB
2002	0.0089	0.0688	0.0481	0.0979	0.2054	0.6471	0.2467	9.1470	8.5425	AIB
2003	0.0120	0.1129	0.0520	0.0842	0.2019	0.5850	0.2316	9.2625	8.5809	AIB
2004	0.0203	0.1761	0.0410	0.0828	0.1320	0.5699	0.3280	9.3764	8.6197	AIB
2005	0.0211	0.1853	0.0485	0.0807	0.0701	0.6240	0.2834	9.4756	8.6518	AIB
2006	0.0211	0.1853	0.0485	0.0807	0.0701	0.6240	0.2762	9.4756	8.6810	AIB
2007	0.0364	0.2785	0.0524	0.0928	0.0546	0.6265	0.2470	9.5662	8.7943	AIB
2008	0.0375	0.2625	0.0615	0.1009	0.0513	0.6081	0.3063	9.6797	9.2441	AIB
2009	0.0425	0.2809	0.0915	0.1067	0.0527	0.5795	0.6011	9.8532	10.4205	AIB
2010	0.0389	0.2580	0.0495	0.1063	0.0218	0.4417	0.5023	9.9554	12.8909	AIB
2011	0.0455	0.2698	0.0482	0.1205	0.0381	0.4255	0.5032	10.0449	16.1178	AIB
2012	0.0404	0.2390	0.0717	0.1258	0.0183	0.6020	0.3069	10.1181	17.2536	AIB
2013	0.0328	0.2123	0.0700	0.1162	0.0247	0.6270	0.2611	10.2500	18.1947	AIB
2014	0.0375	0.2381	0.0828	0.1175	0.0290	0.6341	0.3140	10.3445	19.0748	AIB
2000	0.0196	0.1421	0.0535	0.0834	0.0001	0.7183	0.5050	8.9660	8.1426	DB
2001	0.0297	0.2426	0.0569	0.0717	0.0655	0.6565	0.4298	9.0918	8.3279	DB
2002	0.0246	0.1944	0.0490	0.0783	0.0736	0.6694	0.3427	9.1940	8.5425	DB
2003	0.0185	0.2058	0.0427	0.0647	0.0576	0.6129	0.3210	9.2992	8.5809	DB
2004	0.0293	0.3268	0.0466	0.0643	0.0437	0.6074	0.2628	9.4276	8.6197	DB
2005	0.0285	0.2930	0.0506	0.0710	0.0416	0.6902	0.3474	9.5340	8.6518	DB
2006	0.0408	0.3462	0.0568	0.0849	0.0318	0.6598	0.3004	9.6576	8.6810	DB

2007	0.0429	0.3453	0.0585	0.0901	0.0237	0.6600	0.3338	9.7811	8.7943	DB
2008	0.0424	0.3272	0.0601	0.0932	0.0192	0.6271	0.4624	9.8943	9.2441	DB
2009	0.0362	0.2750	0.0541	0.0934	0.0229	0.5754	0.5817	9.9882	10.4205	DB
2010	0.0371	0.2885	0.0475	0.0909	0.0197	0.5005	0.5065	10.0918	12.8909	DB
2011	0.0430	0.3227	0.0457	0.0953	0.0094	0.4708	0.5092	10.1661	16.1178	DB
2012	0.0510	0.3567	0.0613	0.1043	0.0096	0.5203	0.3947	10.2435	17.2536	DB
2013	0.0412	0.2966	0.0613	0.1036	0.0073	0.5618	0.3648	10.2955	18.1947	DB
2014	0.0436	0.2743	0.0602	0.1183	0.0068	0.5319	0.3573	10.3417	19.0748	DB
2000	0.0295	0.0994	0.0456	0.1721	0.0321	0.7750	0.3350	8.8559	8.1426	BOA
2001	0.0400	0.1332	0.0681	0.1640	0.0302	0.8079	0.2734	8.9529	8.3279	BOA
2002	0.0061	(0.0169)	0.0506	0.1192	0.1659	0.8233	0.4790	9.0722	8.5425	BOA
2003	0.0054	0.0364	0.0462	0.1045	0.1208	0.7674	0.4711	9.1531	8.5809	BOA
2004	0.0330	0.1988	0.0769	0.1165	0.1048	0.7875	0.3565	9.2180	8.6197	BOA
2005	0.0368	0.2411	0.0612	0.1135	0.0687	0.6903	0.4559	9.3484	8.6518	BOA
2006	0.0408	0.2173	0.0655	0.1333	0.0232	0.7498	0.3515	9.4792	8.6810	BOA
2007	0.0265	0.1646	0.0642	0.1126	0.0341	0.7557	0.2983	9.5536	8.7943	BOA
2008	0.0051	0.0396	0.0620	0.0984	0.0765	0.7265	0.4059	9.6304	9.2441	BOA
2009	0.0265	0.1933	0.0671	0.0948	0.1116	0.6815	0.5883	9.7385	10.4205	BOA
2010	0.0313	0.2401	0.0461	0.0932	0.0691	0.5584	0.5580	9.7979	12.8909	BOA
2011	0.0355	0.2701	0.0650	0.0908	0.0209	0.6020	0.4687	9.8620	16.1178	BOA
2012	0.0350	0.2380	0.0761	0.1100	0.0105	0.6880	0.3634	9.9159	17.2536	BOA
2013	0.0346	0.2390	0.0706	0.1090	0.0101	0.6749	0.2277	10.0069	18.1947	BOA
2014	0.0312	0.1771	0.0826	0.1356	0.0090	0.7249	0.2931	10.0522	19.0748	BOA
2000	0.0139	0.0681	0.0441	0.0968	0.0711	0.6388	0.6356	8.7112	8.1426	WB
2001	0.0243	0.1085	0.0643	0.0992	0.1251	0.6342	0.5059	8.7664	8.3279	WB
2002	0.0195	0.1009	0.0578	0.0988	0.1003	0.6796	0.4428	8.8104	8.5425	WB
2003	0.0171	0.1177	0.0458	0.1061	0.0823	0.6215	0.4458	8.9489	8.5809	WB
2004	0.0391	0.2456	0.0690	0.1129	0.0481	0.5991	0.4663	9.0570	8.6197	WB
2005	0.0392	0.2648	0.0614	0.1115	0.0427	0.5337	0.4186	9.2083	8.6518	WB
2006	0.0417	0.2783	0.0566	0.1127	0.0159	0.5455	0.3043	9.3540	8.6810	WB
2007	0.0438	0.2752	0.0630	0.1159	0.0195	0.5781	0.4144	9.5416	8.7943	WB
2008	0.0461	0.2293	0.0673	0.1468	0.0360	0.5537	0.4370	9.6154	9.2441	WB
2009	0.0500	0.2159	0.0757	0.1634	0.0285	0.4945	0.6055	9.7091	10.4205	WB
2010	0.0553	0.2124	0.0722	0.1832	0.0230	0.4373	0.5258	9.7591	12.8909	WB
2011	0.0568	0.2417	0.0773	0.1659	0.0186	0.3864	0.5390	9.9064	16.1178	WB
2012	0.0549	0.2092	0.0867	0.1922	0.0105	0.5489	0.3313	9.9215	17.2536	WB
2013	0.0433	0.1858	0.0901	0.1761	-	0.6035	0.2361	10.0168	18.1947	WB
2014	0.0359	0.1485	0.0949	0.1860	0.0042	0.6175	0.2956	10.0618	19.0748	WB
2000	0.0286	0.0699	0.0466	0.2520	0.0061	0.4491	0.6162	8.2178	8.1426	UB
2001	0.0363	0.0805	0.0649	0.2769	0.0098	0.5903	0.5426	8.3556	8.3279	UB
2002	0.0198	0.0433	0.0678	0.2676	0.0116	0.7072	0.6166	8.5167	8.5425	UB

2003	0.0144	0.0572	0.0435	0.1776	0.0076	0.5975	0.6037	8.7115	8.5809	UB
2004	0.0148	0.0729	0.0417	0.1424	0.0065	0.7105	0.5451	8.8287	8.6197	UB
2005	0.0400	0.2476	0.0500	0.1164	0.0057	0.5058	0.5418	9.0306	8.6518	UB
2006	0.0373	0.2283	0.0438	0.1196	0.0347	0.5654	0.4422	9.2040	8.6810	UB
2007	0.0398	0.1787	0.0604	0.1648	0.0256	0.6358	0.4418	9.3390	8.7943	UB
2008	0.0387	0.1946	0.0598	0.1439	0.0130	0.6120	0.5319	9.5119	9.2441	UB
2009	0.0287	0.1800	0.0587	0.1118	0.0387	0.6090	0.6358	9.6677	10.4205	UB
2010	0.0420	0.2736	0.0583	0.1081	0.0316	0.4916	0.6615	9.7706	12.8909	UB
2011	0.0418	0.2572	0.0609	0.1167	0.0210	0.5374	0.5704	9.8879	16.1178	UB
2012	0.0463	0.2704	0.0802	0.1254	0.0130	0.6237	0.4117	9.9438	17.2536	UB
2013	0.0375	0.2347	0.0766	0.1204	0.0198	0.6639	0.2525	9.9990	18.1947	UB
2014	0.0304	0.1766	0.0876	0.1326	0.0103	0.6876	0.3492	10.0747	19.0748	UB
2000	0.0059	0.0222	0.0409	0.2092	-	0.6422	0.7810	8.2829	8.1426	NIB
2001	0.0455	0.1855	0.0645	0.1576	0.0029	0.5957	0.4389	8.5975	8.3279	NIB
2002	0.0370	0.1340	0.0595	0.1661	0.0111	0.6370	0.4823	8.7721	8.5425	NIB
2003	0.0190	0.1081	0.0497	0.1230	0.0422	0.5650	0.3643	9.0068	8.5809	NIB
2004	0.0349	0.2009	0.0530	0.1237	0.0402	0.5955	0.3027	9.1449	8.6197	NIB
2005	0.0344	0.2051	0.0544	0.1168	0.0439	0.6105	0.3639	9.2809	8.6518	NIB
2006	0.0393	0.1984	0.0515	0.1406	0.0399	0.6715	0.2884	9.3069	8.6810	NIB
2007	0.0404	0.1779	0.0599	0.1631	0.0350	0.7098	0.3604	9.4161	8.7943	NIB
2008	0.0435	0.1890	0.0727	0.1639	0.0393	0.6633	0.5062	9.5623	9.2441	NIB
2009	0.0457	0.2114	0.0843	0.1516	0.0483	0.5953	0.6676	9.6818	10.4205	NIB
2010	0.0478	0.2192	0.0722	0.1535	0.0406	0.4785	0.5907	9.7760	12.8909	NIB
2011	0.0484	0.2105	0.0805	0.1646	0.0430	0.5069	0.6494	9.8520	16.1178	NIB
2012	0.0471	0.1873	0.0781	0.1846	0.0279	0.5710	0.4480	9.9178	17.2536	NIB
2013	0.0414	0.1718	0.0870	0.1822	0.0257	0.6703	0.3024	9.9612	18.1947	NIB
2014	0.0386	0.1597	0.0859	0.1828	0.0214	0.6681	0.2347	10.0313	19.0748	NIB