



ADDIS ABABA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
MBA PROGRAM

**DETERMINANTS OF PROFITABILITY OF COMMERCIAL
BANKS IN ETHIOPIA**

BY:
MOGES GEMECHU AYANE

JUNE, 2017
ADDIS ABABA, ETHIOPIA

DETERMINANTS OF PROFITABILITY OF COMMERCIAL BANKS IN ETHIOPIA

Advisor

Dr. Ethiopia Legesse

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

June, 2017

Addis Ababa, Ethiopia

Declaration

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

Name Moges Gemechu

Signature: _____

Certification
Addis Ababa University
School of Graduate Studies

This is to certify that the thesis prepared by Moges Gemechu Ayane, entitled: Determinants of Profitability of Commercial Banks in Ethiopia submitted in partial fulfillment of the requirements for the Degree of Masters of Business Administration complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

Signed by the Examining Committee:

Examiner Zinegnaw Abiy (PhD) Signature _____ Date _____

Examiner Abebe Yitayew(PhD) Signature _____ Date_____

Advisor Ethiopia Legesse (PhD) Signature_____ Date_____

Chair of Department or Graduate Program Coordinator

Table of Content

Acknowledgements.....	I
List of abbreviation and acronyms	II
List of Tables	III
List of Figures.....	IV
Abstract	V
CHAPTER ONE	1
INTRODUCTION	1
1.1 Background of the Study	1
1.2 Overview of Banking Sector in Ethiopia	3
1.3 Statement of the Problem	5
1.4 Research Questions	6
1.5 Objective of the study	7
1.5.1 General Objective	7
1.5.2 Specific objectives	7
1.6 Conceptual definition of Terms.....	8
1.7 Significance of the study.....	9
1.8 Scope and Limitation of the Study	9
1.8.1 Scope of the study	9
1.8.2 Limitation of the Study	10
1.9 Organization of the Paper.....	10
CHAPTER TWO	11
REVIEW OF RELATED LITERATURE.....	11
2.1 Theoretical Literature.....	12
2.1.1 Overview of Banking Activity	12
2.1.2. Theories of bank profitability	14
2.2 Empirical Literatures.....	16

2.2.1 Single country studies	17
2.2.2 Panel country studies.....	25
2.2.3 Empirical studies in Ethiopia	31
2.3 Conceptual Framework	33
2.4 Hypothesis of this study	34
CHAPTER THREE	35
RESEARCH DESIGN AND METHODOLOGY	35
3.1 Research Design	35
3.2 Research Approaches	35
3.3 Research Methods Adopted.....	37
3.3.1 Survey design: documentary Analysis.....	37
3.4 Study Population and Sampling techniques.....	38
3.4.1 Study Population	38
3.4.2 Sampling Method.....	38
3.5 Types of Data and Instrument of data collection	38
3.6 Method of Data Analysis.....	39
3.6.1 Model Specification	39
3.7 Descriptions of Variables	41
3.7.1 Dependent Variable.....	41
3.7.2 Independent Variable	42
CHAPTER FOUR	44
EMPIRICAL FINDINGS AND DISCUSSIONS	44
4.1 CLRM assumptions and Diagnostic tests	44
4.2 Model selection criteria	48
4.3 Descriptive Statistics of the data	50
4.4 Correlation analysis among variables	52
4.5 Results of regression analysis.....	53

4.6 Discussion of the study	55
4.7 Summary of Analysis.....	60
CHAPTER FIVE	61
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	61
5.1 Summary of Findings.....	61
5.2 Conclusions	61
5.3 Recommendations.....	63
References	66
Appendix –I: Summary of ratio data	73

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. Ethiopia Legesse, for her 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 her guidance.

I am also grateful, to NBE, bank supervision department staffs, for their assistance by giving audited financial statement reports. It is my pleasure to thank, the financial officers of all sampled banks, for their help in providing me with the necessary data without which I would not have been able to accomplish this study.

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.

To all the above group of individuals, I will forever remain indebted.

List of Abbreviations and Acronyms

AB -	Abay Bank S.C
ADIB-	Addis International Bank S.C
AIB -	Awash International Bank S.C
BANKS-	Bank Size
BIB-	Berhan International bank S.C
BLUE-	Best Linear Unbiased Estimators
BOA -	Bank of Abyssinia S.C
BUIB-	Bunna International Bank S.C
CAPA-	Capital Adequacy
CBE -	Commercial Bank of Ethiopia
CBO -	Cooperative bank of oromia S.C
CLRM-	Classic Linear Regression Model
DB -	Dashen Bank S.C
EXPM –	Expense Management
FEM-	Fixed Effect Model
IINCOME-	Interest Income
LIB-	Lion International Bank
LIQM-	Liquidity Management
NBE -	National Bank of Ethiopia
NIB -	Nib International Bank S.C
NIM -	Net Interest Margin
OIB-	Oromia International Bank
OLS -	Ordinary Least Square
REDV-	Revenue Diversification
REM-	Random Effect Model
ROA -	Return on Assets
ROE -	Return on Equity
UB -	United Bank S.C
WB-	Wegagen bank
ZB -	Zemen bank

List of Tables

Table 1.1 performances of Commercial Banks in Ethiopia.....	4
Table 4.1 Heteroskedasticity Test: ARCH.....	45
Table 4.2 Correlation matrixes of independent variables.....	46
Table 4.3 Testing for serial Correlation LM Test.....	48
Table 4.4 Hausman test for the model.....	49
Table 4.5 Summary of descriptive statistics.....	50
Table 4.6 Correlation matrix of dependent and independent variables.....	53
Table 4.7 Regression Result for factors affecting Ethiopian banks profitability.....	54
Table 4.8 Summary of actual and expected signs of variables on the dependent Variables.....	60

List of Figures

Figure 2.1: Conceptual framework.....	33
Figure 4.1: Normality test for residuals.....	47

Abstract

This study examines the determinants of commercial banks profitability in Ethiopia by using panel data of thirteen sample commercial banks out of seventeen commercial banks currently operated in Ethiopia over the period 2010-2015. Since the data is secondary in nature, the quantitative research approach was used. Besides, the fixed effect model was used. The factors used in this study include bank size, loan, expense management, revenue diversification, liquidity, capital adequacy and interest income and Return on Asset (ROA) were used to measure the bank's profitability. The findings of the study show that bank size, loan, revenue diversification, capital adequacy and interest income have statistically significant and positive relationship with profitability. On the other hand, expense management (operating expense) has a negative and statistically significant relationship with banks' profitability. However, the relationship between liquidity management and profitability is found to be statistically insignificant. The study suggests management bodies of commercial bank should strive to strengthen the identified significant factor banks size, loan, revenue diversification, capital adequacy and interest income as this will enhance the performance of the banks. Moreover, commercial banks need to invest in recent technologies and management skills which minimize operational expense as this will affect positively on their performance.

Key words: profitability, commercial banks, returns on asset

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The profitability of commercial banks gets a great deal of attention in the economic literature considering that banks are an integral part of the economy. It is widely believed that the banking sector should be continued to be profitable in order to play a crucial role for economic growth of a country because of their direct impact on the sustainability of the banks in particular and on the productivity of all the other sectors in the economy in general (Murundo, 2008). Therefore, the study of profitability is important because it provides us information about the health of the economy in any given year, the revenue generating capacity of the organization and a key determinant for the sustainability of a given company.

For a business entity in order to continue to prosper there is a need for its earnings to be relatively stable for its expansion and growth over time. In addition, consistently incremental changes in profitability are an important contributor to economic progress via the influence profits have on the investment and savings decisions of companies because of a rise in profits improves the cash flow position of companies and offers greater flexibility in the source of finance for corporate investment through retained earnings (Flamini, 2009). The growth and survival of a business organization mostly depend upon the profit which an organization is able to earn (Cooper, 2009). In general, the profitability of the organization will definitely contribute to the economic development of the country as all by providing additional employment opportunity to the society, tax revenue to government, it will contribute to the income of the investors by having a higher dividend and thereby improve the standard of living of the people (Cooper, 2009)

A number of different studies have examined determinants of bank profitability in an effort to isolate the factors that account for differences in profitability among each bank. Some studies have linked bank earnings and various aspects of bank operating performance to profitability of commercial bank. Set of studies focused on the relationship between bank earnings performance and balance sheet structure and profitability of the bank on the other hand different literature

examined the impact of regulatory and macroeconomic (external) factors on overall bank profitability. The main conclusion emerging from past studies is that internal (bank specific) factors which related to the management decisions of a bank explain a large proportion of overall banks profitability; nevertheless external factors have also had an impact on bank profitability.

The determinants of commercial banks profitability are empirically well explored although the definition of profitability varies among each study. Disregarding the profitability measures, most of the banking studies conducted before noticed that both the internal environment of the organization and external environment are important drivers of high profitability .Based on the study conducted before internal factors are the main determinants of banks profitability. Therefore in this study, the drivers that would be considered are namely internal drivers or factors of Profitability.

Internal factors of bank performance or profitability can be defined as factors that are influenced by bank management decisions. Such management effects will definitely affect the operating results of commercial banks. Although a quality management leads to a good bank performance, it is difficult, to assess management quality directly. In fact, it is implicitly assumed that management quality will be reflected in the operating performance. As such, it is not uncommon to examine a bank's performance in terms of those financial variables found in financial statements, such as the balance sheet and income statement Krakah and Ameyaw (2010).

External determinants of bank profitability are factors that are beyond the control of a bank's management decision. They represent events outside the influence of the bank. However, the management can anticipate changes in the external environment and try to position the institution to take advantage of anticipated developments. The two major components of the external determinants are macroeconomic factors and financial structure factors Krakah and Ameyaw (2010).

Several studies have shown that bank profitability is influenced by bank-specific and macro-economic factors (Flamini et al. 2009; Athanasoglou et al. 2008; Trujillo-Ponce, 2012). However, these studies were based on data from different other countries and their findings may not be applicable to the Ethiopian banking sector. In the context of the above discussions, the main purpose of this study is to investigate the determinants of commercial banks profitability in Ethiopia.

1.2 Overview of Banking Sector in Ethiopia

Due to 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. Following the agreement in 1905, the first bank called Bank of Abyssinia was inaugurated in February 16, 1906 by the Emperor. Thus by 1931 Bank of Abyssinia was legally replaced by Bank of Ethiopia shortly after Emperor Haile Selassie came to power and took over the commercial activities of the Bank of Abyssinia and was authorized to issue notes and coins.

The Ethiopian Monetary and Banking law that came into force in 1963 separated the role and responsibility of commercial and central banking creating National Bank of Ethiopia and give birth to commercial Bank of Ethiopia. The first privately owned bank, Addis Ababa Bank Share Company, was established on Ethiopians initiative and started operation in 1964 with a total capital of 2 million. Following the declaration of socialism system in 1974 the government extended its control over the whole economy and nationalized all large corporations. Accordingly, the three private owned banks, Addis Ababa Bank, Banco di Roma and Banco di Napoli Merged together in 1976 to form the second largest Bank in Ethiopia called Addis Bank. Consequently, Addis Bank and Commercial Bank of Ethiopia S.C. were merged together to form the sole commercial bank in the country till the recent establishment of private commercial banks in 1994. There was also the Saving and Mortgage Corporation of Ethiopia whose aims and duties were to accept savings and trust deposits account from those who have surplus and provide loans for the construction, repair and improvement of residential houses, commercial and industrial buildings and carry out all activities related to mortgage operations, until its changed to the name, Construction and Business Bank.

Subsequently due to the demise of the Dergue regime in 1991 from the power, EPRDF declared a liberal economy system in the country. Following this, the first private bank, Awash International Bank was established in 1994 and currently there are 16 private and 1 government-owned commercial banks operating in Ethiopia. These banks include; Abay Bank S.C (est. 2010), Addis International bank S.C(est. 2011), Awash International Bank(est. 1994), Bank of Abyssinia(est. 1996), Berhan International Bank(est. 2010), Bunna International Bank(est. 2009), Commercial Bank of Ethiopia(est. 1963), Cooperative Bank of Oromia(est. 2005),

Dashen Bank(est. 1996), Debub Global Bank(est. 2012), Enat Bank(est. 2013), Lion International Bank(est. 2006), Nib International Bank(est. 1999), Oromia International Bank(est. 2008), United Bank(est. 1998), Wegagaen Bank(est. 1997), and Zemen Bank(est. 2009) (Wikipedia.org, 2017).

According to table below Commercial bank of Ethiopia are the most profitable banks in Ethiopia in, 2016 which is followed by Awash international bank and Dashen bank. On the other hand Debub global bank, Enat bank and Addis international banks are the least profitable banks in Ethiopia.

Dashen bank have higher total asset than Awash international bank but less profitable. In addition Bank of Abyssinia bank have higher total asset than Wegagen bank but less profitable than Wegagen.

Table 1.1 Performance of Commercial banks Ethiopia in 2016 (In Million Birr)

Rank	BANK	Est. Year	ASSET	DEPOSIT	CAPITAL	NET INCOME
1	CBE	1963	303,591	240,695	12,903	8,747
2	DB	1996	28,576.43	22,758.50	3,357.83	727.05
3	AIB	1994	29,609.60	22,832.03	3,816	743.77
4	BOA	1996	16,828.06	13,634.96	2,124.42	360.57
5	WB	1997	16,189.16	11,078.55	2,805.77	375.62
6	NIB	1999	15,830.38	12,423.02	2,518	390
7	CBO	2005	10,626	8,402	1,221	34.9
8	UB	1998	17,269.87	13,037.64	2,072.49	339.02
9	ZB	2009	7,374	5,487	1,002.02	203
10	OIB	2008	11,282	9,348	1,318	222
11	LIB	2006	8,119.23	6,333.56	1,069.86	196.16
12	BUIB	2009	6,820.96	5,384.60	960.55	187.46
13	AB	2010	6,188.63	4,832.58	941.97	147.01
14	BIB	2009	7,169.30	5,296.52	1,060.24	265.79
15	ADIB	2011	2,462.18	1,562.54	636.45	82.41
16	EB	2013	3,248.19	2,389.27	666.49	79
17	DGB	2012	1,295.37	871.76	322.14	51.69

Source NBE annual report 2015/16

1.3 Statement of the Problem

The Economy of Ethiopia grew at increasing rate for the last decade and the country enables to register a double digit economy growth and it is expected to continue for the future. In this regard, all financial institution in generally and commercial banks in particularly plays a great contribution to facilitate the registered economy growth in the last decades and the government has tried the banking sector to grow and to facilitate the economy growth of the country. As a result examining the performance of Ethiopian commercial banks become very crucial for their profitable survival.

Identifying the major factor that determine profitability of the bank is vital to banking industry in particular and for smooth economic growth in general (Sustrosuwito and Suzuki, 2011). Different studies identified both internal (bank specific) and external (macroeconomic) factor that determine profitability of commercial banks of different countries at different time by using Panel Ordinary Least Square Model. Even though there a lot of studies conducted in the area of bank profitability, they have been debatable for many years because determinants of profit are dynamic through time to time and differ with the nature of the firm from place to place (Flamini et al. 2009).

Different studies conducted at different time mainly focused on total asset of the bank, deposit to total asset ratio, ratio of total loan and advance to asset, operational efficiency, capital adequacy, non interest income and other internal and external factors that affect banks profitability. According to study conducted by Habtamu (2012) shows that bank size has positive significant effect on banks profitability but study conducted by Saira et al. (2011) shows that bank size and its profitability are negatively associated. Study by Ani et al. (2012) shows deposits to total asset ratio have positive significant effect on bank performance however, study conducted by Kunt and Huizinga (1999) found that there is a negative relationship between deposit and profitability. Study made by Sehrish Gut et al. (2011) shows that total loan and advance affects bank profitability positively, but study conducted by Wood (2003) found that there is a negative relationship between loan and bank profitability. Study by Obamuyi (2013) found that operating expense affects banks profitability negatively but study by Necear (2003) shows positive relationship between bank expense and its profitability. Although study made by Belayneh (2011) found a positive and direct relationship between capital strength and profitability of banks

but the study by Hoffmann (2011) found that there is a negative relationship between the capital asset ratio and banks profitability. Study by Wanzerried (2011) found a significant positive association between income diversification and bank performance but study by Williams (2007) shows negative relationship between income diversification and bank profitability. Therefore, those literatures by themselves provide contradictory conclusions among each other for they are based on different models and methodologies.

Although, a numbers of earlier studies have made to add their own contribution to the theory of profitability and stated their own policy implication, they were inclined towards to the developed economic countries, and less developed countries including Ethiopia received little attention in various literatures on the issue of profitability. Consequently, the conclusion and finding of the study conducted in one country may not serve to another. Therefore, in this study the researcher will examine the variables that determine the profitability of Ethiopian commercial banks.

In the context of Ethiopia, although there are studies that have been conducted by (Belayneh, 2011) and (Habtamu, 2012) about determinants of commercial banks profitability, they have failed to take in to account important factors like expense management and ratio of interest income to asset, excluded government commercial banks and few private banks established recently from the study and did not use recent data that how banks became profitable and sustain their profit strategies varies from time to time. Hence this study seeks to fill the gap by including new variables and government and other new private banks that were not included in previous studies by using most recent possible data. Therefore the main purpose of the study is to identify the determinants of Ethiopian commercial banks profitability for the fiscal year from 2010 to 2015.

1.4. Research Questions

This study will answer question of bank management how to adequately sustain or increase profit of Commercial bank of Ethiopia. As a result, the study will answer the following research Questions;

1. What is the effect of bank size on profitability of commercial banks?
2. What is the relationship between loans and profitability of commercial banks?

3. How does expense management affects profitability of commercial banks?
4. What is the effect of revenue diversification on profitability of commercial banks?
5. How does Liquidity management affect profitability of commercial banks?
6. What is the effect of bank capital adequacy on profitability of commercial banks?
7. What is the effect of interest income on profitability of commercial banks?

1.5 Objective of the study

1.5.1 General Objective

In the context of the problems highlighted above, the main objective of the study is to investigate the determinants of commercial banks profitability in Ethiopia.

1.5.2 Specific objectives

The Specific objectives of the study focused on individual factor that determine profitability of the commercial banks stated as follows;

1. To determine the effect of Bank size on profitability of commercial banks.
2. To identify the relationship between loan and profitability of commercial banks.
3. To explore the significance of expense management on profitability of Commercial Banks.
4. To analyze the relationship between Revenue diversification and profitability of commercial banks
5. To assess the significance of liquidity management on commercial banks profitability
6. To analyze the impact of capital adequacy on commercial banks profitability
7. To assess the effect of interest income on profitability of commercial banks.

1.6 Conceptual definition of Terms

- I. **Banks:** financial institutions that accept deposits from different individuals and institutions and make loans to the others. Commercial Banks are financial intermediaries that raise funds primarily by collecting deposits then give loan to different customers.
- II. **Return on Assets (ROA):** It is a measure of profitability that estimated as a ratio of net income to total assets of the banks. It shows the efficiency of bank management in generating net income by using the bank resources. ROA is a ratio calculated by dividing the net income to total assets. ROA have been used in most of the studies for the measurement the profitability of the banks (Khrawish, 2011)
- III. **Return on equity (ROE):** it is the ratio of total net income to total equity (Fraker, 2006) and it measures the rate of return on the ownership interest (shareholders' equity) of the common stock owners. It measures a firm's efficiency at generating profits from every unit of shareholders' equity. ROE shows how well a company uses investment funds to generate earnings growth.
- IV. **Net Interest Margin (NIM):** It is the difference between interest income and interest expenses as a percentage of total assets. NIM is defined as the net interest income divided by total assets. NIM is a measure of the difference between the interest income generated by banks and the amount of interest paid out to their depositor relative to the amount of their assets. NIM is focused on the profit earned on interest activities (Berger, 1995, Barajas et al., 1999 and Naceur and Goaid, 2001).
- V. **Size of bank:** Size of the bank shows the economies and diseconomies of scale. It is used to capture the fact that larger banks are better placed than smaller banks in harnessing economies of scale in transactions to the plain effect that they will tend to enjoy a higher level of profits. The physical capital (bank buildings, computers, and other equipment) owned by the banks are their assets.
- VI. **Operating income:** is the income that generated from a bank's ongoing operations. Most of a bank's operating income is generated by interest on its assets, particularly from loans. Interest income fluctuates with the level of interest rates, and so its percentage of operating income is highest when interest rates are at peak levels.
- VII. **Revenue diversification:** is income generated by service charges, which generate fees or trading profits for the bank. It measured by non interest income divided by total asset.

- VIII. **Operating expenses:** are the expenses incurred in conducting the bank's ongoing operations. An important component of a bank's operating expenses is the interest payments that it must make on its liabilities, particularly on its deposits.
- IX. **Noninterest expenses:** are expenses that include the costs of running a banking business: salaries for tellers and officers, rent for bank buildings, purchases of equipment, servicing costs of equipment such as computers and provisions for loan losses.

1.7 Significance of the study

The significance of the research will include the following:

First, the study will draw some conclusions and identifies the major factors affecting bank profitability significantly. Thus, it will give signal to the management of the banks and policy makers to focus on the main determinants of commercial banks profitability to achieve organizational goals and to take remedial action.

Second, the study will help other researchers as a source of reference and as a stepping stone for those who want to make further study on the area of profitability afterwards.

Third, it will give all stake holders in the area the opportunity to gain deep knowledge about the relationship between management controllable factors and banks profitability.

Finally, This research does have significant role to play in shedding light on how to better understand what determines financial institution particularly Commercial banks profitability (financial performance) in Ethiopia.

1.8 Scope and Limitation of the Study

1.8.1 Scope of the study

The scope of study is restricted to determinants of commercial banks profitability that are found in Ethiopia by using six years (2010-2015G.C) audited financial statements of each commercial banks in order to include more recently established new banks. The study comprises all

commercial banks which started their operation before 2010. As a result, it includes the one large government owned commercial bank namely, CBE and the other twelve private commercial banks, AIB, BOA, BIB, BUIB, CBO, DB, LIB, NIB, OIB, UB WB and ZB.

The study used one dependent variable Return on asset (ROA) and seven independent variables i.e. bank size (BANKS), Loan (LOAN), expense management (EXPM), revenue diversification (REDV), liquidity management (LIQM), capital adequacy (CAPA) and interest income (IINCOME). Therefore, this study is limited to 13 commercial banks from period 2010 to 2015 about bank specific factors affecting banks profitability.

1.8.2 Limitation of the Study

The determinants considered in the study may not be the only factors influencing profitability. There may other factors driving profitability as well and if were considered may have influence the result of the study.

In addition, Secondary data for six years (2010-2015) collected from sampled thirteen Ethiopian commercial banks. And the analysis and its derived conclusions based on the secondary data sources (i.e. mainly on published annual reports).

1.9 Organization of the Paper

This study consists of five chapters with different sections and sub-sections and it is structured as follows. Chapter one presents the introduction for the main part of the study, statement of the problem, research question, and objective of the study, 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. Chapter four provides data analysis and presentation of econometric model outcomes. Finally, Chapter five presents summary, conclusion and recommendation with further research direction.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

The study of profitability is important because it provides us information about the health of the bank in any given year and profits are a key determinant of growth and employment in the medium-term. Changes in profitability are an important contributor to economic progress via the influence profits have on the investment and savings decisions of companies because an increase in profits improves the cash flow position of companies and offers greater flexibility in the source of finance for corporate investment through retained earnings. Easier access to finance for an organization facilitates greater investment which boosts productivity, productive capacity, competitiveness and employment.

The growth and survival of a business organization mostly depend upon the profit which an organization is able to earn. It is true that when Profitability of the organization increases the value of shareholders may increase to considerable extent. In generally, the profitability of the organization will definitely contribute to the economic development of the country as all by providing additional employment opportunity to the society, tax revenue to government, it will contribute to the income of the investors by having a higher dividend and thereby improve the standard living of the people (Cooper, 2009)

For a business entity whether public or privately owned In order to continue to prosper, there is a need for its earnings to be relatively stable for its expansion and growth over time. In addition to its level of earnings, the business organization must ensure that right technology is pursued so as to achieve organizational objectives (Burns & Mitchell, 1946 and Aremu & Gbadeyan, 2011).

According to some previous studies conducted about determinants of commercial banks profitability, there are internal (bank specific) and external (macroeconomic) factors that affects banks profitability and hence renewing, recognizing and understanding the factors that determine bank profitability is essential in order to vouch results and analyses. Hence, this chapter serves as background for this study by describing concepts related to financial intermediation and factors that could affects banks profitability. In light of idea mentioned above, the purpose of this chapter is to review the literatures related to determinants of banks profitability. The review has

three sections. Section 2.1 presents a review of the theoretical aspects related to determinants of bank profitability. This is followed by the review of the previous studies conducted in relation to determinants of banks profitability in section 2.2 and section 2.3 the finally section presents conceptually framework.

2.1 Theoretical Literature

This section reviews the basic theoretical issues related to banks and determinants of bank profitability. Hence, section 2.1.1 presents overview of banking activity and section 2.1.2 presents the theories related to determinant of banks profitability.

2.1.1 Overview of Banking Activity

Banks became profitable by charging an interest rate on their holdings of securities and loans that is higher than the expenses on their liabilities. In general terms, banks gain profits by selling liabilities with one set of characteristics (a particular combination of liquidity, risk, size and return) and using the proceeds to buy assets with a different set of characteristics and the process is often referred to as asset transformation. A savings deposit held by one person can provide the funds that enable the bank to make a mortgage loan to another person. The bank has transformed the savings deposit (an asset held by the depositor) into a mortgage loan (an asset held by the bank). Moreover, the process of asset transformation is described that the bank “borrows short and lends long” because it makes long-term loans and funds them by issuing short-dated deposits. Bank manages its all total assets and liabilities in order to earn the highest possible profits.

The bank manager has four primary concerns. The first is to make sure that the bank has enough ready cash to pay its depositors when there is high deposit withdrawal, that is, when deposits are lost because depositors make withdrawals and demand payment. To keep enough cash on hand, the bank must engage in liquidity management, the acquisition of sufficiently liquid assets on hand to meet the bank’s obligations to depositors. Second, the bank manager must pursue an acceptably low level of risk by acquiring assets that have a low rate of default and by diversifying asset holdings (asset management). The third concern is to acquire deposit at lower cost (liability management). Finally, the bank manager must decide the amount of capital the

bank should maintain and then acquire the needed capital (capital adequacy management). Banks obtain funds by borrowing and issuing other liabilities such as deposits and these deposits include Checkable deposits, savings deposits and fixed time deposits (deposits with fixed terms to maturity) and they use these funds to acquire assets such as securities and loans.

Banks make profits by charging an interest rate on their holdings of securities and loans that is higher than the expenses on their liabilities. A bank uses the funds that it has acquired by issuing liabilities to purchase income earning assets. Bank assets are referred to as uses of funds and the interest payments earned on them are what enable banks to become profitably. Bank capital is a cushion against a drop in the value of its assets, which could force the bank into insolvency (having more liabilities in excess of assets, meaning that the bank can be forced into liquidation). Banks make their profits primarily by issuing loans and securities. A loan is a liability for the individual or corporation receiving that loan, but an asset for a bank, because it provides income to the bank. Loans are typically less liquid than other assets, because they cannot be turned into cash until the loan maturity day of the loan. On the other hand Loans have a higher probability of default than other assets because of their lack of liquidity and higher default risk, the bank earns its highest return on loans.

The largest categories of loans for commercial banks are commercial and industrial loans made to different businesses. Commercial banks also make consumer loans and lend to each other. To maximize its profits, a bank must simultaneously seek the highest returns possible on loans and securities reduce level of risk and make adequate provisions for liquidity by holding liquid assets. Banks have to make decisions about the amount of capital they need to hold for three reasons. First, high amount of bank capital helps to prevent bank failure, a situation in which the bank cannot satisfy its obligations to pay its depositors and other creditors and so goes out of business. Second, the amount of capital held by the bank affects returns for the owners (equity holders) of the bank. Finally, a minimum amount of bank capital requirements is required by regulatory authorities (Schooner & Talyor, 2010 cited in van Ommeren, 2011)

Net income gives us an idea of how well a bank is doing however it suffers from one major drawback that it does not adjust for the bank's size, thus making it hard to compare how well one

bank is doing relative to other banks. A basic measure of bank profitability that corrects for the size of the bank is the return on assets (ROA) which measured by dividing the total net income of the bank by the total amount of its assets. ROA is a useful measure of how well a bank manager is doing on the job because it indicates how well banks resources are being utilized to generate profits. The other measure of profitability is return on equity (ROE) which concerned about how much the bank is earning on their equity investment, an amount that is measured by the, the net income per equity capital (Guru et al., 2009).

Another commonly watched measure of bank profitability is called the net interest margin (NIM), the difference between income generated from interest and interest expenses as a percentage of total assets. If a bank manager has done a good job of its asset and liability management such that the bank earns substantial income on its assets and has low costs on its liabilities, If the bank is able to raise funds with liabilities that have low interest costs and is able to acquire assets with high interest income, the net interest margin will be high, and the bank is likely to be highly profitable banks. If the interest cost of its liabilities rises relative to the interest earned on its assets, the net interest margin will fall, and bank profitability will suffer.

2.1.2. Theories of bank profitability

The studies about the profitability of banks started in the late 1970s/early 1980s with the application of two industrial organizations models: the Market Power theory and Efficiency Structure theories (Athanasoglou et al. 2006). In addition, later the theory of balanced portfolio added its own greater insight into the study of bank profitability (Atemnkeng & Joshph, 2006). Thus, each of the aforementioned theories and others theory related to bank profitability and its determinants are discussed in detail in this particular section as follows.

The Efficiency Theory

The efficiency hypothesis theory posits that banks earn high profits because they are more efficient in using resource than others. There are two distinct approaches within the efficiency theory; the X-efficiency and Scale-efficiency hypothesis. According to the X-efficiency approach theory, the more efficient banks are more profitable than others because of their lower costs ratio and such firms tend to gain larger market shares, which may manifest in higher levels

on market concentration, but without any causal relationship from concentration to profitability (Athanasoglou et al. 2006). The scale–efficiency approach emphasizes economies of scale rather than differences in management or production technology efficiency. Larger firms can obtain lower unit cost and higher profits through economies of scale which enables them to acquire higher market shares, which may manifest in higher concentration and then profitability (Athanasoglou et al. 2006).

The Market Power Theories

According to study conducted by Tregenna (2009) found that applied in banking the market power hypothesis posits that the performance of bank is influenced by the market structure of the industry. There are two distinct approaches of the market power theory; the Structure-Conduct-Performance (SCP) theory and the Relative Market Power (RMP) hypotheses theory. According to the SCP approach, the level of concentration in the banking market gives rise to potential market power by banks, which may increase profitability of the banks. Banks operated in more concentrated markets are most likely to make “abnormal profits” by their capability to lower deposits rates and to charge higher loan rates as a results of collusive (explicit or tacit) or monopolistic reasons, than firms operating in less concentrated markets, irrespective of their efficiency (Tregenna, 2009). On the other hand unlike SCP, the RMP hypothesis posits that bank profitability are influenced by market share of the bank and it assumes that only large banks with differentiated products can influence prices and increase profits and they are able to exercise market power and earn non-competitive profits (Tregenna, 2009).

The Balanced Portfolio Theory

The balanced portfolio theory approach is the most relevant and plays an important role in bank profitability (Olweny & Shipho, 2011). According to the Portfolio balance model asset diversification, the optimum holding of each asset in a wealth holder’s portfolio is a function of policy decisions determined by a number of factors such as the rates of return on all assets held in the portfolio, a vector of risks associated with the ownership of each financial assets and the total size of the portfolio. It implies portfolio diversification and the desired portfolio composition of commercial banks are results of decisions taken by the bank management. Further, the ability of the banks to obtain maximum profits depends on the feasible set of assets

and liabilities determined by the management and the unit costs incurred by the bank for producing each component of assets (Atemnkeng & Joseph, 2006).

Risk-return trade off theory, the signaling and bankruptcy cost hypotheses

According to this theory the balance sheet structure of the banks influences its profitability; in this context, the equity-to-asset ratio is an important balance sheet ratio that received much attention. For this ratio, different theoretical explanations assume different signs of the relationship between equity-to-asset ratios with profitability. Financing theory suggest that increasing risks of return, by increasing leverage and thus lowering the equity-to-asset ratio (increasing leverage), leads to a higher expected return as entities will only take on more risks when expected returns will increase; otherwise, increasing risks have no benefits and this theoretical explanation is known as the risk-return trade off (Van Ommeren, 2011).

There are also theoretical explanations for the opposite relationship that a higher equity-to-asset ratio has a positive effect on profitability of the banks. These explanations are based on the signaling and bankruptcy cost hypotheses. The first hypothesis states that a higher equity to asset ratio is a positive signal to the market value of a bank (Berger, 1995). Less profitable banks cannot achieve such a signal since this will further deteriorate their earnings. In this way a lower leverage, indicates that banks perform better than their competitors who cannot raise their equity without further deteriorating the profitability and the latter hypothesis suggests that in a case where bankruptcy cost are unexpected high a bank hold more equity to avoid period of distress (Berger, 1995).

2.2. Empirical Literatures

This section of the research paper provides the overview of the previous studies related to the determinants of commercial banks profitability and various ways that profitability was examined. There are banks specific and macroeconomic variable that affects banks profitability and the main conclusion emerging from these studies is that internal factors explain a large proportion of banks profitability; nevertheless external factors have also had an impact on their performance. The dependant variables that have been mostly used in these different studies are like return on assets (ROA), return on equity (ROE) and net interest margin (NIM) and all the internal and external factors have been used as independent variables.

In order to make this study more meaningful some references of previous studies from both panel countries and single countries are presented here. Determinants of bank profitability studies conducted in single country are reviewed in section 2.2.1. This is followed by a review of determinants of bank profitability studies carried out on a panel of countries in section 2.2.2. Finally studies conducted in Ethiopia are reviewed in section 2.2.3

2.2.1 Single country studies

This sub section presents some of the single country studies reviewed by the different researcher Chronologically

Usman (2014) attempt to identify banks specific factors affecting profitability of commercial banks in Pakistan using panel data that covers period of 4 years from 2009 to 2012 by using descriptive analysis, Pearson correlation and regression analysis. The study used cost to income ratio, liquidity, capital adequacy, deposits ratio and bank size as independent variables that may affects bank profitability and return on asset as a dependent variable. According to the finding of the study cost efficiency, capital adequacy, deposits to asset ratio and bank size are a major internal factor that affects banks profitability.

According to study conducted by Susan (2014) using balanced panel data of top six commercial banks in Kenya for the period of 2008-2013. The estimated independent variables such as bank size, capital to asset ratio, ownership, loan and advance, operational efficiency and income diversification impacts on profitability of commercial banks using return on assets (ROA) as a dependent variable. Using descriptive and correlation analysis the result of the study shows that bank size, capital strength of the bank, ownership, operating expense, loan and non interest income are the major significant factors that determine the profitability of commercial banks.

Guru et al. (2002) attempts to identify, the determinant of commercial banks profitability in order to provide practical guides for improved performance of these institutions. The study was based on a sample of seventeen Malaysian commercial banks over the period of 1986-1995. The profitability determinants were divided in two main categories, namely the internal determinants (liquidity, capital adequacy and expenses management) and the external determinants (ownership, firm size and external economic conditions). The findings of this study revealed that efficient expenses management was one of the most significant factors in explaining high bank

profitability. Among the macro indicators, high interest ratio was associated with low bank profitability and inflation was found to have a positive effect on bank performance

The objective of the study made by Madishetti et al. (2013) was to analyze the profitability determinants of Tanzania commercial banks for the period of 2006-2012. Internal determinants use the variables like liquidity risk, credit risk, operating efficiency, total assets and capital adequacy on other hand external determinants use the variables GDP growth rate and inflation rate. The study found that internal variables are the major determinants of commercial bank's profitability whereas external factors do not influence the profitability of commercial banks.

Study conducted by Sufian and Shah (2009) examines the profitability of 37 Bangladeshi commercial banks between the year 1997 and 2004 by using unbalanced bank level panel data. They found that bank specific characteristics, like loans intensity, credit risk, and cost have positive and significant impacts on bank profitability, while non-interest income shows negative relationship with bank profitability. The empirical findings of the study suggest that banks size has a negative impact on profitability. 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.

Abuzar (2013) investigated the determinants of commercial banks profitability of Islamic banks operating in Sudan. The study found that only banks internal factors have the substantial impact on the profitability of the commercial banks that cost, liquidity and the size of the banks have the positive relationship with the bank profitability while, Macroeconomic or external factors have no substantial impact on profitability of the banks.

Recent studies conducted by Abdelkarim (2013) investigated the impacts of managerial factors on commercial banks profitability by using data of thirteen Jordan commercial banks over the period of 2005 to 2011. The paper used the Pooled Ordinary Least Square method to investigate the impact of assets, loans, liquidity, cost efficiency, credit risk and capital adequacy on major profitability indicator i.e., return on asset (ROA). The empirical results have found strong evidence that only cost income ratio determine the profitability of commercial banks in Jordan and the other variable did not show any statistically effects on profitability of the banks.

Javaid et al. (2011) attempt to identify internal factors that influence bank profitability of top 10 banks' found in Pakistan over the period 2004 to 2008 by using the pooled ordinary least square (POLS) method to investigate the impact of total assets of the bank, loans and advance, equity and deposits on one of the major profitability indicator of banks which is return on asset (ROA). The empirical results of the study found strong evidence that these variables have influence on profitability of the banks. However, the results show that higher total assets may not necessarily lead to higher profitability due to diseconomies of scales. In addition, higher loans contribute towards profitability but their impact is explaining a significant part of the variation in bank profitability. High Jordanian bank profitability tends to be associated with well-capitalized banks, high lending activities, low credit risk, and the cost efficiency management. Moreover, the finding of the study also shows that the estimated effect of bank size did not support the significant scale economies for Jordanian banks. Due to the fact that some of the differential slope coefficients are statistically significant, they conclude that the estimation results indicate that individual effects on the profitability are present.

Scott and Arias (2011) developed an appropriate econometric model to identify the primary determinants of profitability of the top five bank holding companies in the United States could be examined and understood. The econometric model was based on internal aspects of the banking organizations as they relate to their return on assets and external aspects of the environment in which they compete as measured by growth in GDP was developed based on guidance provided by economists and industry experts to determine the impact of the external national economy of these five leading banks according to their size as measured by total assets of the banks. The results of study show that profitability determinants for the banking industry include positive relationship between the return on equity and capital to asset ratio as well as the annual percentage changes in the external per capita income.

Gull et al.(2011) examined the relationship between bank-specific and macro-economic factor characteristics over commercial banks profitability of top fifteen Pakistani commercial banks over the period 2005 to 2009 by using the pooled ordinary least square (POLS) method to investigate the impact of total assets, total loans and advance, equity, deposits, economic growth, inflation and market capitalization on major profitability indicators that is, return on asset

(ROA), return on equity (ROE), return on capital employed (ROCE) and net interest margin (NIM) separately. The empirical results showed that both internal and external factors have a strong influence on the profitability.

Imad et al.(2011) studied a balanced panel dataset of top 10 Jordanian banks for the purpose of investigating the nature of the relationship between the profitability of banks and the characteristics of internal and external factors over the period 2001 to 2010 by using two measures of bank's profitability: the rate of return on assets (ROA) and the rate of return on equity (ROE), the finding of the study show that the Jordanian bank's characteristics with high amount of capital and large overheads cost. In addition, the study also noted that other determinants such as total loans and advance has positive and bank size has negative impact on profitability of the Jordan commercial banks.

Naceur and Goaied (2001) Examined how the impact of banks' characteristics, financial structure and macroeconomic indicators affects commercial banks profitability of Tunisian banking industry from 1980 to 2000. Individual bank characteristics explain a significant part of the within-country variation in bank interest margins and net profitability. High net interest margin and profitability tend to be associated with banks that hold a relatively high amount of capital and reserve, and large overheads. Bank size is found to impact negatively on profitability which implies that Tunisian banks are operating above their optimum level.

Syafri (2012) Under took study to analyze the determinants of commercial banks profitability of Indonesia banks listed in the stock exchange for the period of 2002 to 2011 using pooling data from different commercial banks. The study applied the pooling data regression model in which return on assets (ROA) is dependant variable and internal and external determinants have been used as independent variables. The study conclude that loan to total assets ratio, total equity to total assets ratio have positive significant effects on commercial banks profitability on the other hand, bank size and cost to income ratio have negative effect and economic growth and non interest income to total assets have no effect on banks profitability.

Study made by Ani, W.U et al. (2012) investigated the determinants of profitability of commercial banks in Nigeria for the period of ten years from 2001 to 2010 including the observation of 147 banks by using Pooled ordinary least square method to estimate the coefficient. The study found that bank size does not increase the profitability of any commercial banks in Nigeria and greater capital-asset ratio increases the profitability of commercial banks.

Study made by Dietrich and Wanzenried (2011) with objective of investigating the factors that influence Profitability of commercial banks in Swaziland over the period of 1999 to 2009 by taking data from 453 banks with 1919 observation. The study used ROA as dependent variables and considered explanatory variables in their analysis. The study found there is a positive and significant relationship between bank profitability (measured in terms of ROA) and equity to total assets ratio, whereas bank size and cost to income ratio were found to be negatively and significantly associated with commercial banks profitability.

Sufian and Chong (2008) empirically examine the determinants of Philippines commercial banks profitability during the period 1990 to 2005 for sixteen years by using ROA as dependent variable and bank size, credit risk, operating expense, capital strength and non interest income as independent variable. The empirical finding of the study suggested that all the bank-specific determinant variables had a statistically significantly impact on bank profitability. In addition, the findings of the study also suggested that bank size, credit risk, and expense preference behavior are negatively related to banks profitability, while non-interest income and capitalization had a positive significant impact on commercial banks profitability.

Study made by Sehrish (2011) with the objective of investigating the relationship between the bank specific characteristics and the profitability of the banks by using the data of top fifteen commercial banks operating in the economy of Pakistan for the period of 2005-2009. The study applies the Polled Ordinary Least Square method to look into the hit of total assets, loans and advance, equity to asset ratio, total deposits, economic growth, inflation and market capitalization on major profitability blinkers like return on assets (ROA) ,return on equity (ROE), return on capital employed (ROCE) and net interest margin (NIM) one by one. The study found that that both the internal and external factors have a solid influence on the commercial banks profitability.

Hoffmann (2011) tried out the determinants of profitability of the banks operating in US for the period of 1995-2007 for thirteen years. The study investigated the internal and external factors affecting the profitability of banks in US economy. The study suggest that there is a significant negative relationship between the capital asset ratio and profitability of banks which affirms believe that banks are working most carefully and dismissing potentially profitable trading chances. The cost advantages due to the bank size do not impact on the profitability of the banking industry of US.

The study made by Alexiou and Sofoklis (2009) with objective of identifying the crucial factors that affects the profitability of the six major Greek commercial banks by using balanced Panel data analysis over the period 2000- 2007. The study uses ROA and ROE as 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. The study reveal that Macroeconomic factors such as inflation and private Consumption appear to play a significant role in shaping the performance of banking institutions. In addition, bank-specific variables, such as capital or measures of cost-efficiency, also play a critical role in determining bank profitability.

Alpera and Anbar (2011) examined the performance of commercial banks profitability of Turkey over the period of 2002-2010 for nine years by using the internal and external factors as dependent variable and ROA as dependent variable. The study shows that non interest income and bank size have the positive impact on the bank profitability and on the side of the macroeconomic or external factors only the real interest rates impact on the profitability of the commercial banks positively.

The goal of the study conducted by Vong and chan(2006) was to analyze the impact of internal and external factors on the profitability of Macao banking industry for the period of 15 years. The study found that high bank capitalization leads to the high profitability and size of the bank increases the profitability of the banks which means banks are enjoying the benefit of economies of scale. On the other hand loan loss provision negatively affects Macao commercial banks profitability.

Eljelly(2013) study with the goal of, to explore the determinants of profitability of Islamic banks found in Sudan, one of the few countries that have total Islamic economic and banking systems by using a sample of Sudanese banks. The paper found that only the internal factors have a significant impact on commercial banks' profitability, as measured by return on assets (ROA), return on equity (ROE), and net financing margin (MARG). Moreover, cost to income ratio, liquidity risk and size of the bank are found to have a significant positive effect on profitability of the banks. However, external macroeconomic factors are classified as redundant and they have no significant effects on profitability of Sudan banks.

Kosmidou and Pasiours (2007) examined the factors that affect the profitability of UK domestic commercial banks from the period 1995-2002 by using bank-specific characteristics, macroeconomic conditions and financial market structure. Their finding of the study shows that capital strength is the most significant factor that positively affects UK owned commercial banks' profitability. Specifically, their study shows that cost to income ratio and bank size have a significant and positive impact on both measures of profitability ROA and ROE of UK's banks. Moreover; factors such as expense management and bank size are also the factors that have influence on the profitability of domestic UK commercial banks. Their study also indicates that liquidity management has a positive effect on ROA.

The objective study made by Bintawim (2011) was to provide performance analysis comparison of Saudi banks and to examine the impact of banks' internal characteristics indicators on financial performance. A total of eleven Saudi banks are financially analyzed between 2005 and 2009 for five years by using ratio analysis and panel data regression to test the research hypothesis. The findings of the study show that large banks performance has reached the mature growth unlike medium-size banks as they are growing to compete against large banks. Meanwhile, small-size banks are facing some difficulties to achieve a better growth. The results of the study indicate that all Saudi banks are doing well to maintain the stability of banking sector. In addition, regression results show that banks' size has a negative impact on financial performance of Saudi, while asset efficiency has a positive impact on Saudi banks profitability. Moreover, increasing banks operating expenses leads to increase the net special commission and decrease ROA and ROE.

Study conducted by Ramadan et al.(2011) using a balanced panel data set of Jordanian commercial banks was used for the purpose of investigating the nature of the relationship between the profitability of banks and the characteristics of internal and external factors affecting profitability. For the purpose of the study 100 observation of 10 banks over the period 2001-2010 were comprised for 10 years. Two measures of bank's profitability have been utilized in the study: the rate of return on assets (ROA) and the rate of return on equity (ROE). The results of the study showed that the Jordanian bank's characteristics explain a significant part of interbank variation in profitability. High Jordanian bank profitability tends to be associated with well-capitalized banks, high lending activities, low credit risk, and the efficiency of expense management. In addition, the results of the study showed that the estimated effect of bank size did not support the significant scale economies for Jordanian banks. Finally, the estimation results indicated that individual effects on the profitability are present; this is concluded due to the fact that some of the differential slope coefficients are statistically significant.

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

Olweny and Shipho (2011) took a sample of annual financial statements of 38 Kenyan commercial banks from 2002 to 2008 for seven years to examine the effects of banking sector factors on the profitability of commercial banks in Kenya. To this end, their study adopted an explanatory research approach by using balanced panel data research design. The data was analyzed using multiple linear regressions method to describe the effect of bank specific on commercial banks profitability. The results of the analysis showed that all the bank specific factors had a statistically significant impact on profitability of Kenyan commercial banks.

The objective of the study conducted by Yadollahzadeh and Soltan (2013) was to examine the effect of bank specific factors on the performance of commercial banks in Iran for nine commercial banks during 2006- 2010 using panel data regression method. The used 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 significant 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.

2.2.2 Panel country studies

This sub section presents some of the panel country studies reviewed by different researcher chronologically

Study conducted by Goddard et al. (2004) had investigated the determinant of European banks profitability during the 1990s using cross-sectional, pooled cross-sectional time series and dynamic panel data models. Models for the determinants of profitability incorporate bank size, income diversification, credit risk and ownership type, as well as dynamic effects and they found that despite intensifying competition there was significant persistence of abnormal profit from year to year. Their results suggests that evidence for any consistent or systematic bank 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. In addition, the relationship between the capital-assets ratio and profitability UK commercial bank was positive.

Demerguç-Kunt and Huizingha (2001) investigated the impact of financial development and structure on commercial banks profitability using bank level data for a large number of developed and developing countries over the 1990-1997 period for eight years. The paper found that financial development has a very significant impact on bank performance. Specifically, the study reports that higher bank development is related to lower bank performance (Tougher competition explains the decrease of profitability). On the other hand, Stock market development

leads to increased profits and margins for banks especially at lower levels of financial development, indicating complementarities between bank and stock market.

Flamini et al. (2009) examine the determinants of bank profitability by using a sample of 389 banks on an unbalanced panel of 41 SSA countries over the period 1998-2006. To do that they considered a number of bank specific variables including credit risk, activity mix, capital asset ratio, bank size, market power as factors to influence bank profitability in the region. They found that higher returns on assets were associated with large bank size and activity diversification. Causation in the Granger sense from returns on assets to capital occurs with a considerable lag, which means that it does not maintain high returns immediately in the form of capital and reserve increases. Thus, the study gave some support to the policy of imposing higher capital requirements in the region to promote financial stability.

Ben Naceur and Omran (2011) analyzed the impact of bank regulations, concentration, and financial and institutional development on the Middle East and North Africa countries' commercial banks' margins and profitability during the period 1989-2005 for seventeen years. The study found that bank specific characteristics, in particular bank capitalization and credit risk, had a positive and significant impact on banks' net interest margins, expense efficiency, and profitability. On the other hand, macroeconomic and financial development indicators had no significant impact on commercial bank performance.

Bashir (2003) undertook study to analyze how bank characteristics and the overall financial environment affect the performance 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 of the banks and efficiency. Controlling for macroeconomic environment, financial market structure, and taxation, the results indicate that high capital-to-asset ratio and total loan and advance-to-asset ratios lead to higher profitability of the banks. In addition the results of the study indicate that foreign-owned banks are likely to be profitable. The regression results show that implicit and explicit taxes affect the bank performance and profitability negatively while favorable macroeconomic conditions impact performance measures positively.

Said and Tumin (2011) undertook study to examine performance and financial ratios of commercial banks in Malaysia and China by using bank-specific factors which include liquidity, credit risk, capital adequacy, operating expenses and the size of commercial banks on their performance, which is measured by return on average assets and return on average equity. The results imply that ratios employed in the study have different effects on the performance of banks in both countries, except credit and capital asset ratios. Operating expense ratios influence profitability of commercial banks in China, but this influence was not true for Malaysian banks regardless of the measure of performance.

Study made by Abreu and Mendes (2002) with the objective of investigating the determinants of bank's interest margins and profitability for some European countries in the last decade. Their study reveal that well capitalized banks face lower expected bankruptcy costs and this advantage "translate" into better profitability. Although with a negative sign in all regressions, the unemployment rate is relevant in explaining bank profitability and the inflation rate is also relevant effect on profitability.

Pasiouras and Kosmidou(2007) investigated the effects of different¹⁰ internal and external variables on profitability of commercial banks, including the capital asset ratio, cost to income ratio, loans to customers and short-term funding, bank size, inflation, GDP growth, concentration, and three determinants reflecting the development of banking and stock markets on bank returns for 584 domestic and foreign commercial banks in the 15 developed European Union countries over the period 1995-2001. The study found that all variables have significant effects on profitability, regardless of bank ownership status except for the concentration ratio.

According to the study conducted by Sehrish et al. (2011) bank size has a positive and significant relation with ROA, where size of the bank indicated by total assets. According to the study made by Susan (2014) bank size which is measured by natural logarithm of total assets of the bank has positive significant effect on profitability of Kenyan top six commercial banks which shows that the size of the bank have significant positive impact on profitability of the banks. It suggests that larger banks achieve a higher ROA. Goddard et al.(2004) investigated that the evidence for any consistent or systematic bank size and commercial banks profitability relationship is relatively weak. On the other hand study made by Ani et al. (2012) bank size has a significant negative

relationship with profitability of the banks which shows that the size of a bank could significantly affect the profitability of the bank negatively. The result of this study is in consonance with the findings of (Berger et al. 1987; Naceur; 2003; and Javaid et al., 2011) that the higher total assets may not necessarily lead to higher profitability. The negative coefficient of bank size indicates that this relation might be negative due to diseconomies of scale suffered by banks due to uncontrollable increased in bank size.

A study made by Boyd and Runkle (1993) and Sairaetet al. (2011) reveal that there is a negative relationship between bank size and bank profitability. According to Sinkey (1992) results indicate that bank size affects profitability negatively for big firms and positively for smaller banks. Study by Staikouras and Wood (2003) concludes that medium banks earn the highest profits followed by smaller ones. Positive association between size and bank performance are also confirmed by the study conducted by (Flamini et al. 2009; Bikker & HU, 2002). Large banks operate at lower costs because of economies of scale and can raise capital at lower costs. Findings of Molyneux and Thornton (1992), Bikker and Hu (2002) and Sehrish Gul et al.(2011) shows bank size have significant positive relation with bank profitability suggesting that larger banks achieve a higher profit. On the other hand higher total assets may not necessarily lead to higher profits due to diseconomies of scale suffered by banks due to uncontrollable increased bank size (Berger et al., 1987; Boyd & Runkle, 1993; Bourke, 1989; Naceur, 2003; Javaid et al. 2011 and Ani et al. 2012)

According to the study made by Susan (2014) capital strength impacts positively on Kenyan top banks` profitability in the period 2008-2013. Among the explanatory variables in the study, capital was found to have the largest impact on the changes in profits of the bank. The results are similar to Obamuyi (2013) and Bourke (1989) who argue that the positive relationship between bank profitability and size of capital is due to the fact that well capitalized banks can easily access funds cheaply and can invest in better quality assets. The findings of the study suggest that the commercial banks can improve their profits if they are well capitalized than others. Banks with large amount of capital are able to diversify their investments and are able to stand strong even during general financial crisis in the country. Such banks are strong in attracting more funds at cheaper rates which enhance their liquidity position (Obamuyi, 2013). The final impact is that such banks will have more funds to give out in form of credit at lower lending

rates of interest. According to Ani et al. (2012) Capital adequacy (ratio of total capital and reserve to total asset) shows a positive relationship with profitability (ROA). In the presence of asymmetric information and bankruptcy costs, the way the assets are funded could affect the banks value and a well-capitalized bank may send a good signal to the market regarding its performance (Imad et al., 2011) which is consonance with the findings of (Goddard et al., 2004) that investigated profitability of European banks. According to the study by Goddard et al. (2004) the relationship between the capital–assets ratio and bank profitability is positive.

According to the study by Susan (2014) when bank operation expenses increases it reduces banks profitability of the top Kenyan banks over the period of 2008-2013. With 1% increase in operations expense, profitability of the top Kenyan commercial banks decrease by 0.02% and the results of this study are consistent with the work of (Nsambu,2014).However these results are contrary with Molyneux & Thornton (1992) and Naceur (2003) found that bank operation expenses are positively associated with high banks profitability. The results for this study, implies that poor expenses management explains the poor performance of commercial banks in Kenya and managing expenses well will improve the performance of the top six banks in Kenya. Bank operation expenses significantly reduce bank profits. This suggests that there is possibility for these commercial banks to increase their profits by putting more effort on proper costs control and operating efficiency. This can be achieved by finding ways of optimal utilization of bank resources during production of banking products and services. Commercial banks need to invest on efficient management and in technologies that reduce costs of operations in order to enhance their performance. Generally, we conclude that asset composition and capital adequacy are the major endogenous factors under the control of management that determines the profitability of banks in Nigeria.

The negative relationship has been supported by various studies like Bourke (1989), Jiang et al. (2003) and Obamuyi (2013), suggesting that profitable banks operate at lower costs asset ratio. However, this variable gives mixed results as shown by other studies. (Molyneux and Thornton, 1992) found that expenses impact positively on profitability. The positive association between profitability and operating expenses was also observed in a study done in Tunisia (Naceur, 2003 and Guru et al. 2002).

According to Ani et al. (2012) an asset composition (ratio of total loans and advances to total asset) shows a significant positive relationship with profitability. This study suggests that with increase in inflation in the economy, the banks interest rate on all kinds of advances would increase and in this way the bank's interest earnings would show significant incremental. The study conclude that other variable remains constant the higher the rate of transforming deposits into loans, the higher the profitability of the bank, which is consistent with the result of the study conducted by (Athanasoglou et al.2006 and Abreu & Mendes,2000) found a significant and positive relationship between asset composition and profitability. In addition to these studies made by, Sehrish et al. (2011) concludes that loan shows positive and significant relationship with ROA which suggests that with more loans the chances of return on assets will be high.

The study by Abreu and Mendes (2000), Sehrish Gul et al. (2011) and Athanasoglou et al. (2006) gives evidence of a positive association between loan asset ratio and commercial bank profitability. However, the studies by Bashir and Hassan (2003) and Staikouras and Wood (2003) contradict the above results by arguing that higher loans to asset ratio negatively affect bank profitability.

According to the study made by (Susan, 2014) the coefficient of revenue diversification was found non-significant in determining profits of the top six commercial bank of Kenya. (Dietrich and Wanzenried, 2011) found a positive association between the degree of revenue diversification and bank profitability. The findings of the study by (Barros, Ferreira and Williams, 2007) revealed that income diversification has a negative impact on commercial bank performance. They suggested that the more diversified banks are less likely to be successful and more likely not to perform well.

Study conducted by Sehrish et al.(2011) shows deposits to total assets have the positive and significant impact on the performance of the banks and banks depending on deposits for funds can achieve better return on assets. Different studies show that bank performance can also be determined by the amount of deposit to asset ratio. According to results of study made by Alkassim (2005) and Ani et al. (2012) deposits have the positive and significant impact on the profitability of the bank. It shows that banks depending on deposits for funds can achieve better

return on assets .On the other hand Kunt and Huizinga (1999) found that deposits affect bank profitability negatively due to large costs incurred in their management.

2.2.3 Empirical studies in Ethiopia

In the context of Ethiopia, to the knowledge of the researcher, there appears to be some work on the determinants of profitability of Ethiopian commercial banks. Empirical evidence which included in this study are determinants of commercial banks profitability: an empirical study on Ethiopian commercial banks by, Demena (2011), determinants of commercial banks profitability: an empirical review of Ethiopian commercial banks conducted by Belayneh (2011), factors affecting profitability: an empirical study on Ethiopian banking industry made by Amdemikael (2012), determinants of commercial banks profitability: an empirical evidence from the commercial banks of Ethiopia by Birhanu (2012), determinants of bank profitability: an empirical study on Ethiopian private commercial banks by Habtamu (2012).

Study conducted by Damena (2011) examined the determinants of Ethiopian commercial banks profitability. The study applied the balanced panel data of seven Ethiopian commercial banks over the period of 2001- 2010. The paper used Ordinary Least Square (OLS) technique to investigate the impact of some internal and external factors on major profitability indicator i.e. ROA. The estimation results showed that all bank specific determinants, except deposit, significantly affect commercial banks profitability in Ethiopia. Market concentration was also a significant determining factor of profitability. Finally, with regard to macroeconomic variables, only economic growth affects banks profitability significantly.

Belayneh (2011) examined the determinants of Ethiopian commercial banks profitability by using balanced panel data of seven Ethiopian commercial banks that covers the period 2001-2010. The paper used Ordinary Least Square (OLS) technique to investigate the impact of some internal as well as external factors on major profitability indicator i.e., ROA. The estimation results of the study shows that all bank specific determinants, with the exception of saving deposit, significantly affect commercial banks profitability in Ethiopia. Finally, with regard to external variables, only economic growth exhibits a significant effect on commercial banks profitability.

The study made by Amdemikael (2012) examined the determinants of Ethiopian commercial banks profitability. The study applied by using balanced panel data of eight Ethiopian commercial banks that covers the period 2001- 2011 for twelve years. The study adopts a mixed methods research approach by combining documentary analysis and interviews to investigate the impact of internal and external variables on major profitability indicator i.e., ROA. The findings of the study show that capital adequacy, income diversification, bank size and gross domestic product have statistically significant and positive relationship with bank's profitability. On the other hand, variables like operational efficiency management and asset quality have a negative and statistically significant relationship with bank's profitability. However, the relationship for liquidity risk, concentration and inflation is found to be statistically insignificant.

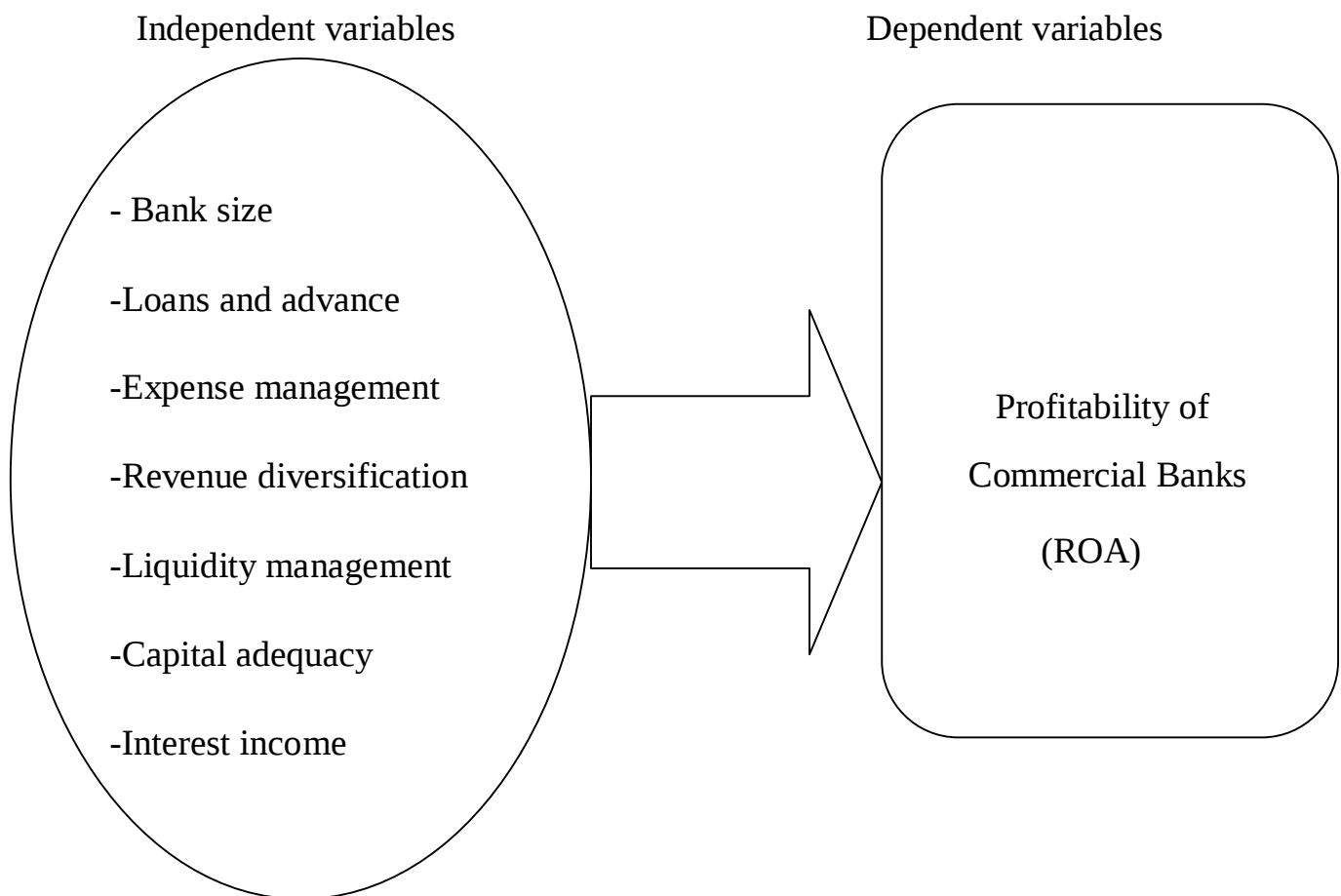
Birhanu (2012) investigated the determinants of Ethiopian commercial banks profitability over the period of 2001- 2011 by using balanced panel data of eight Ethiopian commercial banks. The paper used Ordinary Least Square (OLS) technique to investigate the impact of internal as well as external variables on profitability indicator i.e., ROAA, NIM. The finding of the studies shows, all bank-specific determinants, with the exception of bank size, expense management and credit risk, affect bank profitability significantly and positively in the expected way. However, bank size, expense management and credit risk affect the commercial banks profitability negatively. Moreover, no evidence is found in support of the presence of market concentration. Finally, from macro-economic 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.

Habtamu (2012) examined the determinants of Ethiopian private commercial banks profitability. The study applied the balanced panel data of seven Ethiopian commercial banks that covers the period 2002- 2011 for ten years. The paper used Ordinary Least Square (OLS) technique to investigate the impact of dependent variables on profitability indicator i.e., ROA, ROE & NIM. The empirical results of the study shows that bank specific factors; capital adequacy, employee 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.

2.3 Conceptual Framework

According to different empirical evidences profitability of commercial banks is affected by different factors. Based on the literature obtained from different study, this study used the following variables that could be determinants of bank profitability. These variables include bank size, loans, expense management, revenue diversification, liquidity management, capital adequacy and interest income. The study has seen how these variables determine the profitability of commercial banks in Ethiopia using data period from 2010 to 2015.

Figure 2.1 Conceptual model



Source: Designed by the researcher

2.4 Hypothesis of this study

In line with the broad purpose statement the following hypotheses are formulated for investigation.

Hypothesis 1: There is positive and significant relationship between bank size and profitability of commercial banks.

Hypothesis 2: There is positive and significant relationship between loan and profitability of commercial banks.

Hypothesis 3: There is negative and significant relationship between expense management and profitability of commercial banks.

Hypothesis 4: There is positive and significant relationship between Revenue diversification and profitability of commercial banks.

Hypothesis 5: There is positive and significant relationship between liquidity management and profitability of commercial banks.

Hypothesis 6: There is a positive and significant relationship between capital adequacy and profitability of commercial banks.

Hypothesis 7: There is positive and significant relationship between interest income and profitability of commercial banks.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Research Design

This research is explanatory research type. It identifies and explains determinants that have impact on the profitability of commercial banks by using secondary data collected based on the concepts defined in the research questions and hypothesis. It has identified the characteristics of bank specific factors affecting profitability of commercial banks by using balanced panel data from thirteen selected commercial banks.

3.2 Research Approaches

According to Creswell (2009) there are three fundamental elements of research approach namely qualitative, quantitative and mixed research approach. This section briefly presents the fundamental nature of these approaches.

Qualitative research approach is a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem (Creswell, 2009, p 4). It is a knowledge claim based primarily on the multiple meanings of individual experiences, socially and historically constructed meanings of individual experiences with intent of developing a theory. Marshall and Rossman (1999) outlined that qualitative research is less structured in description as it builds new theories. Flexibility and emergent without being constrained by standardized procedures that the investigator explores and understand phenomena entirely in their natural setting is an advantage of qualitative research.

As noted in Merchant and Van der Stede (2006) the significant advantage of qualitative research method is the ability to analyze naturalistic environments and such studies are able to examine more complex research questions without sacrificing the richness or complexity of the natural environments.

Despite the above advantage, Yesegat (2009) noted that qualitative research design has its own disadvantage. First, lack of standardized rules in the research design and the emphasis on giving meanings and interpretations to events and things that reduces the objectivity and reliability of the research process. This in turn compromises the reliability of findings.

Quantitative research is the numerical representation and manipulation of observations for the purpose of describing and explaining the phenomena that those observations reflect. There are two strategies of inquiry in quantitative approach: survey design and experimental design approach. The former provides a quantitative or numeric description of trends and opinions of a population by studying a sample of that population where as the later is used to test the impact of a treatment on an outcome, controlling for all other factors that might influence the outcome of the study (Creswell, 2009). The generalization to a total population from a sample is one of the advantages of carefully designed and applied quantitative research approach. To enhance the generalization of outcome, the approach follow standardized procedures, in sample selection, instrumental design, implementation and analysis of the study.

The reliability of finding and the alleviation of the impact of investigator and subject bias is the attribute of standardization. Despite its usefulness, quantitative research approach has its own disadvantage. Sample non-representativeness is one of its major drawbacks which take the researcher to sampling risk. Creswell (2003) noted that flexibility in design can make standardization to hinder exploitation of new ideas in addition to lack of quality of interpretive and exploratory examination of research problem. It is generally undertaken by using scientific methods which includes the generation of models, theories and hypothesis, developments of instruments and methods for measurement, experimental control and measurement of variables.

Mixed research approach on the other hand is pragmatic world view of usage of both quantitative and qualitative data sequentially i.e. researchers will not go to one extreme approach rather they use all available method to understand the problem. Therefore the disadvantage of using single approach will be minimized as it employees the practice of using both approach.

As noted by Green et al. (1989) mixed method approach has a number of benefits. The first benefit is triangulation pertaining to a situation where researchers seek convergence, corroboration, correspondence of results from quantitative and qualitative methods to increase

validity of constructs and inquiry results. Secondly, by mixed methods complementarily, researchers seek elaboration, enhancement, illustration, clarification of the results from one method with the results from the other method. Thirdly, by mixing methods with developmental intent, researchers seek to use the results from one method to help develop or inform the other method. Fourthly, mixing methods with initiation intent seeks the discovery of paradox and contradiction, new interpretations, the recasting of questions or results from one method with questions or results from the other method. Finally, to increase the scope of inquiry mixed method with expansion intent seeks to extend the breadth and range of inquiry by using different methods for different inquiry components.

The following section will show detail of the research method in line with the identified research problem.

3.3. Research Methods Adopted

Research design is used to provide necessary data to solve the problem under study. It involves the plan of data collection and analysis on an instrument. The choice among the three research approaches is mainly guided by the research problem apart from the underlying philosophy of each research methods (McKerchar, 2008 cited in Yesegat, 2009). It reveals that whether a research problem is based on a frame work developed deductively through a review of the literature and prefigured information to be collected in advance of the study or to allow it to emerge from the participants during the investigation process. The type of data may also be numeric information to be gathered on scales of instruments or more textual information, recording and reporting the voice of the interviewee. Based on the research problem and hypotheses developed in chapter one in line with the underlying philosophy of the research approaches, the quantitative research approach along with the survey design strategies of inquiry is used.

3.3.1 Survey design: documentary Analysis

Creswell (2003) stated that the purpose of survey is to generalize description of trends, attitudes, or opinions from a sample to a population so that inferences can be made about some characteristic, attitude, or behavior of this population. Moreover, as noted in Fowler (1986) it is also reasonable to use survey designs because of its benefits such as the economy of the design

and the rapid turnaround in data collection and identifying attributes of a large population from a small group of individuals. Therefore, it is logical to apply survey method for the study. The survey was carried out by means of structured document review

3.4 Study Population and Sampling techniques

3.4.1 Study Population

All operational commercial banks in Ethiopia were taken as the study population. Currently, there are 17 commercial banks operating in Ethiopia.

3.4.2 Sampling Method

From the target population, sample was selected based on purposive Sampling method which is a non- probability sampling procedure that ensures us to achieve a certain goal that we want to achieve in the study. For this study the researcher used 13 commercial banks that are established before 2009 in order to collect data from balance sheet for the period from 2010 to 2015. The criterion for selecting the banks was to collect data of at least for six years but other banks that have no data of more than six years are not included in this study. Therefore, the study included all banks that have balance sheet of six years. Banks under the study are Awash International Bank (AIB), Bank of Abyssinia (BOA), Berhan International Bank (BIB), Bunna International Bank (BUIB), Commercial Bank of Ethiopia (CBE), Cooperative Bank of Oromia (CBO), Dashen Bank (DB), Lion International Bank (LIB), Nib International Bank (NIB), Oromia International Bank (OIB), United Bank S.c (UB), Wegagen Bank (WB), and Zemen Bank (ZB).

3.5 Types of Data and Instrument of data collection

This study used the most recent secondary balanced panel data to analyze the determinants of commercial banks profitability from 2010 to 2015 from 13 commercial banks. Panel data has various advantages over conventional time series and cross sectional data. Panel data give large number of data points, more variability, less co linearity among explanatory variables; more degrees of freedom and more efficiency (Baltagi, 2001). Moreover, panel data help us to control individual specific heterogeneity which would be unobserved and correlated with other

explanatory variable (Hausman & Taylor, 1981 and Wooldridge, 2003). As a result, it enables us to produce more reliable and efficiently parameter estimates of the data.

Data was gathered from secondary source such as financial statements and balance sheets of the selected banks over the period of 2010-2015 from National Bank of Ethiopia and websites of the each bank. Data collected is about bank specific factors only and all data used in study are quantitative data. This study used cross sections of 13 banks for six years with total of 78 observations.

3.6 Method of Data Analysis

The study used descriptive statistics and econometrics model to analyze the data. The descriptive statistics used in the study are percentage, mean and standard deviation. While to investigate the determinate of bank profitability, multiple regression models are undertaken and these models are briefly discussed below.

3.6.1 Model Specification

The paper used multiple linear regression models. Characteristics of the model and proposed variables are likely not to violate the classical assumption underlying the OLS model. Modeling is based on panel data techniques. Panel data or longitudinal data, comprises of both cross-sectional elements and time-series elements; the cross-sectional element is reflected by the different Ethiopian commercial banks and the time-series element is reflected in the period of study (2010-2015). Panel data is favored over pure time-series or cross-sectional data because it can control for individual heterogeneity and there is a less degree of multi co linearity between variables (Altai, 2005).

Regression analysis is used to explain the total variation in dependent variable by breaking it into the explained variation due to explanatory variables included into the model and the residual variation. Balanced panel data about the determinants of profitability of commercial banks was analyzed using computer software. For this purpose the research used Eviews 9 software to compute the data.

The basic estimation strategy involved was pooling the observations across the banking industry and estimating the determinants of bank profitability by means of regression analysis.

Panel regression analysis will be done using the multiple regression models:

$$\pi_t = \beta_0 + \sum_{n=1}^N \beta_n X_{nt} + U_t \dots \dots \dots \text{(Equation 1)}$$

Where:-

- π_t = refer to the dependents variable which is profit expressed by ROA
- X = refers to the independent variables in the equation
- N = is number of independent variables in the equation
- β = refers to the value of the parameter
- U_t = refer to error term

So the equation can be presented like this:

$$ROA_{jt} = \beta_0 + \beta_1 BANKS_{jt} + \beta_2 LOAN_{jt} + \beta_3 EXPM_{jt} + \beta_4 REDV_{jt} + \beta_5 LIQM_{jt} + \beta_6 CAPA_{jt} + \beta_7 IINCOME_{jt} \dots \dots \dots \text{(Equation 2)}$$

Where:-

- ROA_{jt} = Return on asset of jth bank in time t which is proxy of indicating the profit of a given bank
- $BANKS_{jt}$ = Bank size which is natural logarithm of total asset of jth bank in time t
- $LOAN_{jt}$ = Loan which is measured by total loan to total asset ratio of jth bank in time t
- $EXPM_{jt}$ = Expense management which is measured by total noninterest expense to total asset ratio of jth bank in time t
- $REDV_{jt}$ = Revenue diversifications which is measured by total noninterest income to total assets ratio of jth bank in time t

- LIQM_{jt} = Liquidity management which is measured by liquid asset to total deposit of jth bank in time t
- CAPA_{jt} = Capital Adequacy which measured total capital to total asset ratio of jth bank in time t
- IINCOME_{jt} = Interest income which is measured by total interest income to total asset ratio of jth bank in time t

3.7 Descriptions of Variables

3.7.1 Dependent Variable

According to different literature, there are two major alternative measures of profitability, namely ROA and ROE. The choice of the profitability measurement ratios (ROA and ROE) depends on the objective of the profitability measure since the end of each of the profitability measures differ. The return on assets (the ratio of net profit to total assets) measures the capability of bank's management to make profits from its assets and it is a good indicator of how well a bank's management is managing the assets of the bank. According to Rivard and Thomas (2006) bank profitability is best measured by ROA for two primary reasons. First, ROA is not distorted by high equity multipliers and the second is that ROA reflects a better measure of a bank's ability to generate returns on its assets. Moreover, ROA takes account of the disparity in the absolute magnitude of the profits that may be related to bank size (Guru et al, 2009). In contrast, the return on equity (ROE), the ratio of net profit to total equity, measures the extent to which the bank's management is generating returns using the equity of the bank's shareholders. In this respect, we rarely find the paper utilizes ROE as a single measure of profitability (Rumler & Waschiczek, 2010).

This study used ROA as measure of dependent variable which is calculated by dividing net income to total asset.

$$\text{Return on Asset (ROA)} = \frac{\text{Net income}}{\text{Total Asset}}$$

3.7.2 Independent Variable

This subsection describes the independent variables that are used in the econometric model to estimate the dependent variable (ROA).

A. Bank size: The important determinant of commercial banks performance that is considered by the study is bank size. In most studies of bank profitability determinants, the total asset is used a measure for bank size. Bank size is usually used to account for potential economies or diseconomies of scale in the banking industry. In academic literature there is consensus that economies of scale and synergies arise up to a certain level of size. Beyond that level, financial organizations become too complex to manage and diseconomies of scale arise. The effect of size bank size could therefore be nonlinear which means that profitability is likely to increase up to a certain level by achieving economies of scale and decline from a certain level in which banks become too complex and bureaucratic. This analysis uses the logarithm of total asset to capture the potential non-linear effect of bank size similar to (Sastrosuwito & Suzuki, 2011; Athanasoglou et al., 2008).

Bank size is included as an explanatory variable to give an explanation for size related economies of scale or diseconomies of scale in Ethiopia's banking sector.

Bank size (BANKS) =is natural logarithm of total asset

B. Total loans and advance(TOTA): One of the factors affecting commercial banks profitability which is calculated by dividing total loan to total asset of the bank and it measures what percent of total assets is comprised by loans and it gauges the percentage of total assets the bank has invested in loans (or financings)

$$\text{LOAN} = \frac{\text{Total loan}}{\text{Total asset}}$$

C. Expense Management (EXM): One of the factors affects commercial banks profitability and it is measured by the ratio of operating expense to total assets (e.g. Aburime, 2008) and it is a proxy to management quality.

$$\text{EXPM} = \frac{\text{Total operating expense}}{\text{Total asset}}$$

D. Revenue Diversification (RDV); It is measured by non-interest income to total asset of the bank and it is used as a proxy for income diversification. This ratio is computed as the percentage of the bank's income other than interest income to its total asset of the bank.

$$\text{RDV} = \frac{\text{Non interest Income}}{\text{Total Asset}}$$

E. Liquidity Management (LIQM): the ability of the bank to fulfill its obligations, mainly of depositors and it is measured by liquid to total deposit of the bank.

$$\text{LIQM} = \frac{\text{Liquid asset}}{\text{Total deposit}}$$

F. Capital Adequacy (CAPA): Capital adequacy reflects the capital strength or capital structure of a bank which is measured by the ratio of capital to total Asset. Capital Adequacy used to measure the percentage of the total asset that is financed with equity capital and it describes the sufficiency of the amount of equity that can absorb shocks that banks may experience.

$$\text{CAPA} = \frac{\text{Total capital}}{\text{Total Asset}}$$

G. Interest Income (IINCOME): refers to income generated from interest which is calculated by dividing interest income to total asset of the bank.

$$\text{IINCOME} = \frac{\text{Interest income}}{\text{Total asset}}$$

CHAPTER FOUR

EMPIRICAL FINDINGS AND DISCUSSIONS

This chapter deals with the analysis and presentation of the regression results of the study. The data were analyzed by using E-views 9 software. The remaining part of the chapter is organized into seven sections. The first section 4.1 presented the test for the classical liner regression model/CLRM assumption which is followed by model selection criteria under section 4.2. Section 4.3 presents the descriptive statistics of the dependent and independent variables. Section 4.4 presents correlation analysis. Section 4.5 presents, the results of the regression analysis which is followed by discussion of the study under section 4.6. Then finally, summary of analysis were presented under section 4.7.

4.1 CLRM assumptions and Diagnostic tests

As noted in Brooks (2008) there are some basic assumptions required to show that the estimation technique, OLS, had a number of desirable properties and hypothesis tests regarding the coefficient estimates could validly be conducted. If the Classical Linear Regression Model (CLRM) assumptions hold, then the estimators determined by OLS will have a number of desirable properties known as Best Linear Unbiased Estimators (BLUE). Therefore, for the purpose of this study, diagnostic tests are performed to ensure that whether the assumptions of the CLRM are violated or not in the model of the study. The implication of each assumption test, decision rules therein, test results and their discussion are discussed in the upcoming sub sections.

Test for average value of the error term is zero $E(u_i | X_i) = 0$

This assumption states that the average value of the errors (disturbance term) is zero. According to this assumption rules, if a constant term is included in the regression equation result; this assumption will never be violated. Therefore, since the constant term (i.e. α) was included in the regression equation result, the average value of the error term in this study is expected to be zero

Heteroskedasticity test

As noted in Brooks (2008) homoskedasticity is one of the CLRM assumptions which state that the variance of the errors term is constant. If the errors terms do not have a constant variance, they are said to be heteroskedastic. The popular ARCH test for heteroskedasticity was used to test the presence of the heteroskedasticity. Both F-statistic and chi-square (χ^2) tests statistic were used.

Table 4.1 Test of Heteroskedasticity

Heteroskedasticity Test: ARCH

F-statistic	0.023815	Prob. F(1,75)	0.8778
Obs*R-squared	0.024442	Prob. Chi-Square(1)	0.8758

Source: computed from E-views 9 result

Accordingly, table 4.1 shows that both the F-statistic and chi-square (χ^2) test give the same result that there is no significant evidence for the presence of Heteroskedasticity in the models. Since the p -values in the observation were above 0.05, which shows that there is no evidence for the presence of the heteroskedasticity.

Test for Multicollinearity

Multicollinearity assumption is concerned with the existence of a perfect linear relationship among some or all explanatory variables in the studies (Gujarati D., 2004). If multicollinearity is perfect among independent variable, their regression coefficients are indeterminate and their standard errors are infinite. If multicollinearity is less than perfect, the regression coefficients, although determinate, possess large standard error which means the coefficients cannot be estimated with great precision or accuracy.

According to Churchill and Iacobucci (2005), when there is multicollinearity, the amount of information about the effect of independent variables on dependent variables decreases. As a result, many of the explanatory variables in the study could be judged as they are not related to the dependent variables when in fact they are. Multicollinearity condition exists only where there is high, but not perfect correlation between two or more independent variables (Cameron &

Trivedi, 2009 and Wooldridge, 2006). If we did not allow the presence for any correlation among the independent variables in the study, then multiple regressions would not be very significant for econometric analysis.

Hailer et al (2006) argued that multicollinearity problem exists when the correlation coefficient among the independent variables in the study are greater than 0.9. The results in the following correlation matrix table 4.2 shows that the highest correlation was 0.740168 which is between bank size and capital adequacy. Since there is no correlation above 0.9 according to (Hair et al, 2006), we can conclude that there is no problem of multicollinearity in this study.

Table 4.2 Correlation matrixes of independent variables

	BANKS	LOAN	EXPM	REDV	LIQM	CAPA	IINCOME
BANKS	1.000000						
LOAN	0.018230	1.000000					
EXPM	-0.491253	0.371549	1.000000				
REDV	-0.283355	-0.094605	0.307745	1.000000			
LIQM	-0.689142	-0.412834	0.043376	0.333546	1.000000		
CAPA	-0.740168	0.127076	0.454061	0.073635	0.497997	1.000000	
IINCOME	0.383578	0.639655	0.264527	-0.167387	-0.73616	-0.195019	1.000000

Source: computed from E-views 9 result

Normality test

As noted in Brooks (2008) the normality assumption is required in order to conduct single or joint hypothesis tests about the model parameters. In this study, the normality of the data was checked with the popular Bera- Jarque test statistic by testing whether the coefficient of skewness and the coefficient of excess kurtosis are zero and three respectively (Brooks, 2008). The hypothesis for the normality test was formulated as follow:

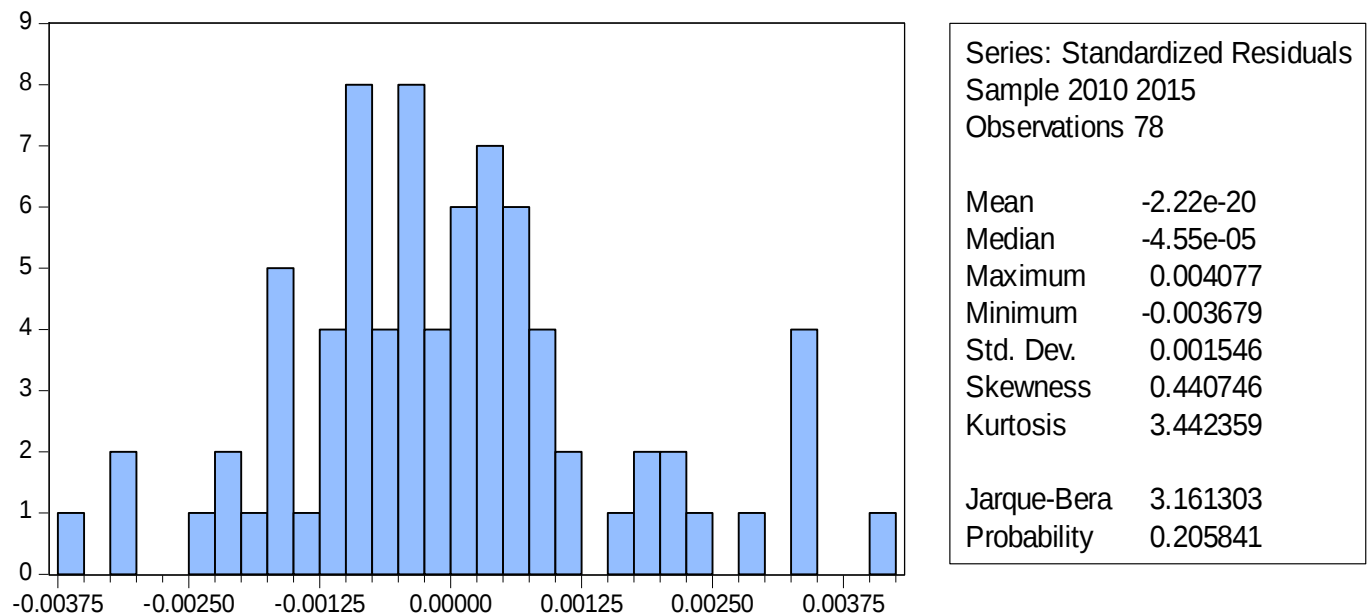
H0: Error term is normally distributed

H1: Error term is not normally distributed

$\alpha = 0.05$

Decision Rule: Reject H_0 if P value of JB is less than significant level 0.05

Figure 4.1 Normality test for residuals



Source: computed from E-views 9 result

The normality tests for this study as shown in figure 4.1, the histogram is bell-shaped, the coefficient of kurtosis was close to 3 and the Bera-Jarque statistic had a P-value of 0.2059 which is bigger than 0.05 so, we cannot reject the null of normality at the 5% level, Concluded that the data were consistent with a normal distribution assumption and there is no the problem of normality in the model.

Testing for serial correlation

Serial correlation problem exist as a result of model miss-specification or genuine autocorrelation of the model error term. In the presence of serial correlation ordinary least squares are no-longer BLUE (Best Linear Unbiased estimators) and R-squared may be over-estimated. According to Brooks (2008) autocorrelation problem exist in the model when the error term for any observation is related to the error term of other observation. In the case of autocorrelation problem, the estimated parameters can remain unbiased and consistent, but it is not efficient. 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.

Null: Residuals are not serially correlated

Alt: Residuals are serially correlated

Decision Rule: Reject H0 if p-value greater than significance level. Otherwise, do not reject Ho

Table 4.3: Serial Correlation LM Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.541570	Prob. F(2,69)	0.5843
Obs*R-squared	1.205401	Prob. Chi-Square(2)	0.5473

Source: computed from E-views 9 result

As shown in the above table 4.3, the F test and the P value of F-statistic result of the model was 0.5843, which is beyond the significance level of 5%. As a result, the null hypothesis which states residuals are not serially correlated 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. In addition, the Chi-Square P-value of the models also supports the absence of serial correlation in the model. Therefore, there is no serial correlation among residuals.

4.2. Model selection criteria

There are broadly two classes of panel data estimator approaches that can be used in Empirical research approached: fixed effects models (FEM) and random effects models (REM) (Brooks, 2008).

The FEM estimations allows for the unobservable bank heterogeneity and the intercept in the regression model to differ cross-sectionally. However, the use of a fixed-effects model will eliminate the time-invariant hidden bank features that affect profitability. The random effects approach proposes different intercept terms for each entity and these intercepts are constant over the time, with the relationships between the independent and dependent variables assumed to be the same both cross-sectionally and temporally (Brooks, 2008).The choice of the appropriate Panel data model either fixed affects method or Random effects model, a Hausman specification

test was conducted providing evidence in favor of the REM model (Baltagi, 2005). The null hypothesis 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)

Hausman Test

Null: Random effect Model is appropriate

Alt: Fixed effect Model is appropriate

Decision Rule: Reject H0 if p-value is less than significance level 5% or do not reject Ho if p-value is greater than significance level 5%. According to the results presented below the study adopt fixed effects model.

Table 4.4 Hausman Test

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	41.999892	7	0.0000

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
BANKS	0.006516	0.002428	0.000003	0.0142
LOAN	0.020435	0.011145	0.000010	0.0028
EXPM	-0.859640	-0.754964	0.000431	0.0000
REDV	0.702531	0.672088	0.000237	0.0479
LIQM	0.003122	0.001489	0.000002	0.2127
CAPA	0.026655	0.022771	0.000025	0.4329
IINCOME	0.503279	0.533848	0.000916	0.3125

Source: computed from E-views 9 result

As shown from the above Hausman specification test Tables 4.4 the P-values of the model was 0.0000 which are less than 5% level of significance. The research cannot accept null hypothesis

instead alternative hypothesis accepted because p value is less than 5%. Therefore, appropriate model for the study is Fixed Effect Model.

4.3 Descriptive Statistics of the data

This section presents the outcomes of descriptive statistics for dependent and independent variables used in the study for the sample banks. The dependent variables used in the study is ROA, while the independent variables were banks size, total loan and advance, expense management, revenue diversification, liquidity management, capital adequacy and interest income.

The table 4.5 presents the mean, median, standard deviation, minimum and maximum value for the dependent and independent variables for the sample banks used in the study over the year 2010 to 2015.

Table 4.5 Summary of descriptive statistics

Variables	Observations	Mean	Median	Max	Min	Std. Dev
ROA	78	0.027977	0.027731	0.052505	-0.01582	0.009598
BANKS	78	9.833562	9.864182	11.48229	8.579229	0.571475
LOAN	78	0.427749	0.427722	0.57285	0.314893	0.054018
EXPM	78	0.031509	0.030713	0.05563	0.012378	0.008911
REDV	78	0.039807	0.038361	0.097347	0.006377	0.015208
LIQM	78	0.463413	0.432732	1.042766	0.154432	0.193423
CAPA	78	0.144179	0.140158	0.352212	0.042501	0.051484
IINCOME	78	0.048931	0.050246	0.068511	0.015425	0.010777

Source: computed from E-views 9 result

As stated in the above table 4.5, all variables comprised 78 observations (panel data of 13 commercial banks for 6 years) and the profitability measure used in the study namely; ROA indicates that the Ethiopian commercial banks attained, on average a positive after tax profit over the last six years. For the total sample of the banks in the study, the mean of ROA was 2.79%

with a minimum of -1.58 % and a maximum of 5.25%. That means the most profitable bank among the sampled banks in the study earned 5.25 cents of profit after tax for a single birr invested in the assets of the firm. On the other hand, the least profitable bank of the sampled banks loss 0.3 cents for each birr invested in the assets of the firm. The data set has the standard deviation of (0.009598) which indicates that the profitability variation between the selected banks in the study was very small. The above result shows that these banks need to optimize the utilization of their assets to increase the return on their assets.

Concerning the explanatory variables of the model there are some statistics that have to be mentioned. Capital adequacy which is measured by total capital divided by total assets has a mean value of 14.41% with a maximum and minimum value of 35.22% and 4.25% respectively. The mean value indicates on average 14.41% of the total asset is capital for sampled banks. The standard deviation statistics for capital adequacy ratio was (0.05148) which shows the existence of relatively higher variation of capital to asset ratio between the selected banks compared to the variation in ROA. The second independent variable used in the study was liquidity management which is measured by liquid asset divided by total deposit has a mean value of 46.34% with a maximum and minimum value of 104.20% and 15.44% respectively. The liquidity measure of the study indicates that the Ethiopian commercial banks have on average, a higher liquidity position which was somewhat higher than the minimum requirement set by NBE which is currently 15%. In addition, the standard deviation of liquidity management was (0.193423) which shows there is higher variation in liquidity among sampled banks.

The third independent variable used in the study was expense management which is measured by total noninterest expense divided by total asset has showed the values of mean which is equal to 3.15% with a maximum of 5.56% and minimum value of 1.23% in the study period undertaken. Standard deviation has registered the value equal to (0.008911). The fourth independent variable used in the study was revenue diversification which is measured by total noninterest income divided by total asset has a mean value of 3.98% with a maximum and minimum value of 9.73% and 0.64% respectively. The data set of revenue diversification has experienced standard deviation equal to (0.0152) which shows the existence of less variation among the Ethiopian banks in diversifying their source of revenue

The fifth variable used in study was loan with a mean of value of 0.4277 which indicates that average loan to asset ratio in banks under study is 42.77%. The minimum and maximum value of the loan in the given data set is 0.3149 and 0.5729 respectively which indicates that banks with lowest and highest loan to asset ratio, loan comprises 31.49% and 42.77% from total assets respectively. The data set has showed the standard deviation of the loan is equal to (0.0540). This implies that there is higher variation in total loan to total asset ratio in the sample banks under study.

Table 4.5 also shows that the observation of interest income of the commercial banks under studies has showed that the mean for the given data set is 4.89% which implies that a one unit birr asset is generating 4.89 cents of interest income. In addition, this study shows the minimum value equal to 1.54% and maximum 6.85% value over the study period and given data set. Data set of interest income has experienced standard deviation equal to (0.0107) which is closer to the mean value. This indicated that there is very lower variation in average interest income to asset ratio of sample banks.

The other variable employed in this study is bank size which is measured by natural log of total asset had the highest standard deviation with (0.5714) which means it is the most deviated variable from its mean compared to other variables.

4.4 Correlation analysis among variables

Correlation is a way to index the degree to which two or more variables included in the study are associated with or related to each other. The most widely used bi-variant correlation statistics is the Pearson product-movement coefficient, commonly called the Pearson correlation which was applied in this study. Correlation coefficient between two variables lies from +1 (i.e. perfect linear positive association) to -1 (i.e. perfect negative linear association). The sample size used in the study is the key element to determine whether or not the correlation coefficient is different from zero/statistically significant. Table 4.6 below shows the correlation coefficient between the dependent variables and independent variables.

Table 4.6 Correlation matrix of dependent and independent variables

	ROA	BANKS	LOAN	EXPM	REDV	LIQM	CAPA	IINCOME
ROA	1							
BANKS	0.27276	1						
LOAN	0.046458	0.01823	1					
EXPM	-0.15436	-0.49125	0.371549	1				
REDV	0.683511	-0.28336	-0.09461	0.307745	1			
LIQM	-0.13435	-0.68914	-0.41283	0.043376	0.333546	1		
CAPA	0.28369	-0.74017	0.127076	0.454061	0.073635	0.497997	1	
IINCOME	0.264175	0.383578	0.639655	0.264527	-0.16739	-0.73616	-0.1950	1

Source: computed from E-views 9 result

From the correlation matrix presented in the above table 4.6, revenue diversification was the most significant variable that positively correlated with ROA which indicated by a coefficient of 68.35% with ROA. This correlation clearly shows that, as the non interest income increases, profitability of the bank also moves to the same direction. On the other hand, the ratio of operating expense to asset and the ratio of liquid asset to total deposit have negative relationship with the profitability measure, implying that, when the operating expense and high funding cost that occur due to liquidity problem increases, profitability moves to the opposite direction. In addition, correlation matrix also shows that bank size, capital adequacy, loan and interest income were positive and significant correlated with profitability with a correlation coefficient of (0.27276), (0.28369), (0.046458) and (0.264175) respectively.

4.5 Results of regression analysis

This section presents the empirical findings from the econometric results on the factors affecting bank profitability in Ethiopia. The section covers the empirical regression model used in this study and the results of the regression analysis. Under the following regression outputs table the beta coefficient which indicates that each variables level of influence on the dependent variable and its sign may be negative or positive. The P-value indicates that at what percentage or precession level of each variable is significant. The R2 values indicate the explanatory power of

the model to explain dependent variables and in this study adjusted R2 value which takes into account the loss of degrees of freedom associated with adding extra variables were inferred to see the explanatory powers of the models.

Empirical model: the empirical model used in the study in order to identify the determinants of commercial banks profitability in Ethiopian was provided as follows:

$$ROA_{jt} = \beta_0 + \beta_1 (BANKS)_{jt} + \beta_2 (LOAN)_{jt} + \beta_3 (EXPM)_{jt} + \beta_4 (REDV)_{jt} + \beta_5 (LIQM)_{jt} + \beta_6 (CAPA)_{jt} + \beta_7 (IINCOME)_{jt} + U_{jt}$$

Table 4.7 Regression Result for factors affecting Ethiopian banks profitability

Dependent Variable: ROA

Method: Panel Least Squares

Date: 05/18/17 Time: 21:25

Sample: 2010 2015

Periods included: 6

Cross-sections included: 13

Total panel (balanced) observations: 78

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.075640	0.018682	-4.048724	0.0002
BANKS	0.006516	0.001937	3.363909	0.0014
LOAN	0.020435	0.006899	2.962063	0.0044
EXPM	-0.859640	0.045002	-19.10242	0.0000
REDV	0.702531	0.026682	26.32965	0.0000
LIQM	0.003122	0.002859	1.091924	0.2794
CAPA	0.026655	0.009702	2.747207	0.0080
IINCOME	0.503279	0.050228	10.01988	0.0000
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.974062	Mean dependent var		0.027977
Adjusted R-squared	0.965565	S.D. dependent var		0.009598
S.E. of regression	0.001781	Akaike info criterion		-9.606688
Sum squared resid	0.000184	Schwarz criterion		-9.002404
Log likelihood	394.6608	Hannan-Quinn criter.		-9.364782
F-statistic	114.6372	Durbin-Watson stat		2.055723
Prob(F-statistic)	0.000000			

Source: computed from E-views 9 result

The estimation result of the operational panel regression model used in the study is presented in above table 4.7. From table 4.7 the R-squared statistics and the adjusted-R squared statistics of the model was 97.40% and 96.55% respectively is an indication that the model is a good fit. The result indicates 96.55% of variations in return on asset of Ethiopian commercial banks were explained by independent variables included in the model that is banks size, total loan and advance, expense management, revenue diversification, capital adequacy and income generated from interest. However, the remaining 2.6% changes in return on asset of Ethiopian commercial banks are explained by other factors that are not included in the model. In addition, the F-statistic was 114.63 and the probability of not rejecting the null hypothesis that there is no statistically significant relationship exist between the dependent variable (ROA) and the independent variables included in the study is 0.000000 indicates that the overall model is highly significant at 1% which enhanced its reliability and validity and all the independent variables are jointly significant in causing variation in return on asset.

Table 4.7 also shows that variables like banks size, total loan and advance, revenue diversification, liquidity management, capital adequacy and interest income had a positive relationship with profitability as far as their coefficients were (0.006516), (0.020435), (0.702531), (0.003122), (0.026655) and (0.503279) respectively. This revealed that, there was a direct relationship between the above six independent variables and ROA. On the other hand expense management, have a negative coefficient of -0.859640 which indicates that there was an inverse relationship between operating expense and ROA. Thus the increase of these variables will lead to a decrease in ROA. In general as per the regression results provided in above table 4.7 shows among the 7 regressors used in the study six of them were significant.

4.6 Discussion of the study

Based on the outputs presented in the above regression analysis result table 4.7 the next section tries to present the analysis with respect to each profit determinant.

Bank Size

The above regression analysis in the table 4.7 depicted that, the coefficient of Bank size (BANKS) which is measured by natural Log of Total Assets is 0.006516 and its P-value is 0.0014. Holding other independent variables constant at their average value, when Bank size

(BANKS) increased by one birr, return on asset of Ethiopian commercial banks would be increased by 0.65 % and statistically significant at 1% of significance level. This indicates that the relationship is positive as expected and there is no sufficient evidence to support the negative relationship between ROA and bank size. This positive relationship implies that bank size induces economies of scale there by making larger banks more profitable. Economies of scale will reduce the cost of gathering and processing information.

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. The finding of this study was consistent with (Akhavinet al., 1997; Smirlock, 1985; Dietrich & Wanzenried, 2009 and Ezra, 2013). Thus, the researcher fails to reject the hypothesis which stated there is a positive relationship between bank size and bank profitability in Ethiopia.

Loan

The coefficient of loan which is measured by total loan and advance to asset ratio was positive as expected and statistically significant at 1% significance level (p-value=0.0044). Holding other independent variables constant at their average value, when total loans (LOAN) increased by one birr return on asset of Ethiopian commercial banks would be increased by 2.04%. Moreover, the coefficient of the ratio of total loan to asset is (0.020435)which was high which shows that an increase in total loan will result in increased profitability. This is in line with the expectation that loan is one of the main sources of interest income for the banks. Banks are intermediaries between lenders and borrowers and the more the deposit that are transformed into loans, the higher the level of profit will be which indicates that with more loans the chances of return on assets will be high. This result is consistent with the study of (Athanasoglou et al. 2006; Abreu & Mendes, 2000 and Sehrish et al, 2011). Thus, these studies fail to reject the hypothesis which stated there is a significant positive relationship between total loan and bank profitability in Ethiopia.

Expense management

Concerning the expense management, the regression results of this study implies that the relation between operating expense and ROA is a negative and significant at 1% significance level (p-value=0.859640). Holding other independent variables constant at their average value, when

operating expense (EXPM) of the banks increased by one percent, return on asset (ROA) of sampled Ethiopian commercial banks would be decreased by 85.96%. In other words, there is significant negative relationship between operating expense (EXPM) and return on asset (ROA) of sampled Ethiopian commercial banks. Therefore, the researcher fails to reject the hypothesis which stated there is negative relationship between expense management and ROA.

The negative relationship between operating expense and profitability of the bank shows that when the operating expense ratio increases the profitability of commercial banks decreases in opposite direction. In addition, this result has been supported by various studies like (Bourke, 1989; Jiang et al, 2003 and Obamuyi, 2013) they suggest that profitable banks operate at lower costs. This showed that minimizing commercial banks operating expense in Ethiopia would certainly improve the overall banks performance in general and profitability in particular. Managing expenses well will improve the performance of the banks. This can be achieved by finding best ways of optimal utilization of bank resources during production of banking products and services. Commercial banks need to invest on efficient management and in technologies that reduce costs of operations in order to enhance their performance. Therefore, operating expense exists as one of the major determinant factor that can influence Ethiopian banks profitability in an unfavorable way. Moreover, this result was consistent with the existed reality in the Ethiopian banking industry where the operating expense efficiency was definitely lower.

Revenue diversification

Diversification is another important determinant of the commercial banks profitability. The ratio of non-interest income to total assets which is a measure of diversification and business mix have a positive effect on profitability, which is in agreement with a prior expectation. Moreover, Revenue diversification is statistically significant at 1% significance level ($p\text{-value}=0.0000$) in explaining the variability in ROA of commercial banks in Ethiopia. Thus, REDV was considered as a vital driver of the performance of Commercial banks in Ethiopia and this is attribute to the fact that the banks are undergoing a gradual transformation away from the traditional business of deposit and lending, financial intermediation and towards provision of other financial services including foreign currency, guarantee service and modern money transfer system. In addition, the highest positive coefficient that existed between revenue diversification and profitability compared to other variables clearly indicates that the Ethiopian banks profitability is highly

determined by earnings other than interest. This result was also consistent with the previous findings of (Olweny & Shipo, 2011; Dietrich & Wanzenried, 2011; and Trujillo-Ponce, 2012). In addition, the result of this study was in agreement with what existed currently in the Ethiopian banking industry context which shows the shifting of banks from interest based income to non-interest income as a result of relatively growing competition. Therefore, the researcher failed to reject the null hypothesis that revenue diversification has a positive effect on ROA. This means, there is no sufficient evidence to support the negative relationship between ROA and REDV.

Liquidity management

The regression analysis in table 4.7 shows that, the coefficient of liquidity management which measured by liquid assets to total deposits is 0.003122 and its P-value is 0.2794. Holding other independent variables constant at their average value, when liquidity management (LIQM) increased by one percent, return on asset (ROA) of sampled Ethiopian commercial banks would be increased by 0.3122%, but statistically insignificant at 5% of significance level. There is insignificant positive relationship between liquidity management (LIQM) and return on asset (ROA) of sampled Ethiopian commercial banks. In addition, the insignificant parameter of liquidity indicates that the liquidity structure does not affect Ethiopian banks profitability. According to some previous studies, the results concerning liquidity management are mixed. Study conducted by Molyneux and Thorton (1992) and Guru et al. (2002) find a negative relationship between liquidity management and bank profitability. However, the studies made by Pasiouras and Kosmidou, (2007) found a significant positive relationship between liquidity management and bank profitability. Therefore, on the hypothesis that states there is a significant relationship between liquidity management and profitability the data did not support the hypothesis or the finding of the study is not statistically significant.

Capital adequacy

According to the above fixed effect regression output in table 4.7, the coefficient of capital adequacy (CAPA) which is measured by Total Capital to Total Asset is 0.026655 and its P-value is 0.0080. Holding other independent variables constant at their average value, when capital adequacy (CAPA) increase by one percent, return on asset (ROA) of sampled Ethiopian commercial banks was increase by 2.66% and statistically significant at 1% of significant level.

This is in line with the expectation that 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. Therefore, the researcher failed to reject the null hypothesis that capital adequacy has a positive effect on ROA which means; there is no sufficient evidence to support the negative relationship between ROA and CAPA.

This finding is consistent with previous studies of (Kosmidou, 2008; Pasiouras and Kosmidou, 2007; Athanasoglou et al. 2008; Amdemikael, 2012 and McDonald & Liliana, 2009). In addition, it also indicates that well capitalized Ethiopian commercial banks face lower costs of going bankrupt, which reduces their cost of funding or that they have lower needs for external funding which results in higher profitability of the banks. The finding of this study was also consistent with the existed reality in Ethiopian banking industry, which shows the existence of a direct relationship between capital adequacy and bank profitability examples, CBE is the most capitalized and profitable banks in Ethiopia. So based on the findings we can conclude that capital adequacy was one of the main determinants of Ethiopian commercial banks profitability.

Interest Income

This variable is explained in the model as a ratio of interest income to total asset and it is a primary source of income for the banks because banks make loan and receive interest income. Based on the above table 4.7 the coefficient of interest income (IINCOME) measured by interest income to total asset is 0.503279 and its P-value are 0.0000. Holding other independent variables constant at their average value, when interest income (IINCOME) increased by one percent, return on asset (ROA) of sampled Ethiopian commercial banks would be increased by 50.32% and statistically significant at 1% level of significant. Therefore, the researcher failed to reject the null hypothesis that interest income has a positive effect on ROA. This means, there is no sufficient evidence to support the negative relationship between ROA and interest income.

As expected interest income has positive effect on profitability of commercial banks which means when interest income increases, profitability also increases on the same direction. It implies that a more efficient bank should have higher profits since it is able to maximize on its net interest income. This result is consistent with the study of (Havrylchyk et al., 2006) who found a positive and direct relationship between interest income and profitability of the banks.

4.7 Summary of Analysis

The following table 4.8 presents the summary of hypothesized expected sign and actual sign for the relationship between the independent variables and banks profitability.

Table 4.8 Summary of actual and expected signs of explanatory variables on the Dependent variables

Explanatory variables	Expected relationship	Actual relationship	Statistical significance Test	Hypothesis status
BANKS	Positive	Positive	significant at1%	Failed to reject
LOAN	Positive	Positive	significant at1%	Failed to reject
EXPM	Negative	Negative	significant at1%	Failed to reject
REDV	Positive	Positive	significant at1%	Failed to reject
LIQM	Positive	Positive	Insignificant	Reject
CAPA	Positive	Positive	significant at1%	Failed to reject
IINCOME	Positive	Positive	significant at1%	Failed to reject

Source: own computation

As expected bank size, total loan, revenue diversification, liquidity management, capital adequacy and interest income affects banks profitability positively. On the other hand expected expense management and bank profitability are negatively associated.

This chapter discussed the analysis of the results of multiple linear regressions model of the study. To summarize the above data analysis all bank specific factors included in the study are the major determinant of Ethiopian banks profitability except liquidity management. Thus, next chapter will discuss the conclusions and recommendations of the study.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter deals with the conclusions and recommendations provided based on the findings of the study presented under previous chapter. The following sections discussed about the final conclusion remarks of the study and applicable recommendations. Accordingly this chapter is organized into three sections. The first section, section 5.1 presents summary of the findings whereas the second section, section 5.2 presents conclusions. Then finally, recommendations were presented under section 5.3

5.1 Summary of Findings

The findings of the study revealed that bank size, loan, expense management, revenue diversification, capital adequacy and interest income are the major significant determinants of commercial banks profitability in Ethiopia. According to this study, bank size, loan, revenue diversification, capital adequacy and interest income have significant positive effect on profitability of the banks but operating expense management has significant and the negative effect profitability of commercial banks in Ethiopia. On the other hand, liquidity management is insignificant determinants of the profitability.

All the variables except liquidity management are significant at the 1% level in the regression result with the predictions. This significance suggests that the bank size, loan, expense management, revenue diversification, liquidity management, capital adequacy and interest income are important in jointly determining the profitability of commercial banks.

5.2. Conclusions

The main purpose of this study was to find out the most important internal factors that determine the profitability of Ethiopian commercial banks and to what extent these determinants exert impact on Ethiopian banks profitability. The previous studies on bank profitability have been reviewed and it is summarized that the profitability of bank is affected by internal and external factors. The internal determinants refers to the factors originate from bank accounts balance sheets and income statement accounts and as bank-specific determinants of profitability. The

external determinants are variables that are not related to bank management but reflect the economic environment that affects performance of financial institutions. The empirical results from previous studies conclude that internal (bank specific) factors explain a large proportion of banks profitability; nevertheless external factors have also an impact on the performance.

Based on the review of previous studies on commercial banks profitability and banking area theories, the present study investigated bank-specific determinant of commercial banks profitability over the period of 2010 to 2015. The factors that were used in this study includes variables such as bank size, total loans and advance, expense management, revenue diversification, liquid management, capital adequacy and interest income. To comply with the research objective, the study used an appropriate econometric methodology for the estimation of variables coefficient under fixed effect regression models. The necessary data was collected from secondary source which mainly obtained from NBE and each banks through review of document analysis in order to identify and measure the determinants of banks profitability. Moreover, multiple regression analysis is adopted to investigate the determinants of banks profitability quantitatively and financial ratios were calculated and statistical tools including; (percentages, averages, the natural logarithm, correlation and descriptive analysis of variance) were used in testing the hypotheses.

To test the research hypotheses, a sample size of thirteen Ethiopian commercial banks were selected and the necessary financial data were collected for the time period of 2010 to 2015. The empirical findings of data analysis results on the determinant of Ethiopia banks profitability for the sample bank suggest the following conclusions.

First, the natural logarithm of total assets (bank size) has a positive impact on ROA with strong significance coefficient. This positive relationship is suggesting that as larger banks of the country experience more there is a significant increase in profitability through economies of scale. From this result the researcher concludes that banks that have higher size or asset generate more profit than banks with smaller size or assets. Therefore, bank size is an important factor in determining profitability of commercial banks.

Second, as expected, the result showed a positive relationship between total loans and advance and profitability of the banks with strong statistical significance, showing that an increase in loan

and advance will result in increased profitability. Therefore, it is concluded that loan and advances are largest segments of interest bearing assets that enables the banks to generate more profit through interest income.

Third, as expected expense management has a negative impact on ROA with strong significance Coefficient. This shows that as minimizing commercial banks operating expense in Ethiopia would certainly improve the bank's profitability.

Fourth, the result showed that there is a positive relationship between revenue diversification and commercial banks profitability as expected with strong statistical significance. The coefficient of the ratio REDV is relatively the highest compared to other variables in the study, showing that an increase in noninterest income will result in increased profitability

Fifth, the output of the regression analysis also showed a positive relationship between capital adequacy and banks profitability with strong statistical significance. The coefficient of the ratio CAPA is relatively high compared with other variables, which showed that an increase in capital adequacy will result in increased bank profitability. This is in line with the expectation that 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.

Lastly, the interest income also has statistically significant and positive relationship with Commercial banks profitability. Increase in interest income leads to increase in net income and profitability of the banks. This suggests that there is possibility for the banks to increase its profits by putting more effort to increase interest income which can be achieved by finding ways of optimal utilization of bank resources deposits and reducing non performing loan. On the other hand liquidity management has positive relationship with the profitability of Ethiopian banks in this model but statistical not significant or have no impact on the profitability.

5.3 Recommendations

In order to maintain financial stability in the country, it is very vital to identify the determinants that mostly influence the overall profitability of Ethiopian commercial banks. Therefore, based on the findings of the study the following possible recommendations were forwarded:

Based on the finding of the study, profitability of Ethiopian commercial banks mainly affected by the internal factors included in the study. Since the management of the bank has control over the bank specific factors, it is possible to improve the profitability of the bank by giving more attention on the identified factors such as, revenue diversification, expense management, interest income, bank size, capital adequacy and loan. Therefore management bodies of Ethiopian commercial banks should strive to strengthen the bank specific factors like revenue diversification, expense management, interest income, bank size, capital adequacy and loan. Since, they are found to be the most significant factors that affect profitability of Ethiopian commercial banks.

- ✓ It is better for commercial banks of Ethiopia to improve and diversify their noninterest income sources such as guarantee serves, letter of credit, currency exchange and other service charge and commission collection methods because, this source of income is more crucial during loan default risk. In addition, Ethiopian commercial banks can improve their fee based income by introducing new innovative products and services to make them best financial performer.
- ✓ Commercial banks of Ethiopian are recommended to increase their interest income by disbursing more loans and improving loan collection mechanisms such as lending for feasible projects and holding collateral. Beside this, bank managers should reduce their operating expenses in order to maximize profitability of the banks. This implying that Commercial banks need to invest on efficient management and technologies that reduce costs of operations in order to enhance their performance
- ✓ Some commercial banks should strive to Strengthening their capital amount through mobilizing funds by selling more shares to existing shareholders as well as new entrants to the banking industry investment through considering dilution effect.
- ✓ As loan is one of the significant factors affecting profitability, banks should increase the amount of loan given to their customers as this has potential of increasing their performance which can be achieved by working on deposit mobilization. Therefore, banks need to develop a strategy that enables them to collect large amount of deposits.

Finally, the study sought to investigate determinants of commercial banks profitability in Ethiopia. However, the variables used in the statistical analysis did not include all of the factors that can affect Ethiopian banks profitability. Thus, future research researchers may include the rest unseen bank specific and macroeconomic variables.

References

- Abdelkarim A.(2013). The impact of Managerial Factors on Commercial Bank Profitability: Empirical Evidence from Jordan. *International Journal of Accounting, Finance and Management science*.
- A.M.Bashir (2012), Determinant of Profitability in Islamic Banks: Some Evidence from the Middle East, *Islamic Economic Studies*, 11(1), 31-57.
- Abreu M. and V. Mendes., (2002).*Commercial bank interest margins and profitability: evidence From E.U countries*” Porto Working paper series.
- Aburime, U.T., (2008).Impact of Political Affiliation on Bank Profitability in Nigeria. *African Journal of Accounting, Economics, Finance and Banking Research*, pp 61-75
- Abuzar M.A. (2013). Internal and external determinants of profitability of Islamic banks in Sudan: Evidence from panel data, *Afro-Asian J. of Finance and Accounting*, 2013 pp. 393) 222 – 240.
- Akhavein, J.D., Berger, A.N., Humphrey, D.B., (1997). *The Effects of Mergers on Efficiency And Prices: Evidence from a Bank Profit Function*. Finance and Economic Discussion Series 9, Board of Governors of the Federal Reserve System.
- Alexiou, C., & Sofoklis, V. (2009).*Determinants of Bank Profitability*”, *Evidence from Greek Banking industry*.Economic Annals.
- Alkassim FA (2005). “*The profitability of Islamic and conventional banking in the GCC Countries: A Comparative study*.”
- Amdemikael, A. (2012). *Factors Affecting Profitability of Ethiopian Banking Industry*”, Msc Thesis, Addis Ababa University
- Ani, W. U., Ugwunta, D. O., Ezeudu, I. J. and Ugwuanyi, G. O, (2012).An empirical assessment Of the determinants of bank profitability in Nigeria: Bank characteristics panel evidence. *Journal of Accounting and Taxation* 4(3), pp. 38-43.
- Athanasoglou PP, Delis MD, Staikouras CK (2006). “*Determinants of Bank Profitability in the South Eastern European Region*” Munich Personal RePEc Archive MPRA Paper No 10274.

- Athanasoglou, P. Brissimis, S. and Delis, M. 2008, *bank specific, industry specific and macro Economic determinants of bank profitability*.18 (2), pp.121-136
- Badi H. Baltagi, *Econometrics*, Springer-Verlag, New York, 1998, p. 111
- Baltagi, B. H. (2005). *Econometric analysis of Panel data (3rd ed. Ed)*.John wiley and sons Ltd
- Barros, C., Ferreira, C., and Williams, J, (2007) .Analyzing the determinants of performance of Best And Worst European banks: A mixed logit approach. *Journal of Banking & Finance* 31, 2189-2203
- 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*, pp 404-31
- Berger A. (1995). “The relationship between capital and earnings in banking”, *Journal of Money, Credit and Banking*, pp 404-31.
- Birhanu 2012, determinants of commercial banks profitability: empirical evidence from the commercial banks of Ethiopia, MSc project paper, Addis Ababa University
- Bourke P (1989). , Concentration and Other Determinants of Bank Profitability in Europe, North America and Australia“, *J. Bank.Financ.13 (1):65-79*.
- Boyd JH, Runkle DE (1993).Size and Performance of Banking Firms. Testing the Predictions of Theory,” *J. Monet. Econ.31:47-67*
- Brooks, C. (2008). *Introductory Econometrics for Finance* (2nd edition Ed).Newyork, Cambridge University press
- Burns A.F. and Mitchel, W.C. (1946), *Measuring Business Cycles*, National Bureau of Economic Research, New York
- Creswell J. W 2009, *Research design: Qualitative and quantitative approaches*, 3rd ed, Sage Publications, London UK.
- Cooper, D. C., & Schindler, P. S. (2009). *Business Research Methods*. 9th edn.Tata McGraw-Hill. New Delhi.
- Churchill, G A and Iacobucci, D (2005), *Marketing Research: Methodological Foundations*, 9th

Edn.Thomson South-Western, USA

- Damena, 2011, *Determinants of commercial banks profitability: an empirical study on Ethiopian commercial banks*, MSc project paper, Addis Ababa University.
- Demerguc-Kunt & Huizinga H, (1999), *Determinants of commercial bank interest margins and Profitability: some international evidence*, World Bank Economic Review, pp. 379-408
- Demerguç-Kunt A and H. Huizinga.,(2001) “*Financial Structure and Bank Profitability*” in *Financial Structure and Economic Growth: A Cross-Country Comparison of Banks, Markets, and Development*, Eds. Asli Demirguc-Kunt and Ross Levine .Cambridge, MA: MIT Press
- Dietrich, A., and Wanzenried, G.,(2011). Determinants of bank profitability before and during The Crisis: Evidence from Switzerland. *Journal of International finance markets, Institutions Money* .Doi: 0.1016
- Ezra, M., (2013).Determinants of Commercial Bank Profitability in Sub-Saharan Africa” *International Journal of Economics and Finance*.
- Flamini, V, McDonald, C & Schumacher, L (2009).*Determinants of commercial bank Profitability in Sub-Saharan Africa*, IMF Working Paper, pp. 1-30.
- Goddard, J., Molyneux, P. and Wilson, J., (2004).*The profitability of European banks: A cross Sectionally and dynamic panel analysis*, The Manchester School, 72(3), 363-381
- Gujarati, D. N.,(2004).*Basic Econometrics* (edition ed., Vol. 4th).MacGraw-hill Companies.
- Gul, S., Faiza, I., & Khalid, Z.,(2011) .Factors Affecting Bank Profitability in Pakistan. *The Romanian Economic Journal*,2(3), pp. 6-9.
- Guru B.K. Staunton J. and Balashanmugam B. (1999), *Determinants of Commercial Bank Profitability in Malaysia*, Sydney, Australia, 16-17 December
- 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

- Hausman, J. A and W. Taylor (1981) .Panel data and unobserved individual effects
. *Econometrics*, 49 (6), 1377-1398
- Havrylchyk, Olena, and Emilia Jurzyk, (2006) .*Profitability of foreign banks in Central and Eastern Europe: Does the entry mode matter?* Bank of Finland, BOFIT Discussion Papers 5
- Imad Ramadan Z, Qais Kilani A, Thair Kaddumi A (2011). Determinants of Bank Profitability: Evidence from Jordan, *Int. J. Acad. Res.* 3(4):180-191
- J.W.Scott, and J.C Arias, Banking Profitability Determinants, *Business Intelligence Journal*, 4(2) (2011), 209-230.
- Javaid, S., Anwar, J., Zaman, K and Gaffor, A. (2011).Determinants of Bank Profitability in Pakistan Internal Factor Analysis, *Mediterranean Journal of Social Sciences*, 2(1):59-78.
- Javaid S, Anwar J, Zaman K, Ghafoor A (2011). *Determinants of Bank Profitability in Pakistan: Internal Factor Analysis*, J. Yasar Univ. 23(6):3794-3804.
- Krakah, A. K. &Ameyaw, A. 2010, *the Determinants of Bank's Profitability in Ghana*, The Case of Merchant Bank Ghana Limited (MBG) and Ghana Commercial Bank (GCB),A master's thesis in business administration.
- Khrawish, H. A. (2011). Determinants of Commercial Banks Performance: Evidence from Jordan. International Research.Zarqa University, *Journal of Finance and Economics*, 5(5), pp.19-45
- Kosmidou, Tanna & Pasiouras.,(2006). *Determinants of profitability of domestic UK Commercial Banks*: Panel evidence from the period 1995-2002
- Kosmidou, K. (2008). The determinants of Bank's profit in Greece during the period of EU Financial Integration, *Managerial Finance (Issue, 34)*, pp. 146 - 159.
- Lamarana, M.,(2012).*Financial Performance of the Malaysian Banking Industry* Domestic vs Foreign Banks, Eastern Mediterranean University
- M.A.Eljelly, Internal and external determinants of profitability of Islamic banks in Sudan:

- Evidence .From panel data, *Afro-Asian Journal of Finance and Accounting* 3(3) (2013), 222-240
- Molyneux P, Thorton J (1992). “*Determinants of European Bank Profitability; A Note*” J. Bank Finance .16:1173-1178
- Molyneux, P. and W. Forbes (1995) Market Structure and Performance in European Banking *Applied Economics* 27(2): 155-159
- Murundo ,M. (2008). ‘*Successful commercial lending from the ground up*’. Bottom line, 7(2): 12-14.
- Naceur SB, Goaid M (2001). “*The Determinants of Commercial Bank Interest Margin and Profitability: Evidence from Tunisia*” Working paper 856365
- Nsambu K.F.(2014) . Factors affecting performance of commercial Banks in Uganda: a case for Domestic commercial banks .*Proceedings of 25th international Business Research Conference* 13-14 Jan, 2014
- Obamuyi, T. M., (2013). Determinants of bank`s profitability In developing economy: Evidence From Nigeria .*Organization and markets in emerging economy*, 2(8) 97-111
- 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
- Rumler, F & Waschiczek, W (2010) .*The impact of economic factors on bank profits*“, Monetary Policy & the Economy, pp49-67
- S.S.Bintawim, *Performance Analysis of Islamic Banking: Some Evidence from Saudi Arabian Banking*, Ritsumeikan Asia Pacific University (APU) (MBA Program), (2011), P.3
- Said, R. M., & Mohd, H. T., (2011).*Performance and Financial Ratios of Commercial Banks in Malaysia and China*
- Sehrish Gul, Faiza Irshad and Khalid Zaman (2011) Factors Affecting Bank Profitability in

- Sinkey, J. J. (1992). *Commercial bank financial management in the financial services industry*
N.Y: Macmillan Publishing Company
- 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
- Sufian, F,& Shah, M. (2009).Determinants of Bank Profitability in a Developing Economy“ Empirical Evidence from Bangladesh .*Journal of Business Economics and Management*
- 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
- Susan Moraa Onuonga (2014). The Analysis of Profitability of Kenya`s Top Six Commercial Banks: Internal Factor Analysis. *American International Journal of Social Science*
- Syafri, (2012) .Factors Affecting Bank Profitability in Indonesia .The 2012 *International Conference on Business and Management 6 – 7 September 2012, Phuket – Thailand*
- Tregenna, F. (2009).Fat years: the structure and profitability of the US banking sector in the pre-Crisis period, *Cambridge Journal of Economics*, vol. 33, no. 4, pp. 609-632
- Trujillo-Ponce A (2012), what determines the profitability of banks? Evidence from Spain, *Working papers, Pablo de Olavide University*
- Vong, P. I. and Chan, H. S., (2006).Determinants of Bank Profitability in Macau“, *Journal of Banking and Finance*.
- Wooldridge, JM (2006), *Introductory Econometric: A Modern Approach*. International Student Edition, Canada: Thomson South–Western.
- Yadollahzadeh, N., Ahmadi.M. & Soltan, M. (2013).*The Effective Factors on profitability of Commercial Banks in Iran”* .World of Sciences Journal
- Yesegat, AW (2009), „Value added tax in Ethiopia: a study of operating costs & compliance“, PhD Thesis, University of New South Wales.

Annex- 1

Appendix –I: Summary of ratio data

Year	Bank	ROA	BANKS	LOAN	EXPM	REDV	LIQM	CAPA	IINCOME
2010	CBE	0.0265	10.87033	0.32374	0.012702	0.02361	0.28553	0.07488	0.03697
2011	CBE	0.0251	11.05791	0.31489	0.014348	0.02549	0.35686	0.05480	0.03572
2012	CBE	0.0342	11.20089	0.39237	0.012378	0.03067	0.2153	0.04864	0.04221
2013	CBE	0.031	11.29470	0.36298	0.014136	0.02245	0.23295	0.04589	0.04840
2014	CBE	0.02780	11.38095	0.36297	0.016942	0.02163	0.16208	0.04457	0.04990
2015	CBE	0.0288	11.48229	0.35736	0.017267	0.01983	0.15443	0.0425	0.05524
2010	DB	0.0262	10.09179	0.40870	0.020876	0.03899	0.51805	0.09093	0.03907
2011	DB	0.0307	10.16613	0.42412	0.022308	0.04628	0.52577	0.09525	0.04118
2012	DB	0.0372	10.24353	0.46369	0.024079	0.04724	0.41055	0.10433	0.05124
2013	DB	0.0307	10.29550	0.44879	0.026028	0.04031	0.38236	0.10359	0.05169
2014	DB	0.0324	10.34168	0.42936	0.027968	0.04572	0.37004	0.11828	0.05194
2015	DB	0.0294	10.39382	0.46548	0.035704	0.04446	0.27909	0.11807	0.05711
2010	AIB	0.0312	9.90008	0.39594	0.022775	0.04826	0.66207	0.11836	0.03818
2011	AIB	0.0357	10.00500	0.39408	0.021057	0.05267	0.52275	0.12932	0.03902
2012	AIB	0.03304	10.07688	0.46115	0.02473	0.03703	0.34336	0.13491	0.05602
2013	AIB	0.03416	10.17198	0.51888	0.031902	0.04028	0.2847	0.13535	0.05991
2014	AIB	0.03086	10.30165	0.45816	0.030808	0.04154	0.33647	0.12609	0.05438
2015	AIB	0.02704	10.37785	0.52293	0.033553	0.03517	0.20961	0.12947	0.06123
2010	BOA	0.0224	9.79793	0.50215	0.023138	0.03297	0.57639	0.09324	0.04170
2011	BOA	0.0249	9.86201	0.45558	0.026925	0.03380	0.47667	0.09079	0.05112
2012	BOA	0.0263	9.91590	0.47301	0.027435	0.02738	0.37261	0.11003	0.06038
2013	BOA	0.0214	10.00558	0.46420	0.022316	0.02227	0.23201	0.10935	0.04911
2014	BOA	0.0397	10.05217	0.44881	0.030621	0.03998	0.3019	0.13559	0.06511
2015	BOA	0.0213	10.13569	0.43206	0.033826	0.02587	0.56424	0.13247	0.06245
2010	WB	0.03890	9.75906	0.43084	0.029967	0.05540	0.77387	0.18317	0.04306
2011	WB	0.04010	9.90639	0.3610	0.031832	0.06204	0.69511	0.16590	0.03906
2012	WB	0.04028	9.92154	0.42717	0.030193	0.04894	0.48468	0.19218	0.05291
2013	WB	0.03303	10.01677	0.45124	0.03135	0.03518	0.36754	0.17611	0.05633
2014	WB	0.0271	10.05087	0.40955	0.038963	0.03636	0.21341	0.19072	0.05870
2015	WB	0.02570	10.13708	0.44284	0.042483	0.03447	0.24787	0.17609	0.06226
2010	UB	0.0296	9.77057	0.44327	0.026914	0.04403	0.69309	0.10813	0.04257
2011	UB	0.03	9.88793	0.42417	0.021121	0.03775	0.58677	0.11667	0.04386
2012	UB	0.03390	9.94383	0.46494	0.025769	0.03561	0.42363	0.12538	0.05903
2013	UB	0.0214	9.99903	0.47213	0.035366	0.03052	0.25573	0.12038	0.06029
2014	UB	0.0167	10.07468	0.42687	0.033744	0.02054	0.38005	0.13264	0.06031
2015	UB	0.0196	10.15718	0.47769	0.041073	0.02687	0.23071	0.11742	0.06602
2010	LIB	0.02930	9.13469	0.42827	0.030208	0.04008	0.72772	0.17732	0.04134
2011	LIB	0.02420	9.25722	0.37405	0.028801	0.03609	0.70349	0.19519	0.04191

2012	LIB	0.0306	9.39147	0.39409	0.030359	0.04218	0.59833	0.17934	0.04698
2013	LIB	0.0379	9.46871	0.44795	0.030772	0.04353	0.46704	0.18418	0.05742
2014	LIB	0.0267	9.55791	0.42652	0.038994	0.03679	0.42051	0.17375	0.05787
2015	LIB	0.02570	9.76785	0.48308	0.052384	0.05326	0.34447	0.14031	0.05578
2010	CBO	0.0142	9.24756	0.40817	0.036778	0.03030	0.62072	0.10688	0.04237
2011	CBO	0.01890	9.39804	0.32068	0.03239	0.03893	0.61457	0.09831	0.03797
2012	CBO	0.0278	9.56475	0.37690	0.028595	0.03594	0.44184	0.11366	0.04687
2013	CBO	0.0313	9.81549	0.32362	0.028958	0.04602	0.761	0.10644	0.03665
2014	CBO	0.0467	9.86635	0.49572	0.041625	0.06252	0.33897	0.14833	0.05745
2015	CBO	0.0273	10.05926	0.57285	0.053013	0.04575	0.33075	0.12309	0.06122
2010	NIB	0.0336	9.77601	0.42645	0.030409	0.04861	0.74338	0.15351	0.04460
2011	NIB	0.0347	9.85196	0.38902	0.027161	0.04553	0.70659	0.16461	0.04681
2012	NIB	0.0346	9.91780	0.44817	0.026347	0.03937	0.51055	0.18463	0.05240
2013	NIB	0.0327	9.96116	0.49680	0.030025	0.03069	0.33881	0.18218	0.06239
2014	NIB	0.0277	10.03130	0.50317	0.02564	0.02612	0.24182	0.18278	0.05308
2015	NIB	0.0254	10.12242	0.52006	0.035264	0.02419	0.18392	0.16425	0.06699
2010	ZB	0.04830	9.02351	0.36369	0.039835	0.09735	0.88826	0.15024	0.02959
2011	ZB	0.05250	9.20775	0.39991	0.034383	0.09733	0.60816	0.14919	0.03758
2012	ZB	0.0361	9.37917	0.42297	0.032237	0.06841	0.50204	0.11720	0.04295
2013	ZB	0.029	9.51168	0.42163	0.05563	0.07848	0.44832	0.15191	0.04621
2014	ZB	0.0469	9.59381	0.36434	0.030654	0.06365	0.49285	0.16729	0.05234
2015	ZB	0.0314	9.68792	0.44246	0.033801	0.04912	0.30192	0.15683	0.05387
2010	OIB	0.0172	9.04866	0.32987	0.038909	0.04459	0.76578	0.18954	0.02716
2011	OIB	0.0227	9.29269	0.33729	0.03256	0.04641	0.55678	0.15088	0.03164
2012	OIB	0.0178	9.44520	0.36579	0.039023	0.03835	0.52295	0.15702	0.04392
2013	OIB	0.0171	9.59231	0.41451	0.04555	0.03519	0.39385	0.14001	0.05007
2014	OIB	0.025	9.78899	0.41153	0.038784	0.03558	0.37258	0.12168	0.05309
2015	OIB	0.0226	9.97931	0.49362	0.041055	0.02586	0.22974	0.10333	0.05423
2010	BUIB	0.00010	8.68134	0.40044	0.037456	0.02395	1.04277	0.35221	0.01756
2011	BUIB	0.0249	8.89265	0.46897	0.043023	0.05049	0.76969	0.29761	0.04362
2012	BUIB	0.02040	9.13514	0.47760	0.034876	0.03439	0.44674	0.21026	0.04627
2013	BUIB	0.0217	9.32806	0.44607	0.030328	0.02382	0.37536	0.17585	0.05681
2014	BUIB	0.0265	9.47885	0.44599	0.044198	0.03837	0.41526	0.17157	0.05995
2015	BUIB	0.0299	9.65318	0.53736	0.046731	0.03863	0.23407	0.15061	0.06851
2010	BIB	-0.0158	8.57923	0.40366	0.032781	0.00638	0.82714	0.26971	0.01542
2011	BIB	0.0232	8.96085	0.36312	0.025714	0.03626	0.76194	0.16409	0.03731
2012	BIB	0.0262	9.10891	0.38875	0.0269	0.04008	0.60976	0.18376	0.04500
2013	BIB	0.0241	9.34189	0.44550	0.022842	0.02516	0.46441	0.17364	0.03962
2014	BIB	0.01600	9.44924	0.42108	0.041288	0.03070	0.48792	0.19707	0.05963
2015	BIB	0.0249	9.62034	0.44955	0.038824	0.03892	0.40523	0.17421	0.05042