DETERMINANTS OF COMMERCIAL BANKS PROFITABILITY: THE CASE OF ETHIOPIAN COMMERCIAL BANKS

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Statement of certification

This is to certify that Samuel Alemu has carried out this research work on the topic entitled "Determinants of commercial banks profitability: The case of Ethiopian commercial banks" under my supervision. This work is original in nature and it is sufficient for submission for the partial fulfillment for the award of MSc. in Accountingand Finance.

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ABSTRACT

Determinants of Commercial Banks Profitability: The case of Ethiopian Commercial Banks

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Banks are the most crucial financial intermediaries in the economy and economy that have profitable banking industry are better able to withstand negative shock and contribute to the stability of the whole economy. The purpose of this study is to investigate determinants of commercial banks profitability in Ethiopia by using panel data of eight commercial banks from year 2002 to 2013. The study used mixed research approach and secondary financial data are analyzed by using multiple linear regressions models for the bank profitability measure, Return on Asset (ROA). Fixed effect regression model was applied to investigate the impact of bank size, capital adequacy, liquidity risk, operating efficiency, management efficiency, employee efficiency, funding cost, banking sector development, real GDP, inflation rate and foreign exchange rate on Return on Asset (ROA) and also primary data was used to support the result of the documentary analyses. The findings of the study show that bank size, capital adequacy and gross domestic product have statistically significant and positive relationship with bank's profitability. On the other hand, variables like liquidity risk, operational efficiency, funding cost and banking sector development have a negative and statistically significant relationship with banks' profitability. However, the relationship for Management efficiency, employee efficiency, Inflation and foreign exchange rate is found to be statistically insignificant. The study suggests that focusing and reengineering the banks alongside the key internal drivers could enhance the profitability as well as the performance of the commercial banks in Ethiopia.

Key words: profitability, commercial banks

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Table of Contents

List of Figures

List of Tables

List of Acronyms

AIB Awash International Bank

BoA Bank of Abyssinia

BJ Bera-Jarque

BLUE Best Linear Unbiased Estimators

BSD Banking Sector Development

CAP Capital adequacy

CBB Construction and Business Bank

CBE Commercial Bank of Ethiopia

CAMEL Capital adequacy, Asset quality, Management quality, Earning quality, Liquidity

CLRM Classic Linear Regression Methods

DW Durbin-Watson

EME Employee Efficiency

EPRDF Ethiopian People Revolutionary Democratic Front

FDC Funding Cost

FEM Fixed Effect Model

FER Foreign Exchange Rate

GCC Gulf Cooperation Council

GDP Gross Domestic Product

HP Hypotheses

INFL Inflation

LIQ Liquidity Risk

MGE Management Efficiency

NBE National Bank of Ethiopia

NIB Nib International Bank

OLS Ordinary Least Square

OPE Operating Efficiency

REM Random Effect Model

ROA Return on Asset

ROE Return on Equity

RQ Research Question

SIZE Bank Size

UB United Bank

WB Wegagen Bank

Chapter One

1 Introduction

1.1Background of the study

Banks mobilize, allocate and invest the greatest part of the economic agent‟s savings. Accordingly, their performance has substantial consequences on capital allocation, firm expansion, industrial growth and economic development. Therefore, efficiency and profitability of banks is of interest not just at the individual bank level, but also is important at a broader macroeconomic level.

The main role of the financial system is to channel the funds from savers to borrowers. If this process is done efficiently, than the profitability should improve, the flow of funds should increase, too, and there should be better quality services for customers. Indeed, financial intermediation determines, among other factors, the efficient allocation of savings, as well as the return on savings and investments Aremu and Mejabi (2013). In the developed nations, financial markets and the banking system work in unison to achieve this main purpose. Unlike this, in the developing countries financial markets are usually underdeveloped and undersized so in that case the banks fill in the gap between borrowers and savers and provide the profitable and secure funds channeling. Taking in to consideration that savings and investments are among the most important determinants of economic growth, the health of the general economy of a country is in a great way dependent on the well-functioning financial system. That is especially true for countries like Ethiopia, where the banking sector is the backbone of the economy. Ethiopia financial sector is characterized by the dominant role of the commercial banks.

There are plenty aspects of banks which could be analyzed, but this study focus specifically on bank profitability. Profitability is a reflection of how banks are run, given the environment in which they operate. More precisely, it should mirror the quality of a bank‟s management and the shareholder‟s behavior, the bank‟s competitive strategies, efficiency and risk management capabilities Aburime (2007). Profits affect bank‟s cost of raising capital in both ways, as a direct contributor to equity financing and as indicator for external investor‟s assessment of the financial strength of the bank. Moreover, even if solvency is high, poor profitability weakens the bank‟s capacity to absorb negative shocks, which will eventually affect solvency. Overall, healthy and

sustainable profitability is vital in maintaining the stability of the banking system and contributes to the state of the financial system. Therefore, the determinants of bank performance have attracted the interest of academic research as well as of bank management, financial markets and bank supervisors.

The determinants of profitability are empirically well explored although the definition of profitability varies among studies. Disregarding the profitability measures, most of the banking studies have noticed that both the internal environment of the organization and external environment are important drivers of high profitability. Therefore in this study, the drivers that would be considered are in two categories namely internal and external drivers or factors of Profitability.

Internal drivers of bank performance or profitability can be defined as factors that are influenced by a bank‟s management decisions. Such management effects will definitely affect the operating results of banks. Although a quality management leads to a good bank performance, it is difficult, if not impossible, to assess management quality directly. In fact, it is implicitly assumed that such a 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. 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).

In the context of the above discussions, the purpose of this study is to assess factors affecting the financial performance (profitability) of banks in Ethiopia. The remaining discussions in the chapter are arranged in ten sections. The first section, section 1.1 presents an overview of the economic role of commercial banks as a background for the research. Section 1.2 presents an overview of Ethiopian banking history. Section 1.3 presents the problem statement. Section 1.4 presents the research objective. Section 1.5 presents the research question and hypotheses,

respectively. Section 1.6 presents conceptual frame work of the study. Section 1.7 presents the research methodology of the study. Section 1.8 presents the scope of the study and limitation of the study respectively. Section 1.9 presents the significance of the study. Finally, the organization of the study is discussed in section 1.10

1.2 Overview of banking history in Ethiopia

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, the first bank called Bank of Abyssinia was inaugurated in Feb.16, 1906 by the Emperor. The Bank was totally managed by the Egyptian National Bank.

Generally, in its short period of existence, Bank of Abyssinia had been carrying out limited business such as keeping government accounts, some export financing and undertaking various tasks for the government. Moreover, the Bank faced enormous pressure for being inefficient and purely profit motivated and reached an agreement to abandon its operation and be liquidated in order to disengage banking from foreign control and to make the institution responsible to Ethiopia‟s credit needs. Thus by 1931 Bank of Abyssinia was legally replaced by Bank of Ethiopia shortly after Emperor Haile Selassie came to power.

The new Bank, Bank of Ethiopia, was a purely Ethiopian institution and was the first indigenous bank in Africa(NBE 2009/2010) and established by an official decree on August 29, 1931 with capital of £750,000. Bank of Egypt was willing to abandon it‟s on cessionary rights in return for a payment of Pound Sterling 40,000 and the transfer of ownership took place very smoothly and the offices and personnel of the Bank of Abyssinia including its manager, Mr. Collier, being retained by the new Bank. Ethiopian government owned 60 percent of the total shares of the Bank and all transactions were subject to scrutiny by its Minister of Finance.

Bank of Ethiopia took over the commercial activities of the Bank of Abyssinia and was authorized to issue notes and coins. The Bank with branches in Dire Dawa, Gore, Dessie, Debre Tabor, Harar, agency in Gambella and a transit office in Djibouti continued successfully until the Italian invasion in 1935. During the invasion, the Italians established branches of their main

Banks namely Banco di Italia, Banco di Roma, Banco di Napoli and Banco Nazionale del lavoro and started operation in the main towns of Ethiopia. However, they all ceased operation soon after liberation except Banco di Roma and Banco di Napoli which remained in Asmara. In 1941 another foreign bank, Barclays Bank, came to Ethiopia with the British troops and organized banking services in Addis Ababa, until its withdrawal in 1943. Then on 15th April 1943, the State Bank of Ethiopia commenced full operation after 8 months of preparatory activities. It acted as the central Bank of Ethiopia and had a power to issue bank notes and coins as the agent of the Ministry of Finance. In 1945 and 1949 the Bank was granted the sole right of issuing currency and deal in foreign currency. The Bank also functioned as the principal commercial bank in the country and engaged in all commercial banking activities.

The State Bank of Ethiopia had established 21 branches including a branch in Khartoum, Sudan and a transit office on Djibouti until it ceased to exist by bank proclamation issued on December, 1963. Then the Ethiopian Monetary and Banking law that came into force in 1963 separated the function of commercial and central banking creating National Bank of Ethiopia (NBE) and commercial Bank of Ethiopia (CBE). Moreover it allowed foreign banks to operate in Ethiopia limiting their maximum ownership to be 49 percent while the remaining balance should be owned by Ethiopians.

There were two other banks in operation namely Banco di Roma S. C. and Bank of di Napoli S.C. that later reapplied for license according to the new proclamation each having a paidup capital of Eth. Birr 2 million.The first privately owned bank, Addis Ababa Bank S.C., was established on Ethiopians initiative and started operation in 1964 with a capital of 2 million in association with National and Grindlay Bank, London which had 40 percent of the total share. In 1968, the original capital of the Bank rose to 5.0 million and until it ceased operation, it had 300 staff at 26 branches.

There were other financial institutions operating in the country like the Imperial Savings and Home Ownership Public Association (ISHOPA) and Saving and Mortgage Corporation of Ethiopia (SMCE). But following the declaration of socialism in 1974 the government extended its control over the whole economy and nationalized all large corporations. Organizational setups were taken in order to create stronger institutions by merging those that perform similar

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

Following the fall of the Dergue regime in 1991 that ruled the country for 17 years under the rule of command economy, the EPRDF declared a liberal economy system. In line with this, Monetary and Banking proclamation of 1994 established the National Bank of Ethiopia as a judicial entity, separated from the government and outlined its main function.

Monetary and Banking proclamation No.83/1994 and the Licensing and Supervision of Banking Business No.84/1994 laid down the legal basis for investment in the banking sector. Consequently after the proclamation issued private equity holders began to join the Ethiopian banking industry and as of (January, 2015) eighteen commercial banks are operated and out of this sixteen are private owned.

Table 1.1 Lists of public and private Commercial Banks in Ethiopia

S.N	Name of bank	Year of esta	No of Branch	Ownership
1	Commercial Bank of Ethiopia (CBE)	1963	744	Public
2	Construction & Business Bank (CBB)	1983	106	Public
3	Awash International Bank S.C (AIB)	1994	120	Private
4	Dashen Bank S.C (DB)	1995	112	Private
5	Bank of Abyssinia S.C (BoA)	1996	90	Private
6	Wegagen Bank S.C (WB)	1997	84	Private
7	United Bank S.C (UB)	1998	80	Private
8	Nib International Bank S.C (NIB)	1999	72	Private
9	Cooperative Bank of Oromia S.C (CBO)	2005	74	Private
10	Lion International Bank S.C (LIB)	2006	49	Private
11	Oromia International Bank S.C (OIB)	2008	65	Private
12	Zemen Bank S.C (ZB)	2009	8	Private
13	Bunna International Bank S.C (BIB)	2009	35	Private
14	Berhan International Bank S.C (BBI)	2010	22	Private
15	Abay Bank S.C. (AB)	2010	47	Private
16	Addis international Bank SC. (AdIB)	2011	11	Private
17	Debub Global Bank S.C. (DGB)	2012	14	Private
18	Enat Bank S.C. (EB)	2013	2	Private

Source NBE annual report 2013/14

1.3 Problem Statement

It is widely believed that financial system plays a vital role in the economic growth and development of a country. The importance of an efficient financial sector lies in the fact that, it ensures domestic resources mobilization, generation of savings, and investments in productive sectors. In fact, it is the system by which a country directs it‟s most profitable and efficient sectors to most productive sources of future growth. The main role of a financial system is not only to transfer funds from savers to investors but also to ensure that funds are being transferred to the sectors which are most important for an economy. Banks are the most crucial financial intermediaries in most economies that render a bundle of different services. Economies that have

a profitable banking sector are better able to withstand negative shocks and contribute to the stability of the financial system (Athanasoglou, Brissimisand Delis 2008). On the other hand banks insolvencies can result in systemic crisis. Therefore, it is important to understand the factors which really affect the banking sector‟s profitability.

The financial sector of Ethiopia, like most in developing countries, is dominated by banking industry. Following the 1974 popular revolution all privately owned financial institutions including three commercial banks, thirteen insurance companies and two non-bank financial intermediaries were nationalized on 1 January 1975. The nationalized banks were reorganized and one commercial bank (the Commercial Bank of Ethiopia), a National Bank (recreated in 1976), two specialized banks the Agricultural and Industrial Bank – recently renamed as the Development Bank of Ethiopia (since 2003) and Housing and Savings Bank – recently renamed as the Construction and Business Bank (1994) as well as one insurance company – Ethiopian Insurance company were formed. The aim of the government was to channel funds to the public sector and to prioritize credit to those sectors that sought to reconstruct the poverty-affected country mainly industries and agricultural sectors. However, their performance was not satisfactory in terms of profitability, customer service and overall performance(NBE 2009/2010). After the change in government in 1991 the new direction in economic policy (especially after 1992), these financial institutions are being reorganized to work in a market oriented policy framework. Besides, new privately owned financial institutions are also being allowed to work along with the publicly owned ones.

At present private commercial banks are dominant in respect of numbers and efficiency in the banking sector of Ethiopia. Commercial banks in Ethiopia have gone into significant changes after the liberalization of the banking system. The reforms removed barriers to entry of commercial banks and supported the improvement of institutional framework and more efficiently the performance of commercial banks, with this it has affected the profitability of commercial banks and increased banking competition even it‟s infant stage when we compare the industry even to other developing countries. Profitability of commercial banks is pro foundation for product innovation, diversification and efficiency of the commercial banks (Hempell 2002).

Thus the stability of commercial banks as whole in the economy depends on profitability level. More profitability level has tendency to absorb risks and shocks that commercial banks can face. Moreover profitability is the perquisite condition for the efficiency of commercial banks. Empirical evidence from Chijoriga (1997) has showed that the soundness of commercial banks performance depends on profitability. Francis (2007) has indicated that markets reforms in the Sub-Saharan Africa has worsen the profitability of commercial banks due to high level of non-performing loans. Profitability of commercial banks is important for the efficiency of commercial banks.However, there is improvement in profitability from time to time Ethiopian banks‟‟ performance has still remained poor with substantial gaps in service delivery to private agents, particularly to the rural and lower-income population. This is clearly indicated in the NBE (2008/09) annual report which states as one branch of a bank on the average is estimated to serve around 126,258 people, which is way below even at the SSA standard. This high people to bank branch ratio indicated that as Ethiopian banks performance is still poor in terms of outreach even as compared to the SSA standards where the performance is significantly poor. This very limited access to basic payment services or saving accounts clearly indicates as the industry is performing poorly.

In addition, as noted in Amdemikael (2012) Ethiopian banking industry is characterized by a quite high liquidity, which is well above the statutory requirement of 20 percent, high level of nonperforming loans, and failure to adopt new technologies to improve the efficiency of their services; among others which are the direct indicators of low performance when measured in terms of profitability as far as all of the above mentioned factors affect profitability negatively. Moreover, fear of risky investments by Ethiopian banks which may result in greater amount of profit for them and lack of active secondary stock market in the country which may reduce their investment options and their profitability as well are also clear indicators as Ethiopian banks are still not operating at their full capacity. Moreover, as noted in NBE (2009/10) annual report low contribution of the sector to Gross Domestic Product (GDP) despite the increasing contribution of the service sector to GDP is also another indicator of low performance of the sector. In general, even if Ethiopian banks looks like profitable, lack of competition, limited number of branches, poor asset quality, low efficiency, higher levels of liquidity and others clearly indicate as they are still not performing well and attaining the maximum profit that they can achieve.

All the above discussed problems in the banking industry of Ethiopia in relation to performance in general and profitability in particular along with the gap in the literature (to be established in the next chapter) with respect to profitability and the link between profitability and internal and external determinant factors call for detailed investigation. Therefore, this study seeks to fill the gap by providing full information about the internal and external factors that affects profitability by examining the untouched one, and replicating the existing in the Ethiopian context by using all commercial banks operated in the country that had 12 years data.

1.4 Broad objective and research questions

Broad objective

The main objective of this study is to identify the internal and external factors that influence profitability of Commercial Banks in Ethiopia.

Research Questions

To provide answers to the broad research objectives that are described above the following research questions are framed:

♠*What are the determinants/factors of commercial banks profitability, in the case of Ethiopian Banks?*

♠*What are the internal determinants/factors of commercial banks profitability, in the case of Ethiopian Banks?*

♠*What are the external determinants/factors of commercial banks profitability, in the case of Ethiopian Banks?*

1.5 Hypotheses of the study

In line with the broad purpose statement the following hypotheses were also formulated for investigation. Hypotheses of the study stands on the theories related to a bank‟s profitability that has been developed over the years by banking area researcher‟s and past empirical studies related to a bank‟s profitability. The results from the literature review (to be established in the next chapter) were used to establish expectations for the relationship of the different determinants. Hence, based on the objective, the present study seeks to test the following eleven hypotheses:

HO1: There is positive/negative relationship between bank size and bank's profitability.

HO2: There is positive/negative relationship between capital adequacy and bank's profitability.

HO3: There is negative relationship between liquidity risk and bank's profitability.

HO4: There is negative relationship between operating efficiency and bank's profitability.

HO5: There is positive relationship between management efficiency and bank's profitability.

HO6: There is negative relationship between employee efficiency and bank's profitability.

HO7: There is negative relationship between funding cost and bank's profitability.

HO8: There is negative relationship between banking sector development and bank profitability.

HO9: There is positive relationship between real gross domestic product and bank's profitability.

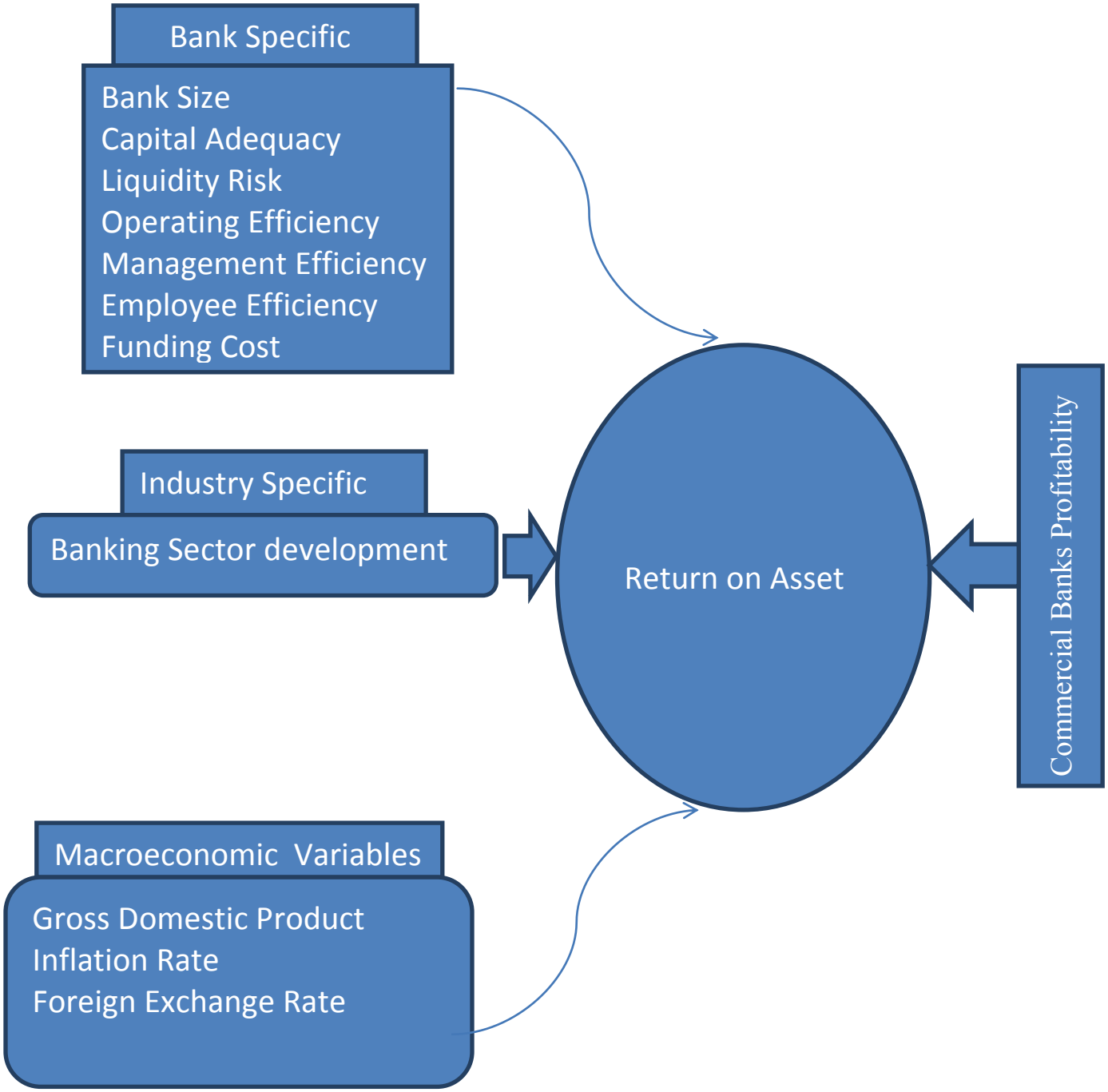
HO10: There is positive/negative relationship between inflation rate and bank's profitability.

HO11: There is positive relationship between foreign exchange rate and bank's profitability.

1.6 Conceptual framework

Different empirical evidences suggested that profitability of commercial banks influenced by internal, industrial and macro-economic factors. This study used both internal, industrial and macro-economic determinants of commercial bank profitability includes bank size, capital adequacy, Liquidity Risk, operating efficiency, management efficiency, employee efficiency, funding cost, banking sector development, real GDP, Inflation Rate and foreign exchange rate.

Figure 1.1 Relations between profitability and its determinants



1.7 Research Method Adopted

In order to achieve the main research objectives a mixed method is adopted and in order to attain the objective the study mainly use/adopts survey of document. The purpose of using such

approach is to gather data that help the researcher to investigate cause-effect relationships. In this particular study, the effect is the bank‟s profitability and the study is targeted at identifying significant causes, i.e. determinants on profitability related to internal, industry and macro-economic factors. A brief explanation about the data collection and analysis method adopted is given below.

To gather data on internal, industry and macro-economic factors and profitability, it is apparent to use survey of structured documentary review. Accordingly, to achieve its objective companies audited financial statement especially balance sheet and income statement was reviewed for internal determinants and for industry level factors and for macro-economic factors data from NBE was retrieved. For the reason that the ultimate data‟s for the study couldn‟t be found simply using questioner or face to face interviews with concerned bodies, the study was mainly depend on secondary data. On the other hand, once data were found acceptable, data entry and process was made using the E-views 7 software programme. Analysis of data was undertaken to show important relationships of variables in the study. To this end, descriptive statistics, Pearson correlation coefficient and regression analysis was used. The primary data which gathered by open - ended questionnaire was analyzed by described the responses of the respondents and use it as supportive/supplement of the survey of documents.

1.8 Scope and Limitation of the Study

1.8.1 Scope of the Study

The scope of the study is restricted to the assessment of the internal and external factors affecting bank profitability of all commercial banks that are found in Ethiopia and that have at least twelve years data (2002-2013). As a result, it includes the two large governments owned commercial banks namely, CBE, CBB. The scope of the study will also include the other six private commercial banks, AIB, DB, WB, BoA, UB and NIB.

1.8.2 Limitation of the Study

The first limitation of the study emanate from that even if there are many variables that affect commercial banks profitability the study will only concentrated on eleven variables (Bank size, capital adequacy, liquidity risk, operating efficiency, management efficiency, employee efficiency, funding cost, banking sector development, real gross domestic product, inflation rate

and foreign exchange rate). Second the respondents of the open-ended questionnaires may be interpreted subjectively through descriptions using words rather than numbers it may cause biased interpretation.

1.9 Significance of the Study

The main objective of this study is to identify the internal and external factors that influence profitability of Commercial Banks in Ethiopia. Therefore, this study is expected to provide empirical evidence on the profitability (financial performance) of Commercial banks in Ethiopia.

Furthermore, many parties would benefit from the results that will emerge from the results of the study and these parties are:

Management: Administration interested in identifying indicators of success and failure to take the necessary actions to improve the performance of the company and choose the right decisions.

Government: Government interested in knowing which companies operate successfully or failed to take the necessary measures to avoid crises of the bankruptcy in these companies.

Investors: Investors interested in such studies in order to protect their investment, and directing it to the best investment.

Customers: Customers interested in knowing the ability of Commercial banks to deposit their make deposit based on the indicators of success of the companies.

This research does have significant role to play in shading light on how to better understand what determines financial institution‟s particularly Commercial banks profitability (financial performance) in Ethiopia. Furthermore, this study does have a paramount importance in providing a better ground for bank managers, business professionals, business initiatives and policy makers. Moreover, the researcher also contributes that this study can potentially serve as a stepping stone for further research in the area.

1.10 Organization of the study

The main objective of the study is to identify the internal and external factors that influence profitability of Commercial Banks in Ethiopia. The rest of this study is organized as follows.

Chapter One: Provide some background about the study, problem statement, specifies the objectives and purpose of the study, as well as the significance and benefits gained from this research. Chapter two: The review of the literature will includes conceptual frame work of profitability, general theories of influence on bank‟s profitability, determinants of profitability, prior studies of the area and finally it describes prior studies in Ethiopia, conclusion and knowledge gap. Chapter three: This chapter describes the data, identifies the sources and explains the methodology witch is employed in the study. It also defines and highlights the profitability measures, internal and external variables used in the study.The results of the different methods used are presented in chapter four. This is followed by an analysis of the results of the different methods concurrently in chapter five. Finally, chapter six presents the conclusions and recommendations.

Chapter Two

2 Review of related literature

The study of profits is important not only because of the information it provides about the health of the bank in any given year, but also because 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. This is because a rise in profits improves the cash flow position of companies and offers greater flexibility in the source of finance for corporate investment (i.e. through retained earnings). Easier access to finance facilitates greater investment which boosts productivity, productive capacity, competitiveness and employment.

The existence, 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 increases the value of shareholders may increase to considerable extent. The term profitability refers to the ability of the business organization to maintain its profit year after year. The profitability of the organization will definitely contribute to the economic development of the nation by way of providing additional employment and tax revenue to government exchequer (the fund of a government). Moreover, it will contribute the income of the investors by having a higher dividend and there by improve the standard of living of the people.

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

Subsequent sections will build on concepts and definitions described here. In light of the above, the purpose of this chapter is to review the literatures related to bank profitability and its determinants. The review has seven sections. Section 2.1 presents conceptual frame work of bank profitability and its indicators. Section 2.2 presents general theories of influences on banks

profitability. Section 2.3 presents nature of commercial banks. Section 2.4 presents the role of banks. Section 2.5 presents determinants of commercial banks profitability. This is followed by the review of the previous studies conducted in relation to bank profitability and its determinants in section 2.6. Finally, conclusions on the literature review and knowledge gaps are presented in section 2.7

2.1 Conceptual Framework of Profitability

Profitability connotes a situation where the income generated during a given period exceeds the expenses incurred over the same length of time for the sole purpose of generating income Banwo (1997), Sanni (2006). The fundamental requirements here are that the income and the expenses must occur during the same period of time (Matching Concept) and the income must be a direct consequence of the expenses. The period of time may be one week, three months, one year etc.Sabo (2007). It is not immaterial whether or not the income has been received in cash nor is it compulsory that the expenses must have been paid in cash.

The term profit can take either its economic meaning or accounting concept which shows the excess of income over expenditure viewed during a specified period of time. On one hand, profit is one of the main reasons for the continued existence of every business organization. On the other hand, profit is expected so as to meet the required return by owners and other outsiders. John J. Hampton (2009) clarified profitability ratio as a class of financial metrics that are used to assess a business‟s ability to generate earnings as compared to its expenses and other relevant costs incurred during a specific period of time. Accordingly, the term profitability is a relative measure where profit is expressed as a ratio, generally as a percentage. Profitability depicts the relationship of the absolute amount of profit with various other factors. Similarly, Michael Koller (2011) argued that profitability is the most important and reliable indicator as it gives a broad indicator of the ability of company to raise its income level. In practice, executives define profits as the difference between total earnings from all earning assets and total expenditure on managing entire asset-liabilities portfolio Kaur and Kapoor, (2007).

For a profit-oriented organization, profit is the soul of business. The importance of profitability, therefore, stems from its being the raison (purpose) of business. A company remains in operation because it expects to make profits. Once that expectation is confirmed unattainable, the most

rational decision is to close shop or exit the business. Three indicators, namely: Return on Assets (ROA) Return on Equity (ROE) and Net Interest Margin (NIM), were identified by Ahmed (2003) to be mostly employed in the literature to measure profitability.

However, there are divergent views among scholars on the superiority of one indicator over the others as a good measure of profitability. For instance, Goudreau and Whitehead (1989) and Uchendu (1995) believed that the three indicators are all good. Hancock (1989) used only ROE to measure profitability in his study. Also, Odufulu (1994) used only the gross profit margin in measuring profitability. Ogunleye (1995) did not believe that gross profit margin could constitute a good Measure of profitability and therefore used ROA and ROE. Profitability measures, according to Akinola (2008) include Profit Before Tax (PBT), Profit After Tax (PAT), Return on Equity (ROE), Rate of Return on Capital (ROC) and Return on Assets (ROA). Sanni (2009) used Earnings Per-Share (EPS). For this study, the researcher limited profitability to the one widely used profitability measure namely Return on Asset (ROA).

2.2 General Theories of Influences on Bank's Profitability

This sub-section presents other theoretical explanations for relationships between: regulation, the Structure Conduct Performance (SCP) model, efficiency hypothesis, Capital Asset Pricing Model (CAPM), Expense-preference behavior, and Agency theory. Nevertheless, it should be mentioned that this study focuses on a broader model combining macroeconomic and bank-specific determinants of banks profitability.

2.2.1 Regulation

Besides other objectives, the main objective of regulation and supervision in the banking is to overcome the moral hazard problem in the banking sector. Without any regulation, politicians assume that value-maximizing banks take on more risks than which is optimal and acceptable for depositors. At the same time risk taking is beneficial for average individual banks, one bank failure is highly undesirable for depositors and may spill over to the entire banking sector. Regulation that requires minimum capital ratios would likely negatively influence profitability as regulation constrains value-maximizing banks in risk taking and in reaching an optimal capital structure. Furthermore, according to Saunders and Cornett (2008) the net regulatory burden could also negatively influence bank performance. The net regulatory burden equals the cost

minus the benefits of regulation. Costs of regulation are e.g. compliance costs, referring to the costs of preparing reports and statements to regulators, or costs of being restricted from an optimal portfolio or capital structure.

2.2.2 The Structure Conduct Performance (SCP) Model

The Structure Conduct Performance (SCP) model is one of the earliest frameworks used to examine the factors that determine the profitability of Banks Grygorenko (2009). According to Baye (2010), the structure of an industry refers to the factors such as technology, concentration, and market conditions. Conduct refers to how individual firms behave in the market; it involves pricing decisions (such as interest rate, commission and fees), advertising decisions, and decisions to invest in research and development, among other factors. Performance refers to the resulting profits and social welfare that arise in the market. The Structure Conduct Performance (SCP) paradigm views these three aspects of the industry as being integrally related and asserts that the market structure causes firms to behave in a certain way. In turn, this behavior causes resources to be allocated in certain ways leading to either an efficient or inefficient market. This model only fails to recognize that performance can impact on structure and conduct while structure can impact on both performance and conducts. The Structure Conduct Performance (SCP) model therefore asserts that factors external to the organizations such as market conditions are primarily and indirectly, the determinants of profitability.

Mason (1939) and Bain (1951) were the earliest to suggest that profit of firms are determined by concentration level of the market. They demonstrated that profits of firms operating in highly concentrated industries are significantly higher than that of firms operating in industries with lower concentration. The Structure Conduct Performance (SCP) paradigm presupposes that a higher banking industry concentration permits the collusion of banks to set higher prices and consequently gain substantial profits Mason, (1939), Bain (1951), Stigler (1964), Heggested (1977), Clark (1986).

2.2.3 Efficiency Hypothesis

A theoretical attempt to offer an alternative explanation on the market Structure Conduct Performance (SCP) relationship was first made by Demsetz (1973) who also proposed the Efficiency Hypothesis. He stated that higher profits of banks are not due to their collusive

behavior but because of high efficiency level, which in turn, leads to larger market shares that banks possess. In other words, profitability of bank is determined not by the market concentration but by bank efficiency Grygorenko (2009).

This hypothesis stipulates that a bank which operates more efficiently than its competitors gains higher profits resulting from low operational costs. The same bank holds an important share of the market. Consequently, differences at the level of efficiency create an unequal distribution of positions within the market and an intense concentration Mensi S and Zouari A (2010).

Smirlock (1985) performed empirical examination of the Efficiency Hypothesis where he considered market share as a proxy to efficiency. In his empirical study of 2700 banks, Smirlock (1985) was able to demonstrate that there was no association between market concentration and bank profitability while significant relationship between bank profitability and market share was present. Thus by his work, the Structure-Conduct-Performance (SCP) model was invalidated. However, Rhoades (1985) doubted the conclusion that the positive relation between market share and profitability was due to efficiency. He stated that this pattern might occur because of product diversification and correspondingly, ability of some banks to set higher prices on their services. According to Grygorenko (2009), further empirical investigations did not bring clarification to the issue as to which of the theories mentioned above is best in explaining bank profitability: Ahmad N.H and Haron S (1998) and Yu P and Neus W (2005) confirmed Structure-Conduct-Performance (SCP) theory, while Mamatzakis C and Remoundos C (2003) and Naceur (2003) found evidence for Efficient-Structure Hypothesis.

2.2.4 Capital Asset Pricing Model (CAPM)

The Capital Asset Pricing Model (CAPM) describes the relationship between risk and expected (required) return. In this model, the expected return on a firm‟s stock is defined as a function of risk-free rate and a premium based on the systematic risk. The greater the systematic risk, the greater the return the investors will expect from the security. The underlying logic behind this model and its relevance in this study is based on the fact CAPM views the total portfolio risk as a function of systematic risk and unsystematic risk. The systematic risk is attributable to factors that affect the market as a whole such as government policies, changes in the economy and the political climate. The unsystematic risk is specific to a particular company such as industrial

relations, quality of firm‟s management or a new competitor in the industry. Systematic risks cannot be avoided through diversification. However unsystematic risk can be avoided through diversification. Although the Capital Asset Pricing Model (CAPM) describes stock and portfolio risks it can be applied to firms. It asserts that in market equilibrium, a security is expected to provide return commensurate with its systematic risk. Investors should not be compensated for unsystematic risks as it assumes investors are rational and risk-averse enough to diversify unsystematic risks.

The Capital Asset Pricing Model (CAPM) has not gone unchallenged. It takes a very simplistic view of the relationship between risk and return neglecting the effects of market imperfections. As a result of these challenges it does not reflect the reality in the market. The Asset Pricing Theory (APT) extends the idea of the Capital Asset Pricing Model. This theory asserts that in a competitive market arbitrage will assure equilibrium pricing according to risk and return. The security expected return is the risk-free rate plus risk premiums for risk factors which are uncertain Horne (2008). The notion is the same as that of the Capital Asset Pricing Model (CAPM) with the exception that we now have multiple risk factors.

2.2.5 Expense-Preference Behavior

It is worth noting that profitability or bank returns is not the only measure of performance as used in the theories discussed so far. There are however other theories such as the Expense-Preference Behavior hypothesis which uses utility instead of profits as a measure of performance. In this theory it is proposed that the main goal which managers pursue is to maximize not profit but own utility or utility of the firm, which is usually achieved via increasing salaries or other staff expenses Williamson (1963). We shall go no further on the Expense-Preference Behavior - as this study is on profitability as a measure of performance.

2.2.6 Agency theory

The main theoretical explanation for the relationship between the ownership structure and profitability is based on the agency theory, first formalized by Jensen and Meckling (1976). Their research explains why managers of entities with different capital structures, choose different activities. In a relationship between owners and managers, a principal-agent relationship, both differs in needs and preferences. In this context, an obvious theoretical

argument for the relationship between the ownership structure and profitability arise, capital market discipline could strengthen owner‟s control over management, giving banks management more incentives to be efficient and profitable. Following Jensen and Meckling (1976) their results has implications for banks profitability as results suggest that the ownership structure and corporate governance structure influence performance. Banks with more stringent and value based owners will likely have better profitability than mutual, co-operative or state-owned banks.

2.3 The nature of commercial banks

A commercial bank is a type of bank that provides services such as accepting deposits, making business loans, and offering basic investment products. Commercial bank can also refer to a bank or a division of a bank that mostly deals with deposits and loans from corporations or large businesses, as opposed to individual members of the public (retail banking). In the United States the term "commercial bank" was often used to distinguish it from an investment bank due to differences in bank regulation. After the great depression, through the Glass–Steagall Act, the U.S. Congress required that commercial banks only engage in banking activities, whereas investment banks were limited to capital market activities. This separation was mostly repealed in the 1990s.

The activities of commercial banks: Commercial banks engage in the following activities, processing payments via telegraphic transfer, electronic fund transfer, point of sales, internet banking, or other, issuing bank drafts and bank cheques, accepting money on term deposit, lending money by overdraft, installment loan, or other, providing documentary and study guarantees, performance bonds, securities underwriting commitments and other forms of off-balance sheet exposure, cash management and treasury, merchant banking and private equity financing. Traditionally, large commercial banks also underwrite bonds, and make markets in currency, interest rates, and credit-related securities, but today large commercial banks usually have an investment bank arm that is involved in the aforementioned activities

Types of loans granted by commercial banks

Secured loans: A secured loan is a loan in which the borrower pledges some asset (e.g., a car or property) as collateral for the loan, which then becomes a secured debt owed to the creditor who gives the loan. The debt is thus secured against the collateral in the event that the borrower

defaults, the creditor takes possession of the asset used as collateral and may sell it to regain some or the entire amount originally lent to the borrower, for example, foreclosed a portion of the bundle of rights to specified property. If the sale of the collateral does not raise enough money to pay off the debt, the creditor can often obtain a deficiency judgment against the borrower for the remaining amount. The opposite of secured debt/loan is unsecured debt, which is not connected to any specific piece of property and instead the creditor may only satisfy the debt against the borrower rather than the borrower's collateral and the borrower.

A mortgage loan is a very common type of debt instrument, used to purchase real estate. Under this arrangement, the money is used to purchase the property. Commercial banks, however, are given security - a lien on the title to the house - until the mortgage is paid off in full. If the borrower defaults on the loan, the bank would have the legal right to repossess the house and sell it, to recover sums owing to it.

In the past, commercial banks have not been greatly interested in real estate loans and have placed only a relatively small percentage of assets in mortgages. As their name implies, such financial institutions secured their earning primarily from commercial and consumer loans and left the major task of home financing to others. However, changes in banking laws have allowed commercial banks to make more home mortgage loans.

In acquiring mortgages on real estate, these institutions follow two main practices. First, some of the banks maintain active and well-organized departments whose primary function is to compete actively for real estate loans. In areas lacking specialized real estate financial institutions, these banks become the source for residential and farm mortgage loans. Second, the banks acquire mortgages by simply purchasing them from mortgage bankers or dealers.

In addition, dealer service companies, which were originally used to obtain car loans for permanent lenders such as commercial banks, wanted to broaden their activity beyond their local area. In recent years, however, such companies have concentrated on acquiring mobile home loans in volume for both commercial banks and savings and loan associations. Service companies obtain these loans from retail dealers, usually on a non-recourse basis. Almost all

bank/service company agreements contain a credit insurance policy that protects the lender if the consumer defaults.

Unsecured loan: In finance, unsecured debt refers to any type of debt or general obligation that is not collateralized by a lien on specific assets of the borrower in the case of a bankruptcy or liquidation or failure to meet the terms for repayment.

In the event of the bankruptcy of the borrower, the unsecured creditors will have a general claim on the assets of the borrower after the specific pledged assets have been assigned to the secured creditors. The unsecured creditors will usually realize a smaller proportion of their claims than the secured creditors.

In some legal systems, unsecured creditors who are also indebted to the insolvent debtor are able (and in some jurisdictions, required) to set-off the debts, which actually puts the unsecured creditor with a matured liability to the debtor in a pre-preferential position.

Under risk-based pricing, creditors tend to demand extremely high interest rates as a condition of extending unsecured debt. The maximum loss on a properly collateralized loan is the difference between the fair market value of the collateral and the outstanding debt. Thus, in the context of secured lending, the use of collateral reduces the size of the "bet" taken by the creditor on the debtor's creditworthiness. Without collateral, the creditor stands to lose the entire sum outstanding at the point of default, and must boost the interest rate to price in that risk. Where high interest rates are considered usurious, unsecured loans are either not made at all, or are made by loan sharks unafraid of the law.

Oftentimes Unsecured Loans are sought out in cases where additional capital is required although existing (not necessarily all) assets have been pledged to secure prior debt. Secured lenders will more often than not include language in the loan agreement that prevents debtor from assuming additional secured loans or pledging any assets to a creditor.

Functions: Commercial banks perform many functions. They satisfy the financial needs of the sectors such as agriculture, industry, trade, communication, so they play very significant role in a process of economic social needs. The functions performed by banks, since recently, are

becoming customer-centered and are widening their functions. Generally, the functions of commercial banks are divided into two categories: primary functions and the secondary functions.

Primary functions include**:**

Commercial banks accept various types of deposits from public especially from its clients, including saving account deposits, recurring account deposits, and fixed deposits. These deposits are payable after a certain time period

Commercial banks provide loans and advances of various forms, including an overdraft facility, cash credit, bill discounting, money at call etc. They also give demand and demand and term loans to all types of clients against proper security.

Credit creation is most significant function of commercial banks. While sanctioning a loan to a customer, they do not provide cash to the borrower. Instead, they open a deposit account from which the borrower can withdraw. In other words, while sanctioning a loan, they automatically create deposits, known as a credit creation from commercial banks.

Along with primary functions, commercial banks perform several secondary functions, including many agency functions or general utility functions. The secondary functions of commercial banks can be divided into agency functions and utility functions.

Agency functions include:

♠To collect and clear checks, dividends and interest warrant.

♠To make payments of rent, insurance premium, etc.

♠To make deal in foreign exchange transactions.

♠To purchase and sell securities.

♠To act as trustee, attorney, correspondent and executor.

♠To accept tax proceeds and tax returns.

Utility functions include:

♠To provide safety locker facility to customers.

♠To provide money transfer facility.

♠To issue travelers cheques.

♠To act as referees.

♠To accept various bills for payment: phone bills, gas bills, water bills, etc.

♠To provide merchant banking facility.

♠To provide various cards: credit cards, debit cards, smart cards, etc.

2.4 The role of banks

To start very basic, this paragraph discusses the role of banks in the economy and examines the question why banks exist. At first sight, the answer to this question is very intuitive and simple; banks act as an intermediary between those who are in need for money and those who have excess of money. Looking more closely to this question there could be a more detailed explanation. Namely, in a perfect capital market of Modigliani-Miller (1958), financial institutions are superfluous Santos (2001); namely, entities can borrow and save directly through the capital market. In reality, such perfect market does not exist; transaction costs and monitoring costs distort capital markets. Furthermore, capital markets suffer from the information asymmetry and the agency problem. The agency problem refers to the dissimilar incentives of borrowers and savers, in a broader context it refers to the dissimilar incentives of principles and agents Jensen & Meckling (1976). In a case of financial distress, borrowers are limited liable; implying that they have incentives to alter their behavior by taking on more risk than savers are willing to accept. Monitoring the borrower‟s behavior is time consuming, complex and expensive for individuals. In general, in inefficient markets, financial intermediation is beneficial since banks have lower monitoring and transaction costs than individuals, due to economies of scale and scope.

Another important aspect of banking is the function of maturity transformation. Banks receive short-term savings from depositors and transform those savings into long-term loans to borrowers. By holding a part of the short-term savings in liquid assets and cash, banks could

withstand daily withdrawals from depositors. Banks offer a unique service; lending long term while guaranteeing the liquidity of their liabilities to depositors, which can withdraw their money at any time without a decline in nominal value Schooner & Talyor (2010) cited in van Ommeren (2011). Capital markets cannot achieve maturity transformation with the same benefits as banks can. Individual investors face liquidity, price and credit risk, which they cannot diversify to the extent banks can. As savers do not withdraw their deposits at the same time, banks hold only a minor part of the savings in liquid cash. Thus, banks diversify liquidity risks over a large pool of savers. Individual savers can also diversify their investments in terms of credit and price risks but it remains unlikely that they could withdraw the investments at any time without facing liquidity issues.

Nowadays, bank activities are more diverse than ever. In the past decades, competition has increased and new activities have emerged. The traditional form of banking, receiving deposits and extending credits, has become less important. Ever since the complexity of balance sheet has increased, as did balance sheet and risk management van Greuning & Bratanovic (2009) cited in van Ommeren (2011). Besides the incorporations of liquidity, price and credit risks in banking activities, banks increasingly faces market risks (e.g. interest rate risk and currency risk). One may assume that bank‟s risk managers properly diversify these risks and closely monitor borrower‟s behavior to avoid bank failure or financial distress. Nevertheless, monitoring bank behavior is required to safeguard the continuity and stability of the banking sector due to moral hazard issues.

2.5 Determinants of Commercial Banks Profitability

Theoretically factors affecting bank profitability are mainly divided into two categories as internal and external variables. The internal (bank-specific factors) are factors that are related to internal efficiencies and managerial decisions. As stated in the above section the efficiency theory highly assume as bank performance is influenced by those internal factors that are related to internal efficiencies and managerial decisions. Such factors include determinants such as bank size, capital adequacy, liquidity risk, operational efficiency (expenses management), management efficiency, employee efficiency and funding cost. On the other hand, the capital asset pricing theory assumes as bank profitability is a function of external market factors. Accordingly, one of the external factors (variables) that can affect bank profitability is industry

specific factors. Such factor mainly includes bank sector development as a major determinant factor of bank profitability. Finally, the macroeconomic factors that can affect bank profitability include factors such as real GDP, foreign exchange rate and inflation rate among others. The exact relationship between these factors and the bank profitability and the significance of the relationship remain as questions to be addressed more specifically in the context of Ethiopia.

2.6 Review of Empirical Literature

There are numerous studies which deal with bank profitability though those studies vary to a great extent. Some studies on the bank profitability were carried out focusing on a single country, while others on a panel of countries. To make this current research project more meaningful some references of previous studies from both panel countries and single countries are presented here. Determinants of bank profitability studies conducted in panel country are reviewed in section 2.6.1. This is followed by a review of determinants of bank profitability studies carried out on a single of countries in section 2.6.2. Finally, related studies conducted in the Ethiopian context are reviewed in section 2.6.3.

2.6.1 Studies in panel Countries

This sub section presents same of the panel country studies reviewed by the researcher chronologically.

Wilson and Williams (2000) investigate the relationship between size and growth for a sample of banks in France, Germany, Italy and the UK over the period 1990 to 1996. Using several measures of bank size (total assets, equity and value of off-balance sheet business) they test for size effects on growth, using models which incorporate the influences of previous growth, bank type and country of origin. The results of the analysis suggest that for Italy, small banks tend to grow faster than larger banks. No relationship is found between bank size and growth for France, Germany and the UK. This suggests a process of increasing concentration in these banking systems, even in the absence of bank-specific strategic advantages. Small banks tend to have more variable growth rates than their larger counterparts. This suggests that large banks may enjoy advantages associated with diversified operations, which make them less susceptible to periods of extremely high or low growth.

Hassan and Bashir (2003) intended to characterize some financial and policy indicators that impact the overall performance of Islamic banks. Specifically, the purpose of study is to closely examine the relationship between profitability and the banking characteristics, after controlling for economic and financial structure indicators. Utilizing bank level data, this study examined the performance indicators of Islamic banks in 21 countries worldwide during 1994 to 2001. The main data source is Bank scope database. A variety of internal and external banking characteristics were used to predict profitability and efficiency. Four measures of performance used in this study: the net non-interest margin (NIM), profit margin, returns on assets (ROA), and returns on equity (ROE). To assess the relationship between performance and internal bank characteristics, their analysis utilizes several bank ratios. The set of ratios used comprises, fund source management, funds use management, leverage and liquidity ratios. The paper used regression analysis to determine the underlying determinants of Islamic banks performance. They concluded that Islamic bank‟s profitability measures respond positively to the increases in capital and negatively to loan ratios. The results also indicated the importance of consumer and short-term funding, non-interest earning assets, and overhead in promoting bank profits. They suggested that the regulatory tax factors are important in the determination of bank performance. Favorable macroeconomic environment seems to stimulate higher profits. Finally, the size of the banking system has negative impact on the profitability except net non-interest margin.

Goddard et al (2004) investigate the profitability of European banks during the 1990s using cross-sectional, pooled cross-sectional time-series and dynamic panel models. Models for the determinants of profitability incorporate size, diversification, risk and ownership type, as well as dynamic effects. Despite intensifying competition there is significant persistence of abnormal profit from year to year. The evidence for any consistent or systematic size–profitability relationship is relatively weak. The relationship between the importance of off-balance-sheet business in a bank's portfolio and profitability is positive for the UK, but either neutral or negative elsewhere. The relationship between the capital–assets ratio and profitability is positive. The growth regressions reveal little or no evidence of mean-reversion in bank sizes. Profit is an important prerequisite for future growth. Banks that maintain a high capital-assets ratio tend to grow slowly, and growth is linked to macroeconomic conditions. Otherwise, there are few systematic influences on bank growth. The persistence of profit appears higher for savings and

co-operative banks than for commercial banks. Banks that maintain high capital assets or liquidity ratios tend to record relatively low profitability. There is some evidence of a positive association between concentration and profitability, but little evidence of a link between bank-level x-inefficiency and profitability.

Demirguc Kunt, A Laven, L and Levine, R (2004) examine the impact of bank regulations, market structure, and national institutions on bank net interest margins and overhead costs using data on over 1,400 banks across 72 countries while controlling for bank-specific characteristics. The data indicate that tighter regulations on bank entry and bank activities boost the cost of financial intermediation. Inflation also exerts a robust, positive impact on bank margins and overhead costs. While concentration is positively associated with net interest margins, this relationship breaks down when controlling for regulatory impediments to competition and inflation. Furthermore, bank regulations become insignificant when controlling for national indicators of economic freedom or property rights protection, while these institutional indicators robustly explain cross-bank net interest margins and overhead expenditures. Thus, bank regulations cannot be viewed in isolation; they reflect broad, national approaches to private property and competition.

Using bank-level data, Claessens and Laeven (2004) estimate the extent to which changes in input prices are reflected in revenues earned by specific banks in 50 countries banking systems. They then relate this competitiveness measure to indicators of countries banking system structures and regulatory regimes. The authors find systems with greater foreign bank entry and fewer entry and activity restrictions to be more competitive. They find no evidence that the competitiveness measure negatively relates to banking system concentration. Their findings confirm that contestability determines effective competition, especially by allowing (foreign) bank entry and reducing activity restrictions on banks.

Peters, D. Raad, E. and Sinkey F. Joseph (2004) analyzed the performance and balance-sheet characteristics of banks in post-war Lebanon for the years 1993 to 2000 and for a control group of banks from five other countries in the Middle East for the years 1995 through 1999. The number of Lebanese banks included in their sample varies by year and ranges from 66 to 54 banks per year. They compared their sample banks with a control group of 52 banks from five

countries, including United Arab Emirates (18 banks), Saudi-Arabia (10), Kuwait (8), Bahrain (9), and Oman (7). They employed the accounting return-on-equity (ROE) model to investigate profitability and leverage. The components of bank profitability are analyzed by focusing on net interest margin (NIM). This study employed regression models that relate bank profitability ratios to various explanatory variables. This study tests the relationships between bank profitability and size, asset portfolio composition, off-balance sheet items, ownership by a foreign bank, and the ratio of employment to assets. The results suggest that cross-sectional variation among banks play a major role in explaining ROA. Their models show a strong association between economic growth and bank profitability, whether measured by ROE or ROA. They found that Lebanese banks are profitable, but not as profitable as a control group of banks from five other countries located in the Middle East.

Athanasoglou, P. Delis, M. and Staikouras, (2006) examined the profitability behavior of bank-specific, industry-related and macroeconomic determinants, using an unbalanced panel dataset of South Eastern European (SEE) credit institutions over the period 1998-2002. This paper used annual bank level and macroeconomic data from seven SEE countries. The bank variables are obtained from the Bank Scope database, the macroeconomic variables from the IMF‟s International Financial Statistics (IFS) and the banking reform index from the European Bank for Reconstruction and Development (EBRD). Return on assets and return on equity are chosen as proxies for bank profitability. Among the independent variables analyzed were liquidity, credit risk, capital adequacy, operating expense, management quality, size, concentration, inflation and economic activity. The least squares methods of fixed effects and random effects models were applied in the analysis. The estimation results indicate that, with the exception of liquidity, all bank-specific determinants significantly affect bank profitability in the anticipated way. A key result is that the effect of concentration is positive, which provides evidence in support of the structure-conduct performance hypothesis. In contrast, a positive relationship between banking reform and profitability was not identified, whilst the picture regarding the macroeconomic determinants is mixed. The paper was concluding that some remarks on the practicality and implement ability of the findings.

Pasiouras and Kosmidou (2007) examined how bank‟s specific characteristics and the overall banking environment affect the profitability of commercial domestic and foreign banks operating

in the 15 European Union countries over the period 1995-2001. This study used return on average assets (ROAA) to evaluate bank‟s performance. Four bank characteristics are used as internal determinants of performance. These are the bank‟s total assets, the cost to income ratio, the ratio of equity to assets, the ratio of bank loans divided by customers and short term funding and bank size. In addition, six external determinants are used to examine the impact of environment on bank‟s performance. Two sets of variables have been considered in this study, indicating macroeconomic conditions and financial structure characteristics. The two macroeconomic variables used are gross domestic product growth and inflation. In order to examine this study used the ratios stock market capitalization to GDP, stock market capitalization to total assets of deposit money banks, total assets of deposit money banks to GDP and banking industry concentration. Their sample is a balanced panel data set of 584 commercial banks operating in the 15 EU countries over the period 1995-2001 consisting of 4088 observations. Banks were split according to their ownership resulting in two sub-samples of 332 domestic and 218 foreign banks. All financial and ownership data of individual banks as well as information concerning market concentration were drawn from Bank Scope database. Country and market specific data were obtained from Euro Monitor International Database (EMID) which collects data from sources such as International Monetary Fund‟s (IMF), International Financial Statistics (IFS), World Economic Outlook (WEO)/National Statistics (UNS) and World Bank (WB). The results indicated that profitability of both domestic and foreign banks is affected not only by bank‟s specific characteristics but also by financial market structure and macroeconomic conditions. Capital strength and efficiency in expenses management were found to be the main determinants of ROAA in all cases as the relatively high significant coefficients of the equity to assets and cost to income ratios showed. Equity to assets was positively related to ROAA and appeared to be the most significant determinant of profitability. The impact of the indicators of macroeconomic conditions on ROAA is significant in all cases.

Olson and Zoubi (2008) in their paper, tried to determine whether Islamic and conventional banks in the Gulf Cooperation Council (GCC) region are distinguishable from one another on the basis of financial characteristics alone. They collected 237 observations, or bank-years of data, for 141 conventional and 96 Islamic banks operating in the Gulf Cooperation Council (GCC) during the period 2000-2005. They input 26 financial ratios in to logit, neural network, and k-

means nearest neighbor classification models to determine whether researchers or regulators could use these ratios to correctly categorize a bank as Islamic or conventional. These 26 financial ratios fall into five general categories: profitability, efficiency, asset quality, liquidity and risk. The empirical results of this study indicated that measures of bank characteristics are good discriminators between Islamic and conventional banks in the Gulf Cooperation Council (GCC) region. An initial glance at the data reveals that most accounting ratios are similar for Islamic and conventional banks. Nevertheless, some financial characteristics of Islamic banks are different from those of conventional banks. Results from their classification models implied that the operational characteristics of the two types of banks may be different. Islamic banks are more profitable than conventional banks, but probably not quite as efficient. They discovered that non-linear classification techniques are able to correctly distinguish Islamic from conventional banks in out-of-sample tests at about a 92% success rate.

Heffernan and Fu (2008) identified the determinants of South Asian banks performance and assessed whether recent reforms had any effect. The sample covered 76 banks between 1999 and 2006. Most of the data used here come from Bank Scope. Ten bank-specific independent variables and three macroeconomic explanatory variables were analyzed in this study. While four dependent variables used in this study as the performance measures of banks. They were Economic Value Added (EVA), Return on Average Assets (ROAA), Return on Average Equity (ROAE), and Net Interest Margin (NIM). This study employed the system Gaussian Mixture Model (GMM) model to assess the determinants of South Asian bank performance. A fixed effects panel data model is also estimated to allow comparison of results, and as a robustness check. Among the results obtained are cost to income ratio is negatively signed and significant to profitability. On the contrary, Loan Loss Reserve Ratio (LLR) produced a positive and significant coefficient. The results also reported that the macroeconomic variable that performed best in this study is the real GDP growth rate, followed by the unemployment rate. From the results it is confirmed that the system Gaussian Mixture Model (GMM) model is the preferred method of estimation. The study also looked at the question of which of four performance measures work best. Based on diagnostics and the significance of coefficients, the results suggested the best dependent variables are Economic Value Added (EVA) and the Net Interest

Margin (NIM), as against Return on Average Assets (ROAA) or Return on Average Equity (ROAE).

2.6.2 Studies in single Countries

This sub section presents some of the single country studies reviewed by the researcher chronologically.

Guru et al. (2002) investigate the determinants of bank profitability in Malaysia. They used a sample of 17 commercial banks during the 1986 to 1995 period. The profitability determinants were divided into two main categories, namely the internal determinants (liquidity, capital adequacy, and expenses management) and the external determinants (ownership, firm size, and economic conditions). The findings revealed that efficient expenses management was one of the most significant 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.

Chantapong (2005) investigates the performance of domestic and foreign banks in Thailand during the period 1995 to 2000. All banks were found to have reduced their credit exposure during the crisis years and have gradually improved their profitability during the post-crisis years. The results indicate that foreign bank profitability is higher than the average profitability of the domestic banks although importantly, in the post-crisis period, the gap between foreign and domestic bank profitability has closed, suggesting that the financial restructuring program has yielded some positive results.

Kosmidou, Tanna and Pasiouras (2006) investigated the impact of bank-specific characteristics, macroeconomic conditions and financial market structure on UK owned commercial bank‟s profits, measured by Return on Average Assets (ROAA) and Net Interest Margins (NIM). An unbalanced panel data set of 224 observations, covering the period 1995-2002, provided the basis for the econometric analysis. They relied on two commonly used measures of profit performance namely Return on Assets (ROA) and Net Interest Margin (NIM). The five measures used as internal determinants of performance are: cost to income ratio as an indicator of efficiency in expenses management, ratio of liquid assets to customer and short term ratio of loan

loss reserves to gross loans as an indicator of bank‟s asset quality, ratio of equity to total assets representing capital strength, and the total assets of a bank representing its size. Turning to external determinants, four measures were considered, two of which represent the influence of macroeconomic conditions and the other two of financial market structure. The results showed that capital strength, represented by the equity to assets ratio, is the main determinant of UK bank‟s profits. The other significant determinants are cost-to-income ratio and bank size, both of which impact negatively on bank profits.

Athanasoglou *et al*. (2008) examined the effect of bank-specific, industry-specific and macroeconomic determinants of bank profitability of Greek commercial banks and covers the period 1985-2001. They employed an empirical framework that incorporates the traditional Structure-Conduct-Performance (SCP) hypothesis. The profitability variable is presented by two alternative measures: the ratio of profits to assets, i.e. the Return on Assets (ROA) and the profits to equity ratio, i.e. the Return on Equity (ROE). Five bank-specific factors used to test the correlation with bank profitability. Capital variable which is peroxide by equity to assets ratio, and productivity growth variable produced a positive and significant relationship with profitability. Next, credit risk and operating expenses management were found to be negatively significant. Lastly, the effect of bank size on profitability was found to be not important. Two industry-specific profitability determinants utilized namely ownership and concentration was found to be insignificant in affecting the profitability. Macroeconomic control variables, such as inflation and cyclical output, clearly affect the performance of the banking sector. In conclusion, their findings indicated that all bank-specific determinants, with the exception of size, affect bank profitability significantly in the anticipated way.

Ben Naceur and Goaied (2008) examine the impact of bank characteristics, financial structure, and macroeconomic conditions on Tunisian bank‟s net-interest margin and profitability during the period of 1980 to 2000. They suggest that banks that hold a relatively high amount of capital and higher overhead expenses tend to exhibit higher net-interest margin and profitability levels, while size is negatively related to bank profitability. During the period under study, they find that stock market development has positive impact on bank‟s profitability. The empirical findings suggest that private banks are relatively more profitable than their state owned counterparts. The

results suggest that macroeconomic conditions have no significant impact on Tunisian bank‟s profitability.

A study on bank profitability is also been achieved by Dietrich and Wanzenried (2009) focusing on 453 Swiss Commercial Banks over the period of 1999 to 2006, it has 1919 observations. The research includes the recurrent determinants such as bank-specific, industry-specific and macroeconomic factors. Most interestingly, their results demonstrate the existence of significant differences in profitability between the Swiss Commercial Banks and the determinants listed above are the main influences behind this positive impact on profitability. Some controversy matters are also listed, Banks in Lake Geneva region are slightly profitable than Banks in the Zurich region. Furthermore results also show that foreign banks are clearly less profitable compared to public banks. And also, some of macroeconomic variable such as effective tax rate and market concentration rate have negative effect on profitability.

Grygorenko (2009) investigated the influence of price setting strategy on bank performance in Ukraine. He employed the Instrumental Variables Technique (IVT) to explore this effect. It was found that the relationship between performance of the bank and its price setting policy is positive and statistically significant. According to these findings, banks with higher margins were more profitable. Also it was estimated that more profitable banks were characterized by strong capitalization level and high deposit-to-asset ratio. Such external factors as market concentration and inflation rate appeared to be insignificant in determination of bank performance in Ukraine, contradicting the inflation findings of Kosmidou (2008).

Sufian (2011) investigated the profitability of the Korean banking sector for the period of 1992-2003 and he comes up with the following findings that the banking system in Korea impulses profitability when there is low liquidity in their assets and their macroeconomic determinants especially inflation have a significant impact on bank profitability. However, the impact of credit risk and cost are always negative. Furthermore, it is observed that on average the Korean banking sector is relatively more profitable during the pre-crisis period under both profitability measures, i.e., ROA and ROE. One relevant view that is included in Sufian paper is that the Korean banking system was under fire during the Asian financial crisis.

Aremu (2013)applying the econometric analysis of Cointegration and Error Correction Technique sought to find out what factors really determined profitability in the banking sector of the Nigerian economy using First Bank of Nigeria PLC as a case study. Results from the study revealed that contrary to views of some authors, Bank Size (Natural Logarithm of Total Asset and Number of Branches) and Cost Efficiency did not significantly determine bank profitability in Nigeria. However, Credit Risk (Loan Loss Provision-Total Assets) and Capital Adequacy (Equity-Total Assets) was found to be significant drivers which affected bank profitability both in the long run and short run respectively. Also, while Liquidity affected bank profitability in the short run; Labor efficiency (Human Capital ROI and Staff Salaries-Total Assets) only affected bank profitability in the long run. But as for the external or macroeconomic variables which determined bank profitability, only Broad Money Supply growth rate was found to be a significant driver both in the long run and in the short run

2.6.3 Empirical studies in Ethiopia

Most literatures that are examined in this study used banks specific, industry specific and macro-economic factors as a determinant of banks profitability. 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 by Belayneh (2011), factors affecting profitability: an empirical study on Ethiopian banking industry 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)

Damena (2011) in his study examined the determinants of Ethiopian commercial banks profitability. The study applied the balanced panel data of seven Ethiopian commercial banks that covers the period 2001- 2010. The paper used Ordinary Least Square (OLS) technique to investigate the impact of some internal as well as external variables on major profitability indicator i.e., ROA. The estimation results showed that all bank-specific determinants, with the exception of saving 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 exhibits a significant relationship with banks profitability.

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

The study made by Amdemikael (2012) examined the determinants of Ethiopian commercial banks profitability. The study applied the balanced panel data of eight Ethiopian commercial banks that covers the period 2001- 2011. The study adopts a mixed methods research approach by combining documentary analysis and in-depth interviews to investigate the impact of some internal as well as external variables on major profitability indicator i.e., ROA.The findings of the study show that capital strength, 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 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) examined the determinants of Ethiopian commercial banks profitability. The study applied the balanced panel data of eight Ethiopian commercial banks that covers the period 2001- 2011. The paper used Ordinary Least Square (OLS) technique to investigate the impact of some internal as well as external variables on profitability indicator i.e., ROAA, NIM the finding shows, all bank-specific determinants, with the exception of bank size, expense management and credit risk, affect bank profitability significantly and positively in the anticipated way. However, bank size, expense management and credit risk affect the commercial banks profitability significantly and negatively. In addition to this, 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. The paper used Ordinary Least Square (OLS) technique to investigate the impact of some internal as well as external variables on profitability indicator i.e., ROA, ROE & NIM, the finding shows The empirical results shows that bank specific factors; capital adequacy, managerial efficiency, bank size and macro-economic factors; level of GDP, and regulation have a strong influence on the profitability of private commercial banks in Ethiopia

2.7 Summary and Knowledge gap

In line with the above theoretical as well as empirical review, profitability is important to all business specially for banking industry since the stability of commercial banks depends on their profitability and the whole economy stability of the nation highly related to the stability of commercial banks. It also revealed that banks profitability can be affected by different factors such as bank specific, industry specific and macroeconomic. While this study focused on some of the bank specific, industry specific and macro-economic factors.

Due to the variation of the environment and data included in the analysis the results of various studies differ significantly. However, several researchers identified that there are some common factors which influence profitability of a bank. Summarizing the results from numerous studies, larger bank size, good asset quality, higher proportion of equity capital to asset, greater GDP growth have generally been associated with greater profitability. Various measures of costs are usually negatively correlated with profits. Greater provisions for loan losses, higher liquidity, and more reliance on debt have been lower indicative of lower bank profit.

The review of the literature reveals the existence of many gaps of knowledge in respect of the factors affecting bank profitability, particularly in the context of Ethiopia. As per the review of the literature most of the empirical studies that have been conducted with the aim of identifying factors affecting bank profitability belong to European Union and some emerging markets such

as Philippines, Malaysia and Tunisia. Moreover, the literature review also reveals the existence of controversial conclusions that results from different studies made so far. Furthermore, so far as the review of the literature discloses, very scanty work has been done with the objective of identifying the determinants of profitability of banks in Sub Sahara Africa in general and Ethiopia in particular.

The study of Damena (2011) examined the determinants of commercial banks profitability in Ethiopia. The study of Damena (2011) fails to disclose the knowledge gap that exists in the area as far as it limits its scope only in case of seven commercial banks of the country and also overlooked some important variables that are untouched in Ethiopian contextand significant from the point of view of the theories and previous empirical studies reviewed above, the study of Demena (2011) also surprisingly fails to include in its sample one of the governments owned commercial bank namely, CBB which have around 106 branches operated throughout the country currently (NBE 2013/14). In addition to this, the study fails to disclose the impact of some very important variables on Ethiopian banks profitability such as efficiency, non-performing loans and liquidity risk among others.

The study of Belayneh (2011) examined the determinants of commercial banks profitability in Ethiopia. The study of Belayneh (2011) also fails to disclose the knowledge gap that exists in the area. In addition to this, the study fails to disclose the impact of some very important variables on that untouched in Ethiopian context such as labor efficiency, funding cost and among others.

The study of Birhanu (2012) and Amdemikael (2012) was good in many aspects when we compare to prior studies that are conducted on the same area but both Birhanu (2012) and Amdemikael (2012) also fails to include some important variables that are not tested and never touched in Ethiopian context like labor efficiency, funding cost, financial sector development, foreign exchange rate among others.

To summarize in the context of Ethiopia, the related study conducted by Demena (2011), Belayneh (2011), Birhanu (2012) and Amdemikael (2012) examined the determinants of commercial banks profitability in Ethiopia, even if they tries to identify the impact of some bank specific, industry specific and macro-economic variables accordingly, their study clearly failed

to identify most of the factors that affect bank profitability significantly and variables that are not tested and new for Ethiopian banking industry. In general, the lack of sufficient research (based on the researcher best knowledge) on the determinants of bank profitability in the context of Ethiopia and the existence of variables that are not tested in Ethiopian banking industry initiate this study. Therefore, the objective of this study is to examine the factors that affect bank profitability in Ethiopia and to fill the knowledge gap that exists in the area by including and testing four new variables (labor efficiency, funding cost, banking sector development and foreign exchange rate) that are not tested by prior Ethiopian researchers.

Chapter Three

3 Research design and methods

The preceding chapter presented the review of the existing evidence on factors affecting the profitability of banks and identified the knowledge gap. The results from a review of the literature are used to establish expectations for the relationship of the different determinants. Therefore, the purpose of this chapter is to present the research question and hypotheses, the underlying principles of research methodology and the choice of the appropriate research method for the thesis. The chapter is organized as follows. The first section 3.1 presents the research hypotheses and question along with the broad research objective. Section 3.2 discusses the research approaches while section 3.3 presents the method adopted in the study. Finally section 3.4 present Conclusions and the relationship between research question/hypotheses and the data.

3.1 Hypotheses, determinants selection and research question

As already shown in the first chapter, in the context of the problems highlighted the broad objective of this research is to identify factors that affect bank profitability in Ethiopia. In line with the broad purpose statement eleven hypotheses and three specific research questions were formulated for investigation purpose. Hence, subsection 3.1.1 presents the dependent variables as proxy for bank‟s profitability. Then the independent variables that are selected and categorized in to bank-specific, industry-specific and macroeconomic determinants of banks profitability are presented in subsection 3.1.2.

3.1.1 Dependent variable

Profit is the ultimate goal of commercial banks. All the strategies designed and activities performed thereof are meant to realize this grand objective. However, this does not mean that commercial banks have no other goals. Commercial banks could also have additional social and economic goals. However, the intention of this study is related to the first objective, profitability. To measure the profitability of commercial banks there are variety of ratios used of which ROA and ROE are the major ones Alexandru et al (2008).

ROA reflects the ability of bank‟s management to generate profits from the bank‟s assets, although it may be biased due to off-balance-sheet activities. ROE shows the return to the

shareholders on their equity. As highlighted by Athanasoglou et al (2008) and Sufian (2011), many scholars suggest that ROA is the key ratio for the evaluation of bank profitability given that ROA is not distorted by high equity multipliers, while ROE disregards the risks associated with high leverage and financial leverage. In this respect, we rarely find the paper utilizes ROE as a single measure of profitability. Rumler & Waschiczek (2010) is one of the examples. Other papers utilize ROE for checking the consistency with ROA, e.g. Ben Naceur & Omran (2011) and Sufian (2011). While a bulk of studies employ ROA as profitability measure, e.g. Pasiouras & Kosmidou (2007), Athanasoglou et al. (2008) and Olweny & Shipho (2011). Therefore, this study attempts to measure profitability by using ROA similar to most of the aforementioned researchers. ROA is measured as net profit after tax divided by total assets similar to Olweny & Shipho (2011).

Return on Asset (ROA)

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

3.1.2 Independent variables

This subsection describes the independent variables that are used in the econometric model to estimate the dependent variables. Following prior researches towards the determinants of banks profitability, the independent variables are classified into bank-specific, industry-specific and macroeconomic variables Athanasoglou et al. (2008), Flamini et al (2009) and Sastrosuwito and Suzuki (2011). The bank-specific variables are internal factors and controllable for banks managers while the industry-specific and macroeconomic variables are uncontrollable and hence external. Moreover, these subsection present hypotheses, by proposing the expected sign of the coefficients, based on academic literature. Note that some relationships between selected independent variables and profitability are rather straightforward. Nevertheless, the inclusion of irrelevant variables does not lead to biased coefficients or standard deviations while the omission

of relevant variables does. Hence, some variables that look rather predictable at first sight are included to prevent biased results.

Bank specific variables

The bank-specific variables are selected by using some key drivers of profitability like earnings, efficiency, risk taking and leverage. Profitability is driven by the ability of a bank in generating sufficient earnings or in lowering operational cost, implying being more efficient. Furthermore, due to the special nature of banks, risk taking and leverage are also very important drivers for profitability. Theoretical academic literature suggests that there is a risk-return tradeoff, higher risks is associated with higher profits. Risk taking could relate to the quality of assets, liquidity of assets and to the capital structure of a bank. Hence, the following part of this particular section clearly presents the bank-specific variables that are used in this particular study.

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 sector. Additionally, bank size is associated with diversification which may impact favorably on risk and product portfolio. Economies of scale will reduce the cost of gathering and processing information Boyd *et al., (*1993) so that a positive effect of bank size is associated with profitability. Akhavein*et al.* (1997) and Smirlock (1985) found a positive and significant relationship between size and bank and profitability. Short (1979) argues, size is closely related to the capital adequacy of a bank since relatively large banks tend to raise less expensive capital and hence, appear more profitable. These results imply that as size increases, profitability increases. This is especially true in the case of small to medium-sized banks.

On the other hand, increased diversification can reduce risk in the credit portfolio thereby reducing returns. Banks that have become extremely large may exhibit negative relationship between size and profitability as a result of bureaucracy and agency cost. According to Berger *et al.,* (1987), little cost saving can be achieved by increasing the size of a banking firm which suggests that eventually very large banks could face scale inefficiencies.

HP1: There is positive/negative relationship between the size of a bank and the bank's profitability.

Capital adequacy: The ratio of Equity to total Asset is employed as a measure for bank Capital Adequacy. This measures the percentage of the total asset that is financed with equity capital. Capital adequacy therefore describes the sufficiency of the amount of equity that can absorb shocks that banks may experience. It is expected that the higher the Equity to Asset ratio, the lower the need for external funding and therefore the higher the profitability of the bank. In addition, well-capitalized banks face a lower cost of going bankrupt which reduces their cost of funding Kosmidou (2008). But that is not all. Bank with higher capital to asset ratio are considered relatively safer and tend to have a better margin of cushion, remaining profitable even during economically difficult times. Conversely, banks with lower capital adequacy are considered riskier relative to highly capitalized banks. Thinking in line with the conventional Risk-Return Hypothesis, we anticipate an inverse relationship between capital adequacy and profitability. Considering the fact that capital adequacy may have an ambiguous effect on profitability, theoretical expectation of capital adequacy remains a puzzle to be answered by empirical investigation.

HP2: *There is positive/negative relationship between the amount of capital of a bank and the bank's profitability.*

Liquidity risk: Liquidity is a prime concern for banks and the shortage of liquidity can trigger bank failure. Banking regulators also view liquidity as a major concern. This is because banks without sufficient liquidity to meet demands of their depositors risk experiencing bank run. Holding assets in a highly liquid form tends to reduce income as liquid asset are associated with lower rates of return. For instance, cash which is the most liquid of all assets is a non-earning asset. It would therefore be expected that higher liquidity would negatively correlates with profitability. Indeed, Molyneux*et al.,* (1992) and Guru *et al.,* (1999) discovered that negative correlation exists between the level of liquidity and profitability.

Liquidity risk is one of the types of risk for banks; when banks hold a lower amount of liquid assets they are more vulnerable to large deposit withdrawals. Therefore, liquidity risk is estimated by the ratio of liquid assets to total assets. Based on the risk-return hypothesis, more liquidity risk is associated with higher expected returns. Otherwise stated more cash and other liquid non-earning assets result in a lower expected return because these assets do not generate

any return. Following prior research of Pasiouras & Kosmidou (2007), a negative relationship for liquid assets to total asset ratio and profitability is hypothesized.

HP3: *There is negative relationship between the liquidity risk of a bank and the bank's profitability.*

Operating Efficiency: The expense to income ratio is used as proxy for operating efficiency. The expense to income ratio is defined as the operating costs over total generated revenues. The major elements of operating cost are staff salaries and administrative cost. It is used as an indicator of management‟s ability to control costs and is expected to have a negative relation with profits, since improved management of these expenses will increase efficiency and therefore raise profits. It is also one of the key drivers of profitability that is examined. Similar to Pasiouras & Kosmidou (2007), Trujillo Ponce (2012) and others, the expense to income ratio is used, to measure banks operational efficiency. It is also used to provide information on the variation of bank cost over the banking system. A negative correlation is expected between the operating cost and profitability implying that higher operating cost means lower profit and vice-versa. However, this may not be the case as higher amounts of operating cost could also reflect higher volume of banking activities.

HP4: *There is negative relationship between the operational efficiency of a bank and the bank's profitability.*

Management Efficiency: The performance of the other four CAMEL components will depend on the vision, capability, agility, professionalism, integrity, and competence of the Financial Institution‟s management. A sound management is crucial for the success of any institution. Management quality is generally accorded greater weighting in the assessment of the overall CAMEL composite rating brickwork rating. The quality of the management will determine the success of a bank or financial institution. The performance of a bank is largely dependent on the vision, competence, and integrity and risk appetite of the management, Financial Management and Analysis of Projects (2006).

Management Efficiency is one of the key internal factors that determine the bank profitability. It is represented by different financial ratios like total asset growth, loan growth rate and earnings

growth rate. Yet, it is one of the complexes subject to capture with financial ratios. Moreover, operational efficiency in managing the operating expenses is another dimension for management quality. The performance of management is often expressed qualitatively through subjective evaluation of management systems, organizational discipline, control systems, quality of staff, and others. Yet, some financial ratios of the financial statements act as a proxy for management efficiency. The capability of the management to deploy its resources efficiently, income maximization, reducing operating costs can be measured by financial ratios. The ratios of operating expenses to operating income and operating expenses to total assets are commonly used to measure Managerial efficiency of the banks. Indranarain (2009), Bourke (1989) and Molyneux and Thornton (1992) used operating expense to operating income and stated that Higher the efficiency level of a bank, higher its profits level. Hence a positive relationship is expected between efficiency and profitability of banks. The analysis of the quality of a management is based on the experience of the management and their track record in terms of their vision and competence in running the bank.

HP5: *There is positive relationship between management efficiency of a bank and the bank's profitability.*

Employee Efficiency: The people in a bank are the most valuable resources and the major driving force for successes and failures. The quality of human resources employed by a bank greatly affects its profitability. The recruitment process and training standard of the financial institution, which reflects the quality of the people in the organization, their ability to guidance and support to operations staff, compensation package as per the industry norms and attrition rate in the financial institution, which reflect the satisfaction among the employees and staff towards their work and organization.

The human capital in organizations is valuable because of the capabilities that the people have. As part of the strategic role, Human Resource managers are often seen as responsible for expanding the capabilities of the human resources in an organization. Therefore, employee efficiency is estimated by the ratio of staff salary over total asset currently, considerable emphasis is being focused on the competencies that the employees in the organization have and will need the organization to grow in the future. Yet the mobility of human capital is less a threat

to competitive advantage than it would first seem to be because once an organization integrates human capital with other complementary resources and uses this integration to create organizational capabilities, losing one or a few individuals may not lead to a loss of competitive advantage Aremu M. A, Mejabi (2013) found negative and significant relationship between employee efficiency and profitability

HP6: There is negative relationship between the employee efficiency and the bank's profitability.

Funding cost: the interest rate paid by commercial banks for the funds that they deploy in their business, the cost of funds is one of the most important input costs for a financial institution, since a lower cost will generate better returns when the funds are deployed in the form of short-term and long-term loans to borrowers. The spread between the cost of funds and the interest rate charged to borrowers represents one of the main sources of profit for most financial institutions. The most common ratio used to examine funding costs is the ratio of interest expenses on deposits to total deposits. Macroeconomic theory states that there will be a negative relationship between funding costs and profits because a lower cost will generate better returns for banks that make profits off of the loans to borrowers. Dietrich and Wanzenried (2011) find a negative relationship between this ratio in Switzerland, and Lindblom et al (2010) find that decreasing rates during crisis periods have lowered funding costs for banks in Sweden. This result is in line with the theory that banks adjusted their deposit rates in line with declining market rates.

HP7: There is negative relationship between the funding cost and the bank's profitability.

Industry-specific variables

This subsection discusses the industry concentration and banking sector development variables separately from bank-specific variables as far as this variable is to some extent external. That means managers cannot change the variable immediately like that of bank-specific variables.

Banking sector development: a total asset of the industry to GDP ratio indicates that financial development plays an important role in the economy. When the market becomes more competitive, banks need to adapt different strategies in order to retain profitability. Demirguc Kunt and Huizinga (1998) present evidence that financial expansion and structure are important

variables. Their results show that banks in countries where bank assets comprise a large portion of GDP generally have smaller margins and less profitability.

HP8: *There is negative relationship between banking sector development and bank profitability.*

Macroeconomic variables

The environments in which banks operate can influence their performance and can impact on their strategic positioning. The external determinants represent events outside the scope and influence of the banks. The external environment defines the legal, political, economic, technological, and social landscapes in which banks operate. These factors are external because the banks do not have control over them although banks can anticipate changes in the external environment and position themselves strategically to take advantage of them. The external landscape can further be divided into industry-specific (financial structure) determinants and macroeconomic determinants. The industry-specific determinants are only specific to the banking industry such as the industry concentration, price elasticity and developments in the banking industry. The macroeconomic-specific determinants reflect the general macroeconomic and market conditions in the country. In this study, real gross domestic product, inflation and exchange rate are adopted as external factors to be examined as they are widely studied in other countries.

Gross Domestic Product*:* The real gross domestic product is the measure of total economic activity within the economy and it is commonly used economic indicator. In this study we employ the gross domestic product growth as a measure of macroeconomic conditions. The gross domestic product growth is the annual change in the real GDP. According to Demirguc Kunt *et al.,* (1998), Bikker*et al* (2002), and Athanasoglou *et al.,* (2008), there is a positive association between economic growth and commercial banks profitability. We anticipate therefore a positive correlation between real GDP growth and profitability.

HP9: *There is positive relationship between real gross domestic product growth and bank profitability.*

Inflation rate: Another important macroeconomic condition which may affect both the costs and revenues of banks is the inflation rate (INFL). In this regard, after some authors introduces the

issue of the relationship between bank profitability and inflation, stating that the effect of inflation on bank profitability depends on how inflation affects both salaries and the other operating costs of the bank. In this context, Staikouras & Wood (2003) point out that as inflation may have direct effects, that is, increase in the price of labor, and indirect effects, that is, changes in interest rates and asset prices, on the profitability of banks. Perry (1992) also suggests that as the effects of inflation on bank performance depend on whether the inflation is anticipated or unanticipated. In the anticipated case, the interest rates are adjusted accordingly, resulting in revenues to increase faster than costs and subsequently, having positive impact on bank profitability. On the other hand, in the unanticipated case, banks may be slow in adjusting their interest rates resulting in a faster increase of bank costs than bank revenues and consequently, having negative effects on bank profitability. Thus, the expected sign of the inflation is unpredictable based on prior research.

HP10: *There is positive/negative relationship between inflation and bank profitability.*

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

HP11: *There is positive relationship between real exchange rate and bank profitability.*

The following table 3.1 presents the summary of hypothesized expected sign for the relationship between the explanatory variables (independent variables) and banks profitability (dependent variables).

Table 3.1 Description of the variables and their expected relationship

variables	Measure	Notation	Expected sign
Dependent variables			
Return on Asset	The return on average total asset of the bank in year t	ROA	NA
Independent Variables			
Bank-Specific variables			
Bank Size	Natural log of total assets	Size	+/-
Capital adequacy	Equity/ total assets ratio	CAP	+/-
Liquidity risk	Loan/deposit	LIQ	-
Operating Efficiency	Cost/income ratio	CIR	-
Management Efficiency	operating expenses /operating income	MGE	+
Employee Efficiency	Staff Salary/Total asset	EME	-
Funding Cost	Interest expense/Total Deposit	FDC	-
Industry-Specific Variable			
Banking Sector Development	Total asset of the industry/GDP	BSD	-
Macroeconomic variables			
Gross Domestic Product	Real GDP growth (in %)	GDP	+
Inflation rate	The annual inflation rate	INFL	+/-
Foreign exchange Rate	Average annual exchange rate (in %)	FER	+

3.2 Research approaches

Depending on the philosophical stance, strategies of inquiry and specific methods, a research approach can be categorized as quantitative research approach, qualitative research approach and mixed research approach. The discussions in the subsequent sections present these three approaches of research. Specifically, Section 3.2.1 presents quantitative research approach while sections 3.2.2 and 3.2.3 present respectively qualitative and mixed methods research approaches.

3.2.1 Quantitative research approaches

Quantitative research is grounded in the post-positivism knowledge claim that primarily reflects the scientific method of the natural sciences. This paradigm adopts a deductive approach to the research process. The researcher gathers data from the real world setting and then analyses the data statistically to support or reject the hypotheses Blanchi and Durrhein, (1999). Researchers who adopt a more deductive approach use theory to guide the design of the study and the interpretation of the results. In line with this, the overall objective of quantitative research is to test or verify a theory, rather than to develop one. Therefore, the theory offers a conceptual framework for the entire study, and it also serves as an organizing model for the entire data collection procedure. Shaw (2006) sees quantitative techniques as an attempt to test a hypothesis by incorporating it into the research design and responding to it by measuring its strength and weaknesses that give numerical measurements to the data collected.

Firestone (1987) stated that quantitative data are those which can be sorted, classified, measured in a strictly objective ways. They are also capable of being accurately described by a set of rules or formulae which then make their definition (if not always their interpretation) unambiguous and independent of individual judgments. Quantitative researchers put their emphasis on procedures, methodologies and statistics. As a result, it relies on statistical techniques aided by computational algorithms and software packages for analysis the problem under study.

Quantitative research is one in which the investigator primarily uses positivist claims for developing knowledge and its strategies of inquiries are associated with experimental and survey research methods. Creswell (2009) mentioned that experimental research seeks to determine if a specific treatment influence an outcome. This impact is assessed by providing a specific treatment to one group and withholding it from another and then determining how both groups scored on an outcome. Therefore, pure experiment enables the researcher to manipulate an independent variable in order to see the effect on the dependent variable with the random assignment of subjects to treatment conditions while quasi experiments uses non randomized designs and it is a single subjects design Whereas, survey research provides quantitative or numeric description of research trends attitudes or opinions of a population by studying a sample of population. It includes cross-sectional (data will be collected in one point in time) and longitudinal studies (data will be collected through time with different interval) using

questionnaires, structured interviews and documentary reviews for data collection, with the intent of generalizing from the sample to the population Creswell (2009).

The well planned and implemented quantitative research has the merit of being able to make generalizations, for a broader population, based on findings from the sample. To enhance the generalization of findings, quantitative research methods follow, at least theoretically, standardized procedures in sample selection, instrument design, implementation and analysis. This standardization in turn increases the duplicability of procedures and the reliability of findings and also can mitigate the impact of interviewer (if administered through direct interviews) and interviewee biases (minimizing subjectivity of judgment).

Notwithstanding the above advantage, quantitative research design has a number of limitations. First, it belittles human individuality and the ability to think. Second, it fails to provide the researcher with information on the context of the situation where the studied phenomenon occurs. Third, it will have limited outcomes to only those outlined in the original research proposal due to closed type questions and the structured format and finally, quantitative research appears to lack flexibility in design which may be crucial when additional information revealed through data collection needs further exploration for knowledge.

3.2.2 Qualitative research approaches

Qualitative approach is centered on the interpretive social sciences paradigm. Qualitative methodology of investigation tends to be based on recognition of the importance of the subjective, experimental "life-world" of human beings Blanchi and Durrhein, (1999). Shaw (2006) described that qualitative research seeks to come to terms with meaning rather than frequency because they discover or uncover issues in order to generate ideas and hypothesis. This paradigm therefore focuses on context and capture ways in which people interpret events, experiences and relationship.

Easter smith et al (1991) mentioned that the task of the qualitative methodologist as to capture what people say and do as a product of how they interpret the complexity of their world, and to understand events from the viewpoints of the participants. Creswell (2009) pinpointed that qualitative approach is one in which the inquirer often makes knowledge claims based primarily

on constructivist perspectives (i.e., the multiple meanings of individual experiences meanings socially and historically constructed, with an intent of developing a theory or pattern) or advocacy/participatory perspectives (i.e., political, issue-oriented, collaborative, or change oriented) or both.

Greener (2008) and Creswell (2009) stated that qualitative research approach uses strategies of inquiry such as case studies, narratives research, phenomenology, ethnographies, action research and grounded theory. Greener (2008) described case study as strategies of inquiry in which the research will involve more than one ways of delivering data about the case or organization/unit under study for a prolonged time period. This may include collecting and analyzing documents, talking to peoples, survey data, participates observation, consumer research and any other data collection techniques which offer qualitative information about the case. According to Creswell (2009) narrative research is a strategy of inquiry in which the research studies the life of individuals and asks one or more individual to provide stories about their lives. This information is then often retold or restored by the researcher into the narrative chronology.

Dawson (2002) explained that ethnography has its roots in anthropology and was a popular form of inquiry at the turn of the century when anthropologists travelled the world in search of remote tribes. The emphasis in ethnography is on describing and interpreting cultural behavior. Ethnographers immerse themselves in the lives and culture of the group being studied, often living with that group for a prolonged period of time. These researchers participate in group activities whilst observing its behavior, taking notes, conducting interviews, analyzing, reflecting and writing reports. The research process is flexible and typically involves contextually in response to the lived realities encountered in the field setting. Phenomenological research is a strategies of inquiry in which the researcher identifies the essence of human experiences about the phenomenon as described by participants Creswell (2009). Understanding the lived experiences marks phenomenology as a philosophy as well as method, and the procedure involves studying a small number of subjects through intensive and prolonged engagement to develop patter and relationships of meaning. Finally Dawson (2002) defined that grounded theory is a strategy of inquiry which was first laid out in 1967 by two researchers named Glaser and Strauss. The emphasis in this strategy is on the generation of theory which is grounded in the data (which means it has emerged from the data). In grounded theory, methods such as focus

groups and interviews tend to be the preferred data collection method, along with a comprehensive literature review which takes place throughout the data collection process. Qualitative research uses data collection methods such as interviews, participant observation, open ended questioners, documentary and audiovisual materials studies and finally the findings are conveyed subjectively through descriptions using words rather than numbers. This means, in qualitative research the main emphasis is on description and inductive discovery of evolving theory that may arise after observation is carried out or data is collected.

Like that of quantitative research method, qualitative research approaches has its own strengths and weaknesses. The advantage of a qualitative research approach is that it provide a more realistic feel of the world that cannot be experienced in the numerical data and statistical analysis used in quantitative research. It is flexible ways to perform data collection, subsequent analysis, and interpretation of collected information. Further, it provides a holistic view of the phenomena under investigation and the researcher have an ability to interact with the research subjects in their own language and on their own terms.

Despite the above advantage, qualitative research design has its own limitations. First, it required much time for data collection, analysis and interpretation i.e., the researcher has to spend a considerable amount of time in the research setting in order to examine holistically and aggregately, the interactions, reactions and activities Babbie (1995). Second, lack of standardized rules in the research design and the emphasis on giving meanings and interpretations to events and things reduces the objectivity. Third, in qualitative research the researches arrives on different conclusions based on the same information depending on the personal characteristics of the researcher (subjectivity) and inability to investigate causality between different research phenomena. Four, the findings of qualitative research cannot be statistically generalized for a broader population of interest for it is based on a small and unrepresentative number of investigated cases.

3.2.3 Mixed research approaches

Triangulation is about exposing potentially conflicting perspectives to analysis and showing that data can be integrated and cross-referenced to highlight consistency. Pervez and Kjell (2005) stressed that to enhance validity, there is a need to collect or analyze data through triangulation

and where correctness or precision is important. Hence, it is quite logical to collect information through different methods and angles. Babbie (1995) mentioned that a combination of qualitative and quantitative approaches should be viewed as an acceptable methodological approach for research occupying a variety of epistemological positions.

Creswell (2009) defined that mixed approach is one in which the researcher tends to base knowledge claims on pragmatic grounds (e.g., consequence-oriented, problem-centered, and pluralistic). It employs strategies of inquiry that involve collecting data either simultaneously or sequentially to best understand research problem. The data collection also involves gathering both numeric information (e.g., on instruments) as well as text information (e.g., on interviews, open-ended questionnaires) so that the final database represents both quantitative and qualitative information. As a result, when methods are combined, the advantages of each methodology complement those of the other, making a stronger research design that will yield more valid and reliable findings. Indeed, the inadequacies of individual methods are reduced.

In general, according to Mc Kerchar (2008) the choice among the three research approaches is guided by mainly the research problem apart from the underlying philosophy of each research method. That is, whether the research problem is based on a framework 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 participants in the project or both.

3.3 Methods adopted

The choice among the three research approaches is guided by mainly the research problem apart from the underlying philosophy of each research method Mc Kerchar (2008). That is, whether the research problem is based on a framework 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 participants in the inquiry process. Also the type of data may be numeric information to be gathered on scales of instruments or more textual information, recording and reporting the voice of the participants. In light of the research objective and hypotheses presented at the beginning of this chapter along with the underlying philosophy of each research approach, in this study, adopts mixed methods approach. Mixed method approach focuses on collecting, analyzing and mixing both quantitative and qualitative data in a single study or series of studies.

The decisive argument here is that the use of both quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach achieves alone. Mixed method research involves both collecting and analyzing quantitative and qualitative data either sequentially or concurrently. Hence, the following sections present consecutively the quantitative and qualitative aspects of the research method.

3.3.1 Research method: quantitative aspect

Survey design

This study seeks to describe both internal and external factors that affect the profitability of Ethiopian commercial banks. Thus in order to achieve the above broad research objective the researcher chooses survey research as a strategy of inquiry. The adoption of the survey design, in the study, would have the following benefits; first, generalization process from sample to population is the intention of a quantitative as opposed to a qualitative researcher. In this type of research, only one sample of subjects is studied and based upon characteristics of that sample, generalization is made back to the population where the sample is formerly chosen. Second, it would give a chance for the researcher to produce data based on empirical figures and thirdly, using survey design was economically viable. This means, it can produce a large amount of data in a short time with a low cost. Accordingly, the data for the study was collected using structured documentary reviews of banks financial statement (especially balance sheet and income statement). Further, the survey was cross sectional, in which data are collected at one point in time. The subsequent sections present a discussion of the structured survey of documents, sampling design and data analysis in an orderly manner.

Sample Design

This study seeks to describe both internal and external factors that affect the profitability of Ethiopian commercial banks. Thus for the study the target population would be all commercial banks registered by NBE and under operation in the country. Currently, in Ethiopia there are two public-owned and sixteen private commercial banks which are operating throughout the country NBE (2013/2014). But because of lack of 12 years data that is required for the analysis purpose in most of the newly established private banks are exclude from the study so, the number of sample banks are reduced to eight. The researcher do not believes that the sample size is sufficient to make sound conclusion about the population because the sample only covers around 45% of the total population. However, the inclusion of CBE in the sample which takes the lions share in the country‟s banking activity makes the sample fairly representative and reasonable.

Data Collection

In order to analyze the effect of bank specific factors on profitability of banks audited financial statements of eight banks (CBE, CBB, AIB, DB, WB, BoA, UB and NIB) for 12 consecutive years .i.e., from 2002-2013 were collected. The secondary data that were collected through structured document reviews are mainly from the records held by NBE and the banks themselves. Moreover, in order to analyze the relationship that exists between profitability and macroeconomic variables, macroeconomic data were also collected for the same years. Those macroeconomic data were mainly gathered from the records held by NBE through structured document review.

Data analysis and Model Specification

To achieve the broad research objective, the paper was primarily based on panel data, which was collected through structured document review. Thus, the collected panel data was analyzed using descriptive statistics, correlations and multiple linear regression analysis. Mean values and standard deviations were used to analyze the general trends of the data from 2002 to 2013 based on the sector sample of 8 banks and a correlation matrix was also used to examine the relationship between the dependent variable and explanatory variables. A multiple linear regression model and t-static was used to determine the relative importance of each independent variable in influencing profitability. For this study, the regression analysis known as OLS will used to estimate the relationship between profitability and its determinants. The multiple linear

regressions model was run, and thus OLS was conducted using E-views 7 econometric software package, to test the casual relationship between the firm‟s profitability and their potential determinants and to determine the most significant and influential explanatory variables affecting the profitability of Ethiopian banks.

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

$\Pi it = \alpha + \Sigma \beta k\, Xnit + \varepsilon it$..... *(1)*

Where: Π*it* is the profitability of bank *i* at time *t*, with *i = 1, N; t = 1, T*, α is a constant term, β is coefficients for the respective variables, *Xits* are *k* explanatory variables, superscript *n* denote both internal and external determinants of profitability and *εit* is the disturbance with *vi* the unobserved individual bank-specific effect and *uit* the idiosyncratic error or varies over time and entities.

The explanatory variables *Xit* are grouped, according to the discussion above, into bank-specific, industry-specific and macroeconomic variables.The general specification of model (1) with the *Xit*s separated into these three groups of determinants of profitability as follows:

$\Pi it = \alpha + \Sigma J\ j = 1\ \beta kjXitj + \Sigma Ll = 1\ \beta klXitl + \Sigma Mm = 1\ \beta kmXitm + \varepsilon it$..... *(2)*

Where: The *Xit*s with superscripts *j*, *l* and *m* denote bank-specific, industry-specific and macroeconomic determinants of profitability respectively. The equation that account for individual explanatory variables which are specified for this particular study is given as follows.

$\Pi it = \alpha + \beta 1(\text{SIZE})it + \beta 2(\text{CAP})it + \beta 3(\text{LIQ})it + \beta 4(\text{OPE})it + \beta 5(\text{MGE})it + \beta 6(\text{EME})it + \beta 7(\text{FDC})it + \beta 8(\text{BSD})it + \beta 9(\text{GDP})it + \beta 10(\text{INFL})it + \beta 11(\text{FER})it + \varepsilon it$ …… *(3)*

Where: β1 – β11 is coefficients for the respective explanatory variables, from this β1 – β7; represent coefficient of bank specific variables, β8; represent coefficient of industry specific variable, β9, β10 and β11 also represent coefficient of macroeconomic variables.

SIZE: Bank Size

CAP: Capital Adequacy

LIQ: Liquidity Risk

OPE: Operating Efficiency

MGE: Management Efficiency

LAE: Employee Efficiency

FDC: Funding Cost

BSD: Banking Sector Development

GDP: Real GDP Growth

INFL: Inflation Rate

FER: Foreign Exchange Rate

The study was used the one commonly used ratios to describe bank profitability: the return on assets (ROA).So can drive one econometrical model:

ROA Model: - Return on Assets as dependent variable

$ROA = \alpha + \beta 1(\text{SIZE})it + \beta 2(\text{CAP})it + \beta 3(\text{LIQ})it + \beta 4(\text{OPE})it + \beta 5(\text{MGE})it + \beta 6(\text{EME})it + \beta 7(\text{FDC})it + \beta 8(\text{BSD})it + \beta 9(\text{GDP})it + \beta 10(\text{INFL})it + \beta 11(\text{FER})it + \varepsilon it$ …… *(4)*

As noted in Brooks (2008) there are basic assumptions required to show that the estimation technique, OLS, had a number of desirable properties, and also so that hypothesis tests regarding the coefficient estimates could validly be conducted. If these Classical Linear Regression Model (CLRM) assumptions hold, then the estimators determined by OLS will have a number of desirable properties, and are known as Best Linear Unbiased Estimators (BLUE). Therefore, for the purpose of this study, diagnostic tests are performed to ensure whether the assumptions of the CLRM are violated or not in the model. Thus, the following section discusses about the nature and significance of the model misspecification tests.

Test for Heteroskedasticity

It has been assumed thus far that the variance of the errors is constant, $\sigma 2$ - this is known as the assumption of homoscedasticity. If the errors do not have a constant variance, they are said to be heteroskedastic. To test for the presence of Heteroskedasticity, the popular white test employed in this study.

Test for Autocorrelation

Assumption that is made of the CLRM‟s disturbance terms is that the covariance between the error terms over time (or cross-sectionally, for that type of data) is zero. In other words, it is assumed that the errors are uncorrelated with one another. If the errors are not uncorrelated with one another, it would be stated that they are "auto correlated" or that they are "serially correlated". A test of this assumption is therefore required. To test the presence of autocorrelation, the popular Durbin-Watson Test is employed.

Test for normality

As noted in Brooks (2008) a normal distribution is not skewed and is defined to have a coefficient of kurtosis of 3. One of the most commonly applied tests for normality; the Bera-Jarque formalizes these ideas by testing whether the coefficient of skewness and the coefficient of excess kurtosis are zero and three respectively. Brooks (2008) also states that, if the residuals are normally distributed, the histogram should be bell-shaped and the Bera-Jarque statistic would not be significant at 5% significant level.

Test for Multicollinearity

An implicit assumption that is made when using the OLS estimation method is that the explanatory variables are not correlated with one another. If there is no relationship between the explanatory variables, they would be said to be *orthogonal* to one another. If the explanatory variables were orthogonal to one another, adding or removing a variable from a regression equation would not cause the values of the coefficients on the other variables to change. Usually, as noted by Hair et al. (2006) correlation coefficient below 0.9 may not cause serious multicollinearity problem. In contrary to this, Kennedy (2008) argued that as any correlation coefficient above 0.7 could cause a serious multicollinearity problem leading to inefficient estimation and less reliable results.

3.3.2 Research method: qualitative aspect

In the current study qualitative data was gathered as a supplementary of the quantitative one. Open ended questionnaires were the primary data collection technique in this study for gathering data in qualitative methodologies. The questionnaires were distributed to chief finance officers of the selected banks namely CBE, CBB, AIB, DB, WB, BoA, UB and NIB. The questionnaires are distributed to eight chief finance officers of the aforementioned banks. In this study, the questionnaires were totally open ended. The questionnaires were distributed to know about the major determinant factors among the identified, the measures taken to reduce the effect of factors that affects bank profitability negatively, and their opinion regarding the matter.

In respect of the method of analyzing the data collected from open ended questionnaires, the results of the questionnaires are analyzed using triangulation with the findings of the structured record reviews. As a result, the response of the chief finance officers for the questionnaires was used for supporting the result obtained from analysis of structured record reviews or as arguments.

3.4 Conclusions and the relationship between research question/hypotheses and the data

This chapter discussed the research objective and hypotheses, research methods and different data sources which were appropriately used to address the study problems. Table 3.2 set out how each research hypotheses are addressed by the appropriate items in the survey of structured documentary reviews of company‟s financial statements. In general basing the research problems

and objective the study developed eleven hypotheses. Similarly, based on the underlying principles of research methods and the research problem mixed approach were chosen as appropriate to this research. To this end, surveys of structured documentary reviews (companies‟ financial statement and macroeconomic data) and open ended questionnaires were shown to be the appropriate methods of inquiry to answer the research problems for this study. The next chapter presents the results of each of these methods of inquiry.

Links between research question/hypotheses and on the one hand and different data sources on the other hand are presented in table 3.2 below.

Table 3.2 Relation between the research question/hypotheses and the data

Research hypotheses	Items in the questionnaire and survey of documentary reviews
RQ1: What are the determinants/factors of commercial banks profitability, in the case of Ethiopian Banks?	Open ended questionnaires distributed to the sampled commercial banks chief finance officers
RQ2: What are the internal determinants/factors of commercial banks profitability, in the case of Ethiopian Banks?	Open ended questionnaires distributed to the sampled commercial banks chief finance officers
RQ3: What are the external determinants/factors of commercial banks profitability, in the case of Ethiopian Banks?	Open ended questionnaires distributed to the sampled commercial banks chief finance officers
HP1: There is positive/negative relationship between the size of a bank and the bank's profitability.	Reviews of firm"s income statement and balance sheet. Specifically, total asset
HP2: There is positive/negative relationship between the capital adequacy of a bank and the bank's profitability.	Reviews of firm"s income statement and balance sheet. Specifically, total asset and equity
HP3: There is negative relationship between the liquidity risk of a bank and the bank's profitability.	Reviews of firm"s income statement and balance sheet. Specifically, current asset and current liability
HP4: There is insignificant negative relationship between the operational efficiency of a bank and the bank's profitability.	Reviews of firm"s income statement and balance sheet. Specifically, total cost and income
HP5: There is positive relationship between the management efficiency of a bank and the bank's profitability.	Reviews of firm"s income statement and balance sheet. Specifically, operating cost and operating income
HP6: There is negative relationship between the employee efficiency of a bank and the bank's profitability.	Reviews of firm"s income statement and balance sheet. Specifically, staff salary and total asset

HP7: There is negative relationship between the funding cost and the bank's profitability.	Reviews of firm‟s income statement and balance sheet. Specifically, interest expense and total deposit
HP8: There is negative relationship between banking sector development and bank profitability.	Reviews of firm‟s income statement and balance sheet and record held by NBE
HP9: There is positive relationship between real GDP rate and bank profitability.	Review of macroeconomic data from the records held by NBE
HP10: There is positive/negative relationship between inflation and bank profitability	Review of macroeconomic data from the records held by NBE
HP11: There is positive relationship between exchange rate and bank profitability.	Review of macroeconomic data from the records held by NBE

Chapter Four

4 Result of regression

The preceding chapter presented the research methods adopted in the study. The purpose of this chapter is to present the results of the different methods used. This chapter analysis the determinants of commercial banks profitability, using the annual balanced panel data, where all the variables are observed for each cross-section and each time period. The study has a time series segment spanning from the period 2002 up to 2013 and a cross section segment which considered eight Ethiopian commercial Banks, Such as: CBE, CBB, AIB, DB, WB, BoA, UB and NIB.

The current chapter has four sections. Under the four sections in section 4.1 the test for the classical liner regression model/CLRM were presented followed by the descriptive statistics of the dependent and independent variables under section 4.2. Section 4.3 presents correlation analysis. Then finally, the results of the regression analysis were presented under section 4.4.

4.1 CLRM Assumption and Diagnostic Test

Before going further in to panel data econometric procedures, the first issue is test the assumption of classical linear regression model (CLRM). Most Prior academic literature, as mentioned in the literature review, examines determinants of bank‟s profitability using different panel data modeling techniques. Among others, Pasiouras and Kosmidou (2007) and Ommeren (2011) use ordinary least squares (OLS) technique in which differences between the observations and estimations are minimized in terms of sum of squares. The characteristics of the model and proposed variables in equation (3) of this research are not violating the classical assumptions underlying the OLS model. These are checked by testing each assumption.

Test for average value of the error term is zero (E (ut) = 0)

The first assumption required is that the average value of the errors is zero. In fact, if a constant term is included in the regression equation, this assumption will never be violated. Therefore, since the constant term (i.e. α) was included in the regression equation, the average value of the error term in this study is expected to be zero.

Test for Heteroskedastic

It has been assumed thus far that the variance of the errors is constant. This is known as the assumption of homoscedasticity. If the errors do not have a constant variance, they are said to be heteroskedastic. To test this assumption the whit‟s test was used having the null hypothesis of Heteroskedasticity. Both F-statistic and chi-square (χ) 2 tests statistic were used.

In this study as shown in table 4.1, both the F-statistic and Chi-Square versions of the test statistic gave the same conclusion that there is no evidence for the presence of Heteroskedasticity, since the p-values were in excess of 0.05. The third version of the test statistic, "Scaled explained SS", which as the name suggests is based on a normalized version of the explained sum of squares from the auxiliary regression, also gave the same conclusion that there is no evidence for the presence of Heteroskedasticity problem, since the p-value was considerably in excess of 0.05.

Table 4.1 Heteroskedasticity Test: White

F-statistic	9.668707	Prob. F(74,21)	0.2393
Obs*R-squared	93.26267	Prob. Chi-Square(74)	0.2713
Scaled explained SS	130.9754	Prob. Chi-Square(74)	0.2183

Source: computed from E-views 7 result

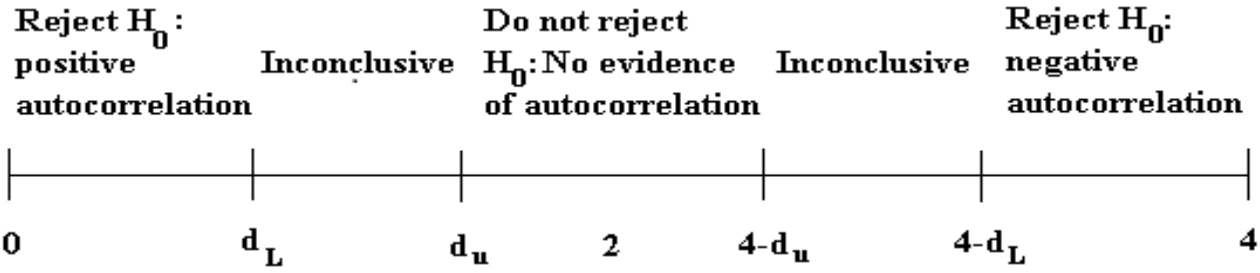
Test for Autocorrelation

According to Chris brooks (2008), assumption three said that the CLRM‟s disturbance terms is the covariance between the error terms over time (or cross-sectionally, for that type of data) is zero. In other words, it is assumed that the errors are uncorrelated with one another. In addition he said that if the errors are not uncorrelated with one another, it would be stated that they are "auto correlated" or that they are "serially correlated". To test this assumption the Durbin–Watson (DW) statistical test was applied.

The test for autocorrelation was made by using Durbin and Watson. Durbin Watson (DW) is a test for first order autocorrelation, i.e. it tests only for a relationship between an error and its

immediately previous value. DW is approximately equals to $2(1 - \hat{\rho})$, where $\hat{\rho}$ is the estimated correlation coefficient between the error term and its first order lag (Brooks 2008). The null hypothesis for the DW test is no autocorrelation between the error term and its lag. According to Brooks (2008), DW has 2 critical values: an upper critical value (dU) and a lower critical value (dL), and there is also an intermediate region where the null hypothesis of no autocorrelation can neither be rejected nor not rejected. The rejection, non-rejection, and inconclusive regions are shown on the number line in figure 4.1 bellow.

Figure 4.1 Rejection and Non-Rejection Regions for DW Test



The study used the dL and dU values for 95 observations as approximation of 96 observations. As per the DW table for 95 observations with 12 explanatory variables at 1% level of significance, the dL and dU values are 1.290 and 1.793 respectively. The Durbin-Watson test statistic value in table 4.2 was 1.576. The DW value of ROA lies in the inconclusive region where the null hypothesis of no autocorrelation can neither be rejected nor not rejected.

Table 4.2 Autocorrelation Test: Durbin Watson

Variables	DW test static result
All bank specific, industry specific and macro-economic variables	1.58

Source: computed from E-views 7 result

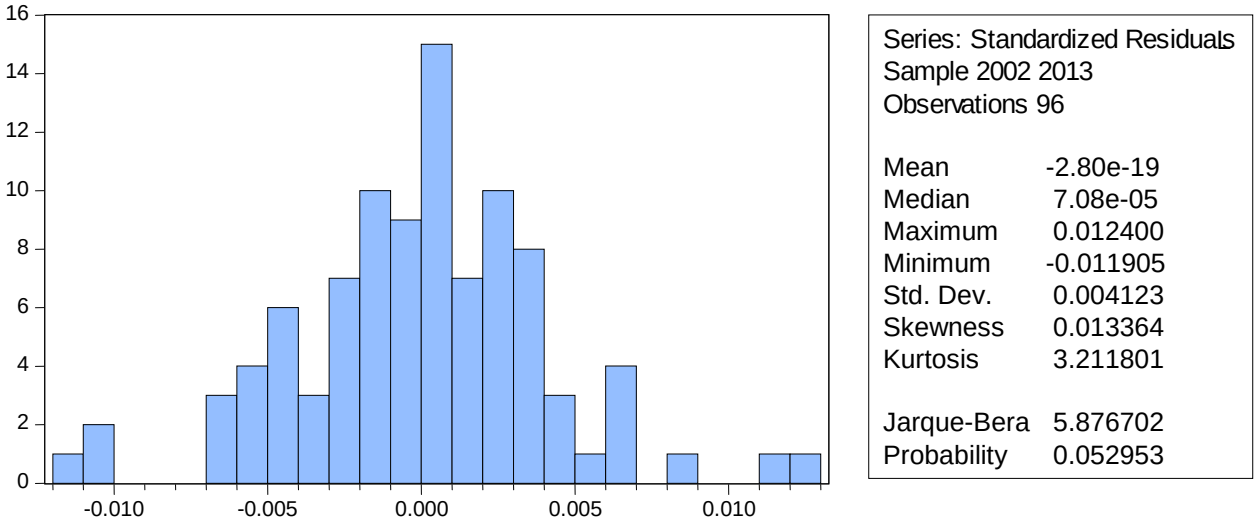
Test for Normality

Another third important diagnostic test conducted in this paper is the normality assumption (i.e. the normally distributed errors). Brooks (2008) stated that the normality assumption ($ut \sim N(0, \sigma 2)$) is required in order to conduct single or joint hypothesis tests about the model parameters. One of the most commonly applied tests for normality is the Bera-Jarque (BJ) test. BJ uses the

property of a normally distributed random variable that the entire distribution is characterized by the first two moments - the mean and the variance Brooks (2008). In case of this study, the researcher used BJ normality test to test the null hypothesis of normally distributed errors assumptions.

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

Figure 4.2 Normality test for residuals



Source: computed from E-views 7 result

Test for Multicollinearity

This assumption is concerned with the relationship exist between explanatory variables. If an independent variable is an exact linear combination of the other independent variables, then we say the model suffers from perfect collinearity, and it cannot be estimated by OLS Brooks (2008). Multicollinearity condition exists where there is high, but not perfect, correlation between two or more explanatory variables Cameron and Trivedi (2009), Wooldridge (2006). According to Churchill and Iacobucci (2005), when there is multicollinearity, the amount of information about the effect of explanatory variables on dependent variables decreases. As a

result, many of the explanatory variables could be judged as not related to the dependent variables when in fact they are. This assumption does allow the independent variables to be correlated; they just cannot be perfectly correlated. If we did not allow for any correlation among the independent variables, then multiple regressions would not be very useful for econometric analysis.

How much correlation causes multicollinearity however, is not clearly defined. While Hair *et al* (2006) argue that correlation coefficient below 0.9 may not cause serious multicollinearity problem. Malhotra (2007) stated that multicollinearity problem exists when the correlation coefficient among variables is greater than 0.75. Kennedy (2008) suggests that any correlation coefficient above 0.7 could cause a serious multicollinearity problem leading to inefficient estimation and less reliable results. This indicates that there is no consistent argument on the level of correlation that causes multicollinearity.

According to Gujarati (2004), the standard statistical method for testing data for multicollinearity is analyzing the explanatory variables correlation coefficients (CC); condition index (CI) and variance inflation factor (VIF). Therefore, in this study correlation matrix for eleven of the independent variables shown below in the table had been estimated. The results in the following correlation matrix show that the highest correlation was 0.676 which is between foreign exchange rate and banking sector development. Since there is no correlation above 0.7, 0.75 and 0.9 according to Kennedy (2008), Malhotra (2007) and Hair et al (2006) respectively, we can conclude in this study that there is no problem of multicollinearity.

Table 4.3 Correlation matrixes of independent

	SIZE	CAP	LIQ	OPE	MGE	LAE	FDC	BSD	GDP	INFL	FER
SIZE	1										
CAP	-0.37682	1									
LIQ	-0.01257	-0.02941	1								
OPE	-0.49521	0.020666	-0.08463	1							
MGE	0.329447	-0.10036	0.42325	-0.41819	1						
EME	-0.18814	0.480547	-0.05725	0.089074	0.091954	1					
FDC	-0.40424	0.214354	-0.08384	0.650289	-0.38326	0.484704	1				
BSD	0.581774	0.114086	-0.13686	-0.34481	0.226093	0.482339	0.132205	1			
GDP	0.316992	-0.05925	0.071982	-0.50882	0.298028	0.057042	-0.31619	0.263393	1		
INFL	0.390397	0.044125	0.083288	-0.44446	0.178627	0.162385	-0.1009	0.472468	0.306383	1	
FER	0.546216	0.118981	-0.11197	-0.27104	0.24655	0.47988	0.173279	0.675884	0.167192	0.356	1

Source: computed from E-views 7 result

Test for Choosing Random effect (RE) versus fixed effect (FE) models

To test the relationship between these commercial banks profitability (ROA) and identified profitability determinants, the theoretical model is developed based on the finance theory from the methodological part of this study. The important issue from the equation (1) panel model is, it is not specified whether it is fixed effects or random effects model. So the focal point the researcher concern here is, to examine whether individual effects are fixed or random. Because, there are broadly two classes of panel data estimator approaches that can be employed in empirical research: fixed effects models and random effects models. This also requires the high concern when the researcher employed the panel data approaches.

According to Gujarati (2004), if T (the number of time series data) is large and N (the number of cross-sectional units) is small, there is likely to be little difference in the values of the parameters estimated by fixed effect model (FEM) and random effect model (REM). Hence the choice here is based on computational convenience. On this score, FEM may be preferable. Since the number of time series (i.e. 12 year) is greater than the number of cross-sectional units (i.e. 8 commercial banks), FEM is preferable in this case.

According to Brooks (2008); Verbeek (2004) and Wooldridge (2006), it is often said that the REM is more appropriate when the entities in the sample can be thought of as having been

randomly selected from the population, but a FEM is more plausible when the entities in the sample effectively constitute the entire population/sample frame. Hence, the sample for this study was not selected randomly and equals to the sample frame FEM is appropriate.

4.2 Descriptive Statistics of the data

Table 4.4 presents the outcomes of the descriptive statistics for main variables involved in the regression model. The dependent variable is ROA. The remaining are the independent variables such as: SIZE, CAP, LIQ, OPE, MGE, EME, FDC, BSD, GDP, INFL, FER , Key figures, including mean, median, standard deviation, minimum and maximum value were reported. This was generated to give overall description about data used in the model and served as data screening tool to spot unreasonable figure.

Table 4.4 Descriptive Statistics

Variables	Observation	Mean	Median	Max	Min	Sta. Dev
ROA	96	0.024589	0.027001	0.040283	0.003413	0.009281
SIZE	96	22.26681	22.20619	26.007	19.5649	1.295091
CAP	96	0.112544	0.109688	0.280255	0.011223	0.041291
LIQ	96	0.494831	0.47995	0.782	0.2153	0.142753
OPE	96	0.714355	0.664573	2	0.50078	0.17949
MGE	96	0.403941	0.401007	0.613608	0.181818	0.090699
EME	96	0.010401	0.010427	0.017686	0.004915	0.003069
FDC	96	0.023709	0.023769	0.059701	0.010677	0.006962
BSD	96	0.264682	0.223627	0.499683	0.140592	0.112186
GDP	96	0.090769	0.108772	0.126442	-0.02	0.043449
INFL	96	0.14202	0.122121	0.364	-0.10572	0.126824
FER	96	11.33265	9.0192	18.19471	8.5425	3.624989

Source: computed from E-views 7 result

According to table 4.4, all variables comprised 96 observations and the profitability measure used in this study namely; ROA indicates that the Ethiopian banks attained, on average, a positive after tax profit over the last twelve years. For the total sample, the mean of ROA was 2.45% with a minimum of 0.3% and a maximum of 4%. That means the most profitable bank

among the sampled banks earned 4% 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 earned 0.3 cents of profit after tax for each birr invested in the assets of the firm. The standard deviation statistics for ROA was (0.009) which indicates that the profitability variation between the selected banks was very small. The result implies that these banks need to optimize the use of their assets to increase the return on their assets.

Regarding the explanatory variables of the model there are some interesting statistics that have to be mentioned. Despite the small dispersion in the minimum and maximum observation of ROA there could be seen relatively high variation in the equity to asset ratio. On average, the equity-to-asset ratio equals 11.25% with a maximum of 28.02%, which was considerably above the statutory requirement of NBE, even if it‟s minimum value was 1.12%. The standard deviation statistics for capital adequacy was (0.041) which shows the existence of relatively higher variation of equity to asset ratio between the selected banks compared to the variation in ROA. On the other hand, the outputs of the descriptive statistics indicate that, the ratio of liquid assets to total assets was 49.5%, on average, with a minimum of 2.15% and a maximum of 78.2%. This means despite the inverse relationship that exists between liquidity and profitability, the liquidity measure indicates that the Ethiopian commercial banks have, on average, a higher liquidity position which was somewhat higher than the statutory requirement of 15% for the last twelve years.

Furthermore, another interesting observation is that there was somewhat a higher variation in the cost-to-income ratio indicated by the range between 200% and 50%. The mean of the cost-to-income ratio equals 71.4%. The relatively higher range between the minimum and maximum value implies that the most efficient bank has a quite substantial cost advantage compared to the least efficient bank. It is especially important to notice that the mean of banking sector development was 26.4%, meaning that the banking sector development of the Ethiopian banking sector during the analyzed period 2002-2013 was high. On the other hand bank size which is measured by natural log of total asset had the highest standard deviation next to foreign exchange rate (1.295), which means it is the most deviated variable from its mean next to foreign exchange rate (3.625) compared to other variables. The smallest standard deviation was reported

in employee efficiency which was (0.003) and shows the existence of less variation among the Ethiopian banks in diversifying their source of revenue.

Table 4.4 also shows that the mean real GDP growth in Ethiopia for the last twelve years was 9.07%, with a maximum of 12.64% and a minimum of -2%. Table 4.4 also presents for GDP a small standard deviation of (0.043); this implies that economic growth in Ethiopia during the period of 2002 to 2013 remains reasonable stable and the result of this stable economic growth contribute positively to the commercial banks profitability. The other macro-economic variable employed in this study INFL, had somewhat a higher standard deviation (0.126) compared to GDP; this implies that inflation rate in Ethiopia during the study period remains somewhat unstable. The last but not the least macroeconomic variable employed in this study FER, had the higher standard deviation (3.625) compared to other remaining variables employed in the study; this implies that the foreign exchange rate in Ethiopia during the study period remains highly unstable.

4.3 Correlation analysis

Correlation is a way to index the degree to which two or more variables 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 used in this study. Correlation coefficient between two variables ranges from +1 (i.e. perfect positive relationship) to -1 (i.e. perfect negative relationship). The sample size is the key element to determine whether or not the correlation coefficient is different from zero/statistically significant. As a sample size approaches to 100, the correlation coefficient of about or above 0.20 is significant at 5% level of significance (Meyers et al. 2006). The sample size of the study was 8*12 matrixes of 96 observations which was around 100 hence the study used the above justification for significance of the correlation coefficient. Table 4.5 bellow shows the correlation coefficient between the dependent variables and independent variables.

Table 4.5 Correlation matrix of dependent and independent variables

	ROA	SIZE	CAP	LIQ	OPE	MGE	LAE	FDC	BSD	GDP	INFL	FER
ROA	1											
SIZE	0.376366	1										
CAP	0.27143	-0.37682	1									
LIQ	-0.1083	-0.01257	-0.02941	1								
OPE	-0.68975	-0.49521	0.020666	-0.08463	1							
MGE	0.345804	0.329447	-0.10036	0.42325	-0.41819	1						
EME	0.286383	-0.18814	0.480547	-0.05725	0.089074	0.091954	1					
FDC	-0.2212	-0.40424	0.214354	-0.08384	0.650289	-0.38326	0.484704	1				
BSD	0.499926	0.581774	0.114086	-0.13686	-0.34481	0.226093	0.482339	0.132205	1			
GDP	0.542392	0.316992	-0.05925	0.071982	-0.50882	0.298028	0.057042	-0.31619	0.263393	1		
INFL	0.455654	0.390397	0.044125	0.083288	-0.44446	0.178627	0.162385	-0.1009	0.472468	0.306383	1	
FER	0.438103	0.546216	0.118981	-0.11197	-0.27104	0.24655	0.47988	0.173279	0.675884	0.167192	0.355989	1

Source: computed from E-views 7 result

According to Brooks (2008), if it is stated that *y* and *x* are correlated, it means that *y* and *x* are being treated in a completely symmetrical way. Thus, it is not implied that changes in *x* cause changes in *y*, or indeed that changes in *y* cause changes in *x* rather, it is simply stated that there is evidence for a linear relationship between the two variables, and that movements in the two are on average related to an extent given by the correlation coefficient.

As could be seen in the above table 4.5, the real GDP growth rate was the most positively correlated variable with ROA. This correlation clearly shows that, as the real GDP growth rate increases, profitability also moves to the same direction. On the other hand, the cost to income ratio and the ratio of interest expense to total deposit seems to be negatively correlated with the profitability measure, indicating that, when the cost and interest expense increase, profitability moves to the opposite direction. The liquidity of banks was negatively correlated with ROA, indicated by the correlation of (-0.1083) between liquid assets to total asset ratio and ROA. But the linear relationship between LIQ and ROA was statistically not different from zero. In contrary to the liquidity, the SIZE, CAP, MGE and EME were positive and significant correlated

with profitability with a correlation of (0.376366), (0.27143), (0.345804) and (0.286383) respectively. Continuing to the correlations of the industry level variable total asset of the industry to real GDP ratio had positively correlated with ROA. The correlation for this variable was (0.499926). Similarly, all the macro economic variables used in this study, real GDP growth rate, inflation rate and foreign exchange rate had positive and significant correlation with ROA with a correlation of (0.542392), (0.455654) and (0.438103) respectively.

4.5 Results of regression analysis

Under the following regression outputs the beta coefficient may be negative or positive; beta indicates that each variable‟s level of influence on the dependent variable. P-value indicates at what percentage or precession level of each variable is significant. R2 values indicate the explanatory power of the model 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: As presented in the third chapter the empirical model used in the study in order to identify the factors that can affect Ethiopian banks profitability was provided as follows:

$$ROAit = \alpha + \beta 1(\text{SIZE})it + \beta 2(\text{CAP})it + \beta 3(\text{LIQ})it + \beta 4(\text{OPE})it + \beta 5(\text{MGE})it + \beta 6(\text{EME})it$$
$$\beta 7(\text{FDC})it + \beta 8(\text{BSD})it + \beta 9(\text{GDP})it + \beta 10(\text{INFL})it + \beta 11(\text{FER})it + \varepsilon it$$

The estimation result of the operational panel regression model used in this study is presented in table 4.6. From table 4.6 the R-squared statistics and the adjusted-R squared statistics of the model was 80.26% and 75.65% respectively. The result indicates that the changes in the independent variables explain 75.65% of the changes in the dependent variable. That is Size, equity to total asset ratio, liquidity risk, operational efficiency, management efficiency, employee efficiency, funding cost, banking sector development, gross domestic product, inflation rate and foreign exchange rate collectively explain 75.65% of the changes in ROA. The remaining 24.35% of changes was explained by other factors which are not included in the model. Thus these variables collectively, are good explanatory variables of the profitability of commercial banks in Ethiopia. The null hypothesis of F-statistic (the overall test of significance) that the R2 is equal to zero was rejected at 1% as the p-value was sufficiently low. F value of 0.000 indicates strong statistical significance, which enhanced the reliability and validity of the model.

Based on the results shown in table 4.6, all bank-specific independent variables except management efficiency, employee efficiency had statistically significant impact on profitability. Banking sector development, the only industry specific independent variable has also significant impact on profitability. On the other hand, among the three macro-economic independent variables used in this study the only significant variable was GDP. Among the significant variables, Size, capital, liquidity and operating efficiency were significant at 1% significance level since the p-value for both variables were almost 0.000. Whereas banking sector development were significant at 5% significance level. Finally, funding cost and real GDP growth rate was significant at 10% significance level (p-value=0.0587 and 0.0744) respectively.

Table 4.6 Regression Result for factors affection Ethiopian banks profitability

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.125878	0.037031	-3.399223	0.0011
SIZE	0.007594	0.001848	4.108453	0.0001***
CAP	0.084914	0.019906	4.265685	0.0001***
LIQ	-0.016453	0.005165	-3.185599	0.0021***
OPE	-0.029998	0.004909	-6.111082	0.0000***
MGE	0.007474	0.010293	0.726076	0.4700
EME	-0.49898	0.372788	-1.338530	0.1847
FDC	-0.281908	0.146907	-1.918950	0.0587*
BSD	-0.062690	0.031415	-1.995535	0.0495**
GDP	0.030420	0.016817	1.808921	0.0744*
INFL	0.000555	0.005745	0.096620	0.9233
FER	0.000938	0.000851	1.101756	0.2740

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.802631	Mean dependent var	0.024589
Adjusted R-squared	0.756492	S.D. dependent var	0.009281
S.E. of regression	0.004580	Akaike info criterion	-7.759096
Sum squared resid	0.001615	Schwarz criterion	-7.251569
Log likelihood	391.4366	Hannan-Quinn criter.	-7.553945
F-statistic	17.39620	Durbin-Watson stat	1.576061
Prob(F-statistic)	0.000000		

****, **, and * denote significance at 1%, 5%, and 10% levels respectively.*

Source: computed from E-views 7 result

Besides, table 4.6 also shows that the coefficient of liquidity risk, operational efficiency, employee efficiency, funding cost and banking sector development against ROA were negative as far as the coefficients for those variables are negative (-0.016453), (-0.029998), (-0.49898), (-0.281908) and (-0.062690) respectively. This indicates that there was an inverse relationship between the aforementioned five independent variables and ROA. Thus the increase of those variables will lead to a decrease in ROA.

On the other hand, variables like size, capital adequacy, management efficiency, gross domestic product, inflation rate and foreign exchange rate had a positive relationship with profitability as far as their respective coefficients were (0.007594), (0.084914), (0.007474),(0.030420), (0.000555) and (0.000938). This revealed that there was a direct relationship between the above six independent variables and ROA. In general as per the regression results provided in table 4.6 among the 11 repressors used in this study seven of them were significant.

In general, so far, the results of the documentary analysis which includes tests for the classical linear regression model, descriptive statistics, correlation matrix and regression analysis have been presented. The results of the tests for the classical linear regression model showed as the data fit the basic assumptions of CLRMs. On the other hand, the remaining results of the documentary analysis and primary data were used to assess the link that exists between bank-specific, industry-specific and macro-economic determinants of bank profitability (ROA).

Chapter Five

5 Analysis and discussions

The previous chapter presented mainly the outputs of the documentary result. Accordingly, based on the outputs presented in the previous chapter, this chapter presents the analysis. The chapter is organized in two sections, the first section, 5.1 presents the research hypotheses presented in chapter three and section 5.2 discusses the results and attempts to test hypotheses.

5.1 Questions and research hypotheses

As stated in chapter one the broad objective of this study was to identify the factors that affect bank profitability in Ethiopia. Further, as noted in the previous chapters (chapter one and three), in order to achieve this broad objective the study developed the following three research questions and eleven hypotheses.

Research questions (RQ):

RQ1: What are the determinants/factors of commercial banks profitability, in the case of Ethiopian Banks?

RQ2: What are the internal determinants/factors of commercial banks profitability, in the case of Ethiopian Banks?

RQ3: What are the external determinants/factors of commercial banks profitability, in the case of Ethiopian Banks?

Research hypotheses (Ho):

HO1: There is positive/negative relationship between bank size and bank's profitability.

HO2: There is positive/negative relationship between capital adequacy and bank's profitability.

HO3: There is negative relationship between Liquidity Risk and bank's profitability.

HO4: There is negative relationship between operating efficiency and bank's profitability.

HO5: There is positive relationship between management efficiency and bank's profitability.

HO6: There is negative relationship between employee efficiency and bank's profitability.

HO7: There is negative relationship between funding cost and bank's profitability.

HO8: There is a negative relationship between banking sector development and bank profitability.

HO9: There is positive relationship between real gross domestic product and bank's profitability.

HO10: There is positive/negative relationship between Inflation Rate and bank's profitability.

HO11: There is positive relationship between foreign exchange rate and bank's profitability.

In order to be able to investigate whether each of the research hypotheses presented above hold in the context of Ethiopian commercial banks and in order to address the specific research question presented above, the next section tries to present the analysis concurrently.

5.2 Analysis of results

This section of the chapter discusses the analysis of the results. The analysis is based on the theoretical framework and the data collected through the data collection instruments. The data are analyzed in light of the specific research questions and hypotheses stated. Hence, the analysis focuses mainly on the results of the regression analysis and use open-ended questionnaires to support result obtained from document review for the selected bank-specific, industry-specific and macro-economic factors that have an impact on bank profitability. These selected factors are bank size, capital adequacy, liquidity risk, operational efficiency, management efficiency, employee efficiency, funding cost, banking sector development, real growth domestic product, inflation and exchange rate.

Bank Size

The natural logarithm of total asset (SIZE) was used as proxy for size in the regression model according to the studies of Boyd *et al.,* (1993). The result indicates that size is positive and statistically significant to bank profitability. This 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. The larger the bank size, the more profitable the bank. It could also mean that bank size is associated with diversification which may impact favorably on risk and product portfolio. The data of this study shows the size of all Ethiopian commercial banks which is measured by log of total asset is increased for the last 12 years. Consequently, this improvement leads to the profitability of banks in Ethiopia. The result implies that larger banks enjoy the higher profit than smaller banks in Ethiopia banking sector because they are exploiting the benefit of economies of scale. The finding of this study was in consistent with the findings of Akhaveinet al. (1997) and Smirlock (1985) and Damena (2011). Similarly, the result generated from the primary data also supports the output of the regression analysis fully. That is Ethiopian banks profitability increases as the size of the banks increase, which strengths the fact that larger banks are enjoying higher profit than smaller banks of the country.

Capital adequacy

The coefficient of capital adequacy which is measured by the equity to asset ratio was positive and statistically significant at 1% significance level (p-value=0.0001). The positive coefficient for capital adequacy was in favor of the signaling or bankruptcy costs hypotheses and in opposite to the risk-return trade-off hypothesis. Moreover, the coefficient of the ratio of equity to asset which was relatively higher as compared to other variables shows that an increase in capital adequacy will result in increased profitability. This is in line with the expectation as a bank with a sound capital position is able to pursue business opportunities more effectively and has more time and flexibility to deal with problems arising from unexpected losses, thus achieving increased profitability. So from the findings we can conclude as capital adequacy was one of the main determinants of profitability of banks in Ethiopia. Further, the finding was also consistent with previous studies of Kosmidou (2008). Pasiouras & Kosmidou (2007), Athanasoglou et al. (2008), Damena (2011), Amdemikael (2012) and Habtamu (2012) and it also indicates that well capitalized Ethiopian 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. Moreover the result was also consistent with the existed reality in the Ethiopian banking industry, which shows the existence of a direct relationship between capital adequacy and bank profitability i.e., the most profitable bank CBE was also the most capitalized bank of the country.

Correspondingly, the result obtained from the primary data reveals the existence of similar fact or the result clearly supports the regression output. As per the questionnaires distributed to the chief finance officers of the selected banks, capital adequacy is one of the major factors that can affect Ethiopian banks profitability certainly. That means an increase in capital will lead to an increase in profitability by bringing good will to them, which gives for them the ability to finance their financial needs through debt without the need for collateral. That means having more and more capital leads to more and more profitability by increasing their loan providing capacity.

Liquidity risk

Concerning the liquidity risk, the regression results of this study implies that the relation between liquidity risk and ROA is negative and significant at 1% significance level (p-value=0.0021). The variable, liquid assets to total assets ratio was used as a proxy for liquidity in the model. The result indicates that the liquidity variable has a significantly negative influence on bank profitability. This implies that high figures for this variable mean low profitability. Since high figures for this variable denotes low liquidity, higher liquidity is associated with lower profitability. The result is inconsistent with the assertion that holding assets in a highly liquid form tends to reduce income. The result is however in line with the findings of Molyneux*et al.,* (1992) and Guru *et al.* (1999) who concluded in their study that liquidity negatively correlates with profitability.

In addition to the findings of the regression analysis, the result obtained from the primary data reveals the existence of similar fact or the result clearly supports the regression output. As per the questionnaires distributed to the chief finance officers of the selected banks, liquidity risk is one of the major factors that can affect Ethiopian banks profitability certainly. That means both of them proves the existence of negative or inverse relationship between liquidity and profitability of Ethiopian banks an increase in liquidity will lead to decrease in profitability.

Operational efficiency

The coefficient of the ratio of cost to income, which provides information on the efficiency of the company regarding expenses relative to income, was negative and statistically significant at 1% significance level (p-value=0.0000) which is in line with a prior expectation and makes the

variable an important determinant of Ethiopian banks profitability. This showed that minimizing commercial banks costs in Ethiopia would certainly improve the banks performance in general and profitability in particular. This finding was consistent with many previous studies, e.g. Sufian & Chong (2008) and Pasiouras & Kosmidou (2007), Trujillo-Ponce (2012) For instance, Sufian & Chong (2008) in their work on the Philippines banks realized as cost to income ratio exhibits a negative and significant impact on Philippines bank‟s profitability. The results imply that an increase/decrease in these expenses reduces/increases the profits of financial institutions operated in Philippines. Coming back to this particular study, the result revealed that in the context of the Ethiopian banking industry like that of Sufian & Chong (2008) result, the ratio of cost to income exhibits a negative and significant impact on the ROA. Thus, the ratio of cost to income was statistically significant in explaining the variability in ROA of commercial banks in Ethiopia. The result generated through primary data also supports the above fact. Therefore, operational efficiency exists as one of the major determinant factor that can influence Ethiopian banks profitability in an unfavorable way. Moreover, this result was also consistent with the existed reality in the Ethiopian banking industry where the efficiency was definitely lower.

Management efficiency

One would expect that the impact of management efficiency on profitability is positive and significant. However, even if the coefficient of management efficiency was positive as expected, it was not statistically significant even at 10% significance level (p-value= 0.4700), insinuating that its influence is negligible. Moreover, the insignificant parameter indicates that the structure does not affect Ethiopian banks profitability. Thus the hypothesis that states there is a significant relationship between management efficiency and profitability may be rejected or data did not support the hypothesis. Referring to previous studies, the results concerning management efficiency are mixedVincent (2013) found positive but insignificant relationship between management efficiency and bank profits but, Indranarain (2009), Bourke (1989) and Molyneux & Thornton (1992). Found a significant positive relationship between management efficiency and bank profits.

Regardless of the findings of the regression analysis, the result of the primary data reveals that the management efficiency of banks is one of the major determinants of Ethiopian banks profitability. But, the output of the regression analysis and the questionnaires are in agreement in

relation to the direction of the effect of management efficiency as far as both of them proves the existence of positive or direct relationship between management efficiency and profitability of Ethiopian banks. Therefore, conclusion about the impact of Ethiopian bank‟s management quality on their performance remains ambiguous and further research is required.

Employee efficiency

One would expect that the impact of employee efficiency on profitability is negative and significant. However, even if the coefficient of employee efficiency was negative as expected, it was not statistically significant even at 10% significance level (p-value= 0.1847). The variable, staff salary over total asset (EME) was used as a proxy for in the model. The result indicates that the employee efficiency variable has an insignificantly negative influence on bank profitability. The models found the variables to be insignificant in determining profitability in the long-run. This confirms and justifies our introduction of these variables in our models as has never been done in any previous literatures in Ethiopian context, the result shows that the Ethiopian Banking industry may not truly benefited from staff efficiency. Referring to previous studies, the results concerning labor efficiency Aremu and Mukaila (2013) found a significant negative relationship between labor efficiency and bank profits.

Again regardless of the findings of the regression analysis, the result of the primary data reveals that the employee efficiency of banks is one of the major determinants of Ethiopian banks profitability. But, the output of the regression analysis and the questionnaires are lack agreement in relation to the direction of the effect of employee efficiency as far as both of them proves the existence of negative relationship between employee efficiency and profitability of Ethiopian banks. Therefore, conclusion about the impact of employee efficiency on commercial banks performance remains ambiguous and further research is required.

Funding costs

One would expect that the impact of funding cost on profitability is negative and significant. That means the coefficient of funding cost was negative as expected, at 10% significance level (p-value= 0.0587), funding cost had an important impact on the commercial banks profitability in Ethiopia. The result also shows in the recent period, Ethiopian banks have improved their funding structures by replacing volatile wholesale and parental funding with stable customer

deposits. Ethiopian banks took some measures in order to reduce costs because initially wholesale funding came at a higher cost compared to retail but after the expenses were incorporated in a broad deposit-gathering branch network, the net cost of wholesale was actually lower. The wholesale funding approach reduces the asset-liability duration mismatch risk, which is one of the major concerns of Ethiopian banks and this is one of the reasons why these banks were oriented to the wholesale area. So, due to the changes that the Ethiopian banks had passed through we can say that these mutations were the reason why we registered a negative relationship between funding costs and profitability, although the economic theory says otherwise. This confirms and justifies our introduction of these variables in our models as has never been done in any previous literatures in the context of the Ethiopian banking industry like Dietrich and Wanzenried (2009) and Lindblom et al. (2010) that of result, the ratio of cost to income exhibits a negative and significant impact on the ROA. The result of the primary data also supports the finding of the regression output. Therefore, funding cost exists as one of the major determinant factor that can influence Ethiopian banks profitability.

Banking sector development

Concerning the banking sector development, the regression results of this study implies that the relation between banking sector development and ROA is negative and significant at 5% significance level (p-value=0.0495). The variable, total asset of the industry over real GDP (BSD) was used as a proxy for banking sector development in the model. The result indicates that the banking sector development variable has a significantly negative influence on bank profitability. This implies that high figures for this variable mean low profitability. Since the richer the country, the more active are all financial intermediaries. The greater the development of a country's banks, the tougher is the competition, the greater is the efficiency, and the lower are the bank margins and profits. The result is consistent with Demirguc Kunt and Huizinga (1998) they using bank-level data for a large number of industrial and developing countries, present evidence about the impact of financial development and structure on bank performance. They measure the relative importance of bank or market finance by the relative size of stock aggregates, by relative trading or transaction volumes, and by indicators of relative efficiency.

The primary data also reveals as banking sector development has a significant factor that influences Ethiopian banks profitability. So, from the findings of the regression analysis and the

questionnaire one can conclude that as Ethiopian banks profitability is determined by the level of banking sector development. Therefore, banking sector development exists as one of the major determinant factor that can influence Ethiopian banks profitability in an unfavorable way.

Real GDP

Turning to the macroeconomic variables, the researcher observe that real GDP has highly statistical significant and positive impact on ROA at 10% significance level (P-value=0.0744). These results about GDP support the argument of the positive association between economic growth and the financial sector performance. This show as the stimulated Ethiopian economy over the study period creates a new and potential demand for financial services. The results for positive coefficients are similar to the parameters that are observed and revealed by the numbers of researchers (e.g. Demirguc-Kunt*et al.,* (1998), Bikker*et al.,* (2002) and Athanasoglou*et al.,* (2008)) concluded that positive and strong correlation existed between economic growth (GDP) and bank profitability. This is because the default risk is lower in upturn than in downturn economy and another important point is higher economic growth may lead to a greater demand for both interest bearing and non-interest bearing financial services.

Like with the empirical evidence, the result obtained from primary data also justified a positive and highly significant impact of Ethiopia real GDP growth and banks profitability in terms of ROA. This is because; the current Ethiopian economy growth could create a new and potential demand for financial services and it might reduce the probability of default loan.

Inflation

The coefficient of inflation was positive as anticipated, but it was not statistically significant, thus, the effect of inflation on Ethiopian banks profitability is not significant. The findings also suggested that as inflation is not a determinant of bank‟s profitability in Ethiopia as far as the parameter for this variable is insignificant as illustrated by the large p-values of 0.9233. In terms of inflation impact on ROA, previous studies of Demirguc-Kunt & Huizinga (1999) showed a positive result and this implies that during the period of the study, inflations was anticipated which gave banks the opportunity to adjust the interest rates accordingly, resulting in revenues that increased faster than costs, with a positive impact on profitability. Referring to previous studies, the results concerning inflation are mixed. Demirguc-Kunt & Huizinga, (1999) find a positive relationship between inflation rate and bank profitability. However, Pasiouras & Kosmidou (2007) found a negative relationship between inflation rate and bank profits.

Foreign exchange rate

The proxy for foreign exchange rate was the official exchange rate it refers to the exchange rate determined by national authorities or to the rate determined in the legally sanctioned exchange market. It is calculated as an annual average based on monthly averages (local currency units relative to the U.S. dollar). The coefficient of foreign exchange rate was positive as estimated, but it was not statistically significant, thus, the effect of foreign exchange rate on Ethiopian banks profitability is not significant. The findings also suggested that as foreign exchange rate is not a determinant of bank‟s profitability in Ethiopia as far as the parameter for this variable is insignificant as illustrated by the large p-values of 0.2740. In relation to previous literature the results for positive coefficients are similar to the parameters that are observed and revealed by the numbers of researchers Evans. O, (2014) and Songul Kakilli (2013).

Regardless of the findings of the regression analysis, the result of the primary data reveals that the foreign exchange rate is one of the major determinants of Ethiopian banks profitability. But, the output of the regression analysis and the questionnaires are in agreement in relation to the direction of the effect of management efficiency as far as both of them proves the existence of positive or direct relationship between foreign exchange rate and profitability of Ethiopian banks.

The following table 5.1 presents the summary of hypothesized expected sign and actual sign for the relationship between the explanatory variables (independent variables) and banks profitability (dependent variables).

Table 5.1 Summary of actual and expected signs of explanatory variables on the dependentvariables

Explanatory variables	Expected impact on liquidity	Actual impacts
		Profitability (ROA)
SIZE	Positive/negative & Significant	Positive & significant
CAP	Positive/negative & Significant	Positive & significant
LIQ	Negative & Significant	Negative & significant
OPE	Negative & Significant	Negative & significant
MGE	Positive & Significant	Positive & insignificant
LAE	Negative & Significant	Negative & insignificant
FDC	Negative & Significant	Negative & significant
BSD	Negative & Significant	Negative & significant
GDP	Positive & Significant	Positive & significant
INFL	Positive/negative & Significant	Positive & insignificant
FER	Positive & Significant	Positive & insignificant

Source: own computation

This chapter discussed the analysis of the results of multiple linear regressions model and the result of the open-ended questionnaires.To summarize the above data analysis Ethiopian banks profitability are highly affected by bank-specific (internal) factors than that of external one. That means except management efficiency and employee efficiency all the bank-specific factors included in this study are proved as they were the major determinants of Ethiopian banks profitability. On the other hand, among the external variables included in this study the only factor that can affect Ethiopian banks profitability was banking sector development and real GDP. Thus, next chapter will discuss the conclusions and recommendations of the study.

Chapter six

6 Conclusions and Recommendations

The previous chapter presented the analysis of the findings, while this chapter deals with the conclusions and recommendations provided based on the findings of the study. The following sections discussed about the final conclusion remarks of the study and applicable recommendations. Accordingly this chapter is organized into two sections. The first section, section 6.1 presents the conclusions whereas the second section, section 6.2 presents the recommendations.

6.1. Conclusions

The main objective of the study was to identify the main bank-specific, industry-specific and macro-economic factors that can affect Ethiopian banks profitability and to what extent these determinants exert impact on Ethiopian banks profitability. In doing so, previous studies on bank profitability have been reviewed and it is summarized that the profitability of bank is usually expressed as a function of internal and external determinants. The internal determinants refers to the factors originate from bank accounts (balance sheets and income statement accounts) and therefore could be termed micro or bank-specific determinants of profitability. The external determinants are variables that are not related to bank management but reflect the economic and legal environment that affects the operation and performance of financial institutions. Empirical results from previous studies conclude that internal factors explain a large proportion of banks profitability; nevertheless external factors have also an impact on the performance.

A number of explanatory variables have been proposed for both categories, according to the nature and purpose of each study. Studies dealing with internal determinants employ variables such as size, capital adequacy, liquidity risk, operating efficiency, employee efficiency, funding cost etc. while for external determinants, several factors have been suggested as impacting on profitability and these factors can further distinguish between control variables that describe the macroeconomic environment, such as inflation, interest rates and economic growth, and variables that represent industry characteristics. The latter refer to, banking sector development, market concentration, industry size and ownership status.

Based on the review on previous studies and banking area theories, the present study investigated the impact of some selected bank-specific, industry-specific and macro-economic factors on the profitability of the Ethiopian banking industry over the period of 2002 to 2013. The bank-specific factors that were used in this study include variables such as size, capital adequacy, liquidity risk, operating efficiency, management efficiency, employee efficiency, and funding cost. On the other hand in this study only one industry-specific variable and three macroeconomic conditions indicator variables were employed (banking sector development, real GDP growth, inflation rate and foreign exchange rate). To comply with the objective of this research, the study also used an appropriate econometric methodology for the estimation of variables coefficient under fixed effect regression models. The quantitative data were mainly obtained from NBE through documentary analysis in order to identify and measure the determinants of banks profitability. In specific, multiple regression analysis is adopted to measure the effect of determinants on banks profitability quantitatively and primary data also used to supplement the documentary analysis.

For testing the research hypotheses, a sample size of eight Ethiopian commercial banks were selected and the necessary financial data were collected for the time period of 2002 to 2013. The empirical findings and the primary data results on the impact of bank profitability in Ethiopia for the sample suggest the following conclusions.

First, the natural logarithm of total assets has a positive impact on ROA with strong significance coefficient. This indicates that as larger banks of the country experience more significant increases in profitability through economies of scale.

Second, as expected, the result showed a positive relationship between capital adequacy and profitability with strong statistical significance, showing that an increase in capital adequacy will result in increased profitability. This is in line with the expectation as a bank with a sound capital position is able to pursue business opportunities more effectively and has more time and flexibility to deal with problems arising from unexpected losses, thus achieving increased profitability.

Third, as expected the liquidity risk has a negative impact on ROA with strong significance coefficient. This indicates that as banks that hold more liquid asset experience less significant increase in profitability.

Fourth, again as expected, the result showed a negative relationship between operational efficiency and profitability with strong statistical significance. This shows that as minimizing commercial banks operating costs in Ethiopia would certainly improve the banks performance.

Fifth, again as expected, the result showed a negative relationship between funding cost and profitability with statistical significance. This shows that as minimizing commercial banks interest expense in Ethiopia would certainly improve the banks performance.

Sixth, as expected, the result showed a negative relationship between banking sector development and profitability with statistical significance, showing that an increase in banking sector development will result in decrease in profitability. This is in line with the expectation as a greater the development of a country's banks, the tougher is the competition, the greater is the efficiency, and the lower are the bank margins and profits. The more underdeveloped the stock market, the greater are the bank profits.

Lastly, the GDP growth also has statistically significant and positive relationship with profitability. On the other hand, management efficiency, labor efficiency, inflation and foreign exchange rate are factors that have little or no impact on the profitability of Ethiopian banks in this model as far all those variables were not significant even at 10% significance level.

In the Ethiopian banking industry, as per the result of descriptive statistics there was excess liquidity ratio. Almost all the banks had excess liquidity ratio which is above the liquidity requirement set by the NBE. This shows as the Ethiopian banks are still underutilized their capacity as far as they prefer to maintain higher liquidity position rather than putting it on different investments or providing it to customers in the form of loan which in turn results in an increase in their profitability. This was more specifically exaggerated in the large government owned bank, CBE.

6.2 Recommendations

In order to hold up risky surprises and maintaining financial stability, it is vital to identify the determinants that mostly influence the overall performance of Ethiopian commercial banks. Therefore, based on the findings of the study the following possible recommendations were forwarded:

Bank size, capital adequacy, liquidity risk, operational efficiency, funding cost are significant key internal drivers of profitability of commercials banks in Ethiopia. Indeed focusing and reengineering the institutions alongside these indicators could enhance the profitability as well as the performance of the commercial banks in Ethiopia.

The explanatory powers of bank-specific variables are far more important in explaining the variability in ROA for commercial banks in Ethiopia than external variables. But among the external factors included in this study banking sector development and GDP growth rate exists as significant key drivers of profitability of Ethiopian banks. This is a clear signal to all commercial banks in Ethiopia that they cannot ignore the industry structure and macroeconomic indicators when strategizing to improve on their profits or performance. Thus, banks in Ethiopia should not only be concerned about internal structures and policies, but they must consider both the internal environment and the macroeconomic environment together in fashioning out strategies to improve their performance or profits.

As far as lack of innovative products and fear of risky investments by banks themselves are also factors that can affect Ethiopian banks profitability negatively, Ethiopian banks should try their best in order to provide new banking services and to participate in risky investment areas which may in turn increases their profitability significantly.

In general, as many literatures supports financial intermediation in Ethiopia is still in its early stages even by the standards of other low-income countries: more than 90 percent of the population is unbanked (versus an average of 60-70 percent elsewhere in Africa); and many other metrics such as the total number of banks, banks contribution to GDP, bank accounts per person, branches per person, and bank credit per person are lower in Ethiopia compared to other

African countries. Thus, Ethiopian commercial banks should focus to reach this unmet demand of finance by adjusting their strategy with the government regulation.

Finally, the study sought to investigate the factors that influence profitability of commercial banks in Ethiopia. However, the variables used in the statistical analysis did not include all factors that can affect Ethiopian banks profitability. Thus, future research could incorporate factors such as, number of branches, government regulation and broad money supply.

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Appendices

Appendix –I: Tests for the Heteroskedasticity Test: White

Heteroskedasticity Test: White

F-statistic	9.668707	Prob. F(74,21)	0.2393
Obs*R-squared	93.26267	Prob. Chi-Square(74)	0.2713
Scaled explained SS	130.9754	Prob. Chi-Square(74)	0.2183

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 04/19/15 Time: 06:55
Sample: 1 96
Included observations: 96
Collinear test regressors dropped from specification

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.000997	0.010114	-0.098590	0.9224
SIZE	0.000464	0.000796	0.582332	0.5665
SIZE^2	-1.25E-05	1.61E-05	-0.771359	0.4491
SIZE*CAP	-0.000607	0.000319	-1.906505	0.0704
SIZE*LIQ	-6.80E-05	8.67E-05	-0.783983	0.4418
SIZE*OPE	1.46E-05	0.000114	0.128519	0.8990
SIZE*MGE	0.000215	0.000132	1.627118	0.1186
SIZE*EME	-0.009141	0.007928	-1.152951	0.2619
SIZE*FDC	-0.001625	0.001891	-0.859558	0.3997
SIZE*BSD	0.000123	0.000605	0.202998	0.8411
SIZE*GDP	0.000379	0.000400	0.948429	0.3537
SIZE*INFL	0.000144	0.000110	1.317546	0.2019
SIZE*FER	1.04E-05	1.73E-05	0.598754	0.5557
CAP	0.010455	0.006882	1.519192	0.1436
CAP^2	0.007810	0.002784	2.805452	0.0106
CAP*LIQ	0.005294	0.002222	2.382456	0.0267
CAP*OPE	-0.001428	0.001645	-0.868417	0.3950
CAP*MGE	-0.002977	0.003883	-0.766819	0.4517
CAP*EME	-0.084753	0.121191	-0.699333	0.4920
CAP*FDC	-0.186142	0.039344	-4.731155	0.0001
CAP*BSD	-0.006756	0.009702	-0.696340	0.4939
CAP*GDP	0.008351	0.005726	1.458590	0.1595
CAP*INFL	0.003355	0.001850	1.813073	0.0841
CAP*FER	0.000570	0.000289	1.972622	0.0618
LIQ	-0.000698	0.002267	-0.307933	0.7612
LIQ^2	-8.76E-05	0.000263	-0.333555	0.7420
LIQ*OPE	0.002364	0.001102	2.145155	0.0438
LIQ*MGE	0.000522	0.000631	0.827291	0.4174
LIQ*EME	-0.033989	0.019618	-1.732580	0.0978
LIQ*FDC	-0.004880	0.011547	-0.422625	0.6769
LIQ*BSD	0.000282	0.003190	0.088482	0.9303
LIQ*GDP	0.000305	0.002120	0.143706	0.8871
LIQ*INFL	-0.000678	0.000359	-1.887363	0.0730
LIQ*FER	4.37E-05	8.09E-05	0.540717	0.5944
OPE	-0.004758	0.002676	-1.778169	0.0899
OPE^2	0.001127	0.000463	2.436516	0.0238

OPE*MGE	-0.001152	0.001271	-0.906471	0.3750
OPE*LAE	0.061689	0.049036	1.258027	0.2222
OPE*FDC	-0.019396	0.017790	-1.090248	0.2880
OPE*BSD	-0.018550	0.006934	-2.675152	0.0142
OPE*GDP	0.006810	0.001551	4.389209	0.0003
OPE*INFL	0.002548	0.001018	2.503991	0.0206
OPE*FER	0.000535	0.000219	2.438315	0.0237
MGE	-0.003749	0.003459	-1.083831	0.2907
MGE^2	0.000382	0.000683	0.559781	0.5816
MGE*EME	0.030318	0.034857	0.869793	0.3942
MGE*FDC	-0.011821	0.020042	-0.589817	0.5616
MGE*BSD	-0.008924	0.005476	-1.629568	0.1181
MGE*GDP	-0.002029	0.002515	-0.806812	0.4288
MGE*INFL	0.001865	0.000764	2.442604	0.0235
MGE*FER	0.000162	0.000148	1.095902	0.2855
EME	0.175107	0.179394	0.976102	0.3401
EME^2	-1.428004	1.070935	-1.333418	0.1967
EME*FDC	1.289556	0.615878	2.093848	0.0486
EME*BSD	0.341327	0.180313	1.892975	0.0722
EME*GDP	0.084437	0.067717	1.246914	0.2262
EME*INFL	-0.015949	0.025426	-0.627273	0.5372
EME*FER	-0.008467	0.004992	-1.696245	0.1046
FDC	0.077524	0.039518	1.961721	0.0632
FDC^2	-0.373601	0.220544	-1.693995	0.1050
FDC*BSD	0.083806	0.081016	1.034433	0.3127
FDC*GDP	-0.008507	0.038709	-0.219767	0.8282
FDC*INFL	0.026885	0.016555	1.623960	0.1193
FDC*FER	-0.001582	0.002250	-0.703148	0.4897
BSD	-0.026193	0.009561	-2.739618	0.0123
BSD^2	0.025774	0.043820	0.588177	0.5627
BSD*GDP	0.306810	0.136260	2.251661	0.0352
BSD*INFL	0.007259	0.010493	0.691786	0.4966
BSD*FER	-0.000827	0.001536	-0.537999	0.5962
GDP	-0.008561	0.018762	-0.456319	0.6528
GDP^2	-0.105976	0.052569	-2.015937	0.0568
GDP*INFL	-0.060749	0.032383	-1.875953	0.0746
GDP*FER	-0.004527	0.002656	-1.704240	0.1031
INFL	-0.001844	0.001872	-0.984855	0.3359
INFL^2	-0.000789	0.002575	-0.306482	0.7623

R-squared	0.971486	Mean dependent var	2.09E-05
Adjusted R-squared	0.871009	S.D. dependent var	4.03E-05
S.E. of regression	1.45E-05	Akaike info criterion	-19.40405
Sum squared resid	4.41E-09	Schwarz criterion	-17.40065
Log likelihood	1006.394	Hannan-Quinn criter.	-18.59424
F-statistic	9.668707	Durbin-Watson stat	2.324680
Prob(F-statistic)	0.000000		

Appendix-II: Regression Results For Factors affecting Bank Profitability

Dependent Variable: ROA
Method: Panel Least Squares
Date: 04/19/15 Time: 06:03
Sample: 2002 2013
Periods included: 12
Cross-sections included: 8
Total panel (balanced) observations: 96

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.125878	0.037031	-3.399223	0.0011
SIZE	0.007594	0.001848	4.108453	0.0001
CAP	0.084914	0.019906	4.265685	0.0001
LIQ	-0.016453	0.005165	-3.185599	0.0021
OPE	-0.029998	0.004909	-6.111082	0.0000
MGE	0.007474	0.010293	0.726076	0.4700
EME	-0.498988	0.372788	-1.338530	0.1847
FDC	-0.281908	0.146907	-1.918950	0.0587
BSD	-0.062690	0.031415	-1.995535	0.0495
GDP	0.030420	0.016817	1.808921	0.0744
INFL	0.000555	0.005745	0.096620	0.9233
FER	0.000938	0.000851	1.101756	0.2740

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.802631	Mean dependent var	0.024589
Adjusted R-squared	0.756492	S.D. dependent var	0.009281
S.E. of regression	0.004580	Akaike info criterion	-7.759096
Sum squared resid	0.001615	Schwarz criterion	-7.251569
Log likelihood	391.4366	Hannan-Quinn criter.	-7.553945
F-statistic	17.39620	Durbin-Watson stat	1.576061
Prob(F-statistic)	0.000000		

Appendix-III: Ratio Data

obs	ROA	SIZE	CAP	LIQ	OPE	MGE	EME	FDC	BSD	GDP	INFL	FER
CBE - 02	0.00379	23.8209	0.0374	0.428	0.9163	0.4163	0.00582	0.0213	0.1406	0.0163	-0.1057	8.5425
CBE - 03	0.02252	23.9096	0.0528	0.6909	0.5801	0.4838	0.0055	0.0127	0.1627	-0.02	0.10924	8.5809
CBE - 04	0.01194	24.0546	0.0535	0.7376	0.7366	0.4637	0.00579	0.0119	0.1729	0.1173	0.07347	8.6197
CBE - 05	0.01725	24.2249	0.0431	0.6887	0.5873	0.5334	0.00528	0.0115	0.1897	0.1264	0.06126	8.6518
CBE - 06	0.02237	24.3026	0.042	0.7497	0.5603	0.5323	0.00522	0.0117	0.1944	0.1154	0.10577	8.681
CBE - 07	0.01988	24.495	0.0971	0.7806	0.6165	0.5402	0.00502	0.0107	0.2127	0.1179	0.15823	8.7943
CBE - 08	0.027	24.6436	0.0905	0.474	0.5421	0.4815	0.00565	0.0142	0.2345	0.1119	0.253	9.2441
CBE - 09	0.03233	24.8078	0.0848	0.3591	0.5008	0.3872	0.00547	0.0141	0.2592	0.1004	0.364	10.4205
CBE - 10	0.02653	25.0299	0.0749	0.2855	0.5619	0.3897	0.00581	0.0136	0.2901	0.1057	0.028	12.8909
CBE - 11	0.02506	25.4618	0.0548	0.3569	0.5906	0.4164	0.00491	0.0132	0.3705	0.1128	0.181	16.1178
CBE - 12	0.03422	25.7909	0.0486	0.2153	0.5305	0.4208	0.0055	0.0144	0.449	0.0884	0.341	17.2536
CBE - 13	0.03098	26.007	0.0459	0.233	0.5626	0.3169	0.00677	0.0156	0.4997	0.0966	0.135	18.1947
CBB - 02	0.00418	20.6804	0.0804	0.2968	2.0000	0.1818	0.01148	0.0597	0.1406	0.0163	-0.1057	8.5425
CBB - 03	0.01168	20.6635	0.0839	0.3593	0.8226	0.2581	0.01168	0.0374	0.1627	-0.02	0.10924	8.5809
CBB - 04	0.00378	20.7787	0.0785	0.4868	0.9467	0.4667	0.0123	0.0292	0.1729	0.1173	0.07347	8.6197
CBB - 05	0.00928	21.3287	0.0579	0.5862	0.8455	0.5727	0.00764	0.0208	0.1897	0.1264	0.06126	8.6518
CBB - 06	0.03116	21.3094	0.0874	0.5755	0.6456	0.4304	0.00835	0.0247	0.1944	0.1154	0.10577	8.681
CBB - 07	0.02965	21.3593	0.0112	0.5106	0.7431	0.445	0.01006	0.0238	0.2127	0.1179	0.15823	8.7943
CBB - 08	0.03518	21.5954	0.1083	0.6269	0.6182	0.3775	0.01142	0.0298	0.2345	0.1119	0.253	9.2441
CBB - 09	0.02837	21.6757	0.1038	0.5153	0.6784	0.4057	0.01041	0.0262	0.2592	0.1004	0.364	10.4205
CBB - 10	0.02898	21.8745	0.1013	0.5295	0.6541	0.3944	0.01174	0.026	0.2901	0.1057	0.028	12.8909
CBB - 11	0.0245	21.9775	0.1036	0.5557	0.7135	0.4294	0.01354	0.0316	0.3705	0.1128	0.181	16.1178
CBB - 12	0.01951	22.5062	0.0806	0.7818	0.7255	0.5454	0.01127	0.0304	0.449	0.0884	0.341	17.2536
CBB - 13	0.02076	22.6253	0.0993	0.7472	0.7124	0.5459	0.0143	0.0294	0.4997	0.0966	0.135	18.1947
AIB - 02	0.01079	20.8294	0.1178	0.4333	1.0000	0.2469	0.01169	0.0312	0.1406	0.0163	-0.1057	8.5425
AIB - 03	0.00999	21.0605	0.0978	0.4768	0.9604	0.4257	0.00999	0.0223	0.1627	-0.02	0.10924	8.5809
AIB - 04	0.01469	21.2942	0.1024	0.5084	0.7903	0.4516	0.00904	0.0201	0.1729	0.1173	0.07347	8.6197
AIB - 05	0.01707	21.5235	0.0876	0.4464	0.745	0.3691	0.00988	0.0175	0.1897	0.1264	0.06126	8.6518
AIB - 06	0.0264	21.8064	0.1029	0.3619	0.6579	0.3991	0.01016	0.0187	0.1944	0.1154	0.10577	8.681
AIB - 07	0.03734	22.0661	0.1132	0.3625	0.5822	0.3746	0.00992	0.0199	0.2127	0.1179	0.15823	8.7943
AIB - 08	0.02963	22.296	0.1239	0.4766	0.6624	0.4066	0.00996	0.0274	0.2345	0.1119	0.253	9.2441
AIB - 09	0.02226	22.5832	0.1168	0.6422	0.7002	0.421	0.01045	0.0242	0.2592	0.1004	0.364	10.4205
AIB - 10	0.03116	22.7958	0.1184	0.6621	0.6399	0.5583	0.01178	0.0254	0.2901	0.1057	0.028	12.8909
AIB - 11	0.03565	23.0374	0.1293	0.5228	0.6111	0.5745	0.01198	0.0271	0.3705	0.1128	0.181	16.1178
AIB - 12	0.03304	23.2029	0.1349	0.3434	0.6447	0.398	0.01259	0.031	0.449	0.0884	0.341	17.2536
AIB - 13	0.03416	23.4219	0.1354	0.2847	0.6593	0.402	0.01675	0.0289	0.4997	0.0966	0.135	18.1947
DB - 02	0.01615	21.1194	0.0821	0.4274	1.0000	0.3304	0.00942	0.0289	0.1406	0.0163	-0.1057	8.5425
DB - 03	0.01356	21.4119	0.0648	0.4004	0.7985	0.3881	0.00954	0.0185	0.1627	-0.02	0.10924	8.5809
DB - 04	0.02092	21.708	0.0643	0.4004	0.7083	0.3906	0.00859	0.0188	0.1729	0.1173	0.07347	8.6197
DB - 05	0.02076	21.9529	0.0711	0.3604	0.6966	0.3077	0.00848	0.0184	0.1897	0.1264	0.06126	8.6518

DB - 06	0.02926	22.2375	0.0849	0.3112	0.6376	0.3406	0.00902	0.0182	0.1944	0.1154	0.10577	8.681
DB - 07	0.03096	22.5218	0.0901	0.3438	0.6144	0.3402	0.00877	0.0191	0.2127	0.1179	0.15823	8.7943
DB - 08	0.03054	22.7811	0.0933	0.4739	0.6433	0.3729	0.00936	0.0264	0.2345	0.1119	0.253	9.2441
DB - 09	0.02567	22.9988	0.0934	0.5934	0.6693	0.4246	0.01002	0.0252	0.2592	0.1004	0.364	10.4205
DB - 10	0.02623	23.2372	0.0909	0.518	0.6632	0.4995	0.00934	0.0245	0.2901	0.1057	0.028	12.8909
DB - 11	0.03074	23.4084	0.0953	0.5258	0.6477	0.5292	0.00987	0.0275	0.3705	0.1128	0.181	16.1178
DB - 12	0.03722	23.5866	0.1043	0.4105	0.622	0.4797	0.01084	0.0292	0.449	0.0884	0.341	17.2536
DB - 13	0.03073	23.7063	0.1036	0.3824	0.6659	0.4382	0.01293	0.0309	0.4997	0.0966	0.135	18.1947
WB - 02	0.00929	20.2863	0.0991	0.4841	0.9032	0.3448	0.01548	0.0388	0.1406	0.0163	-0.1057	8.5425
WB - 03	0.01237	20.6056	0.1046	0.415	0.8358	0.3731	0.01237	0.0242	0.1627	-0.02	0.10924	8.5809
WB - 04	0.02807	20.8543	0.1132	0.3978	0.7091	0.4	0.01228	0.0206	0.1729	0.1173	0.07347	8.6197
WB - 05	0.0297	21.2032	0.1114	0.3794	0.68	0.4667	0.01238	0.0171	0.1897	0.1264	0.06126	8.6518
WB - 06	0.03143	21.5382	0.1129	0.2996	0.6773	0.4545	0.01372	0.0197	0.1944	0.1154	0.10577	8.681
WB - 07	0.03218	21.9703	0.1158	0.3704	0.65	0.4219	0.01264	0.0202	0.2127	0.1179	0.15823	8.7943
WB - 08	0.03366	22.1403	0.1467	0.5396	0.6791	0.4465	0.01334	0.0302	0.2345	0.1119	0.253	9.2441
WB - 09	0.03529	22.356	0.1633	0.7082	0.6152	0.5053	0.01453	0.0224	0.2592	0.1004	0.364	10.4205
WB - 10	0.0389	22.4711	0.1832	0.7434	0.6053	0.5628	0.01582	0.0193	0.2901	0.1057	0.028	12.8909
WB - 11	0.0401	22.8103	0.1659	0.7066	0.604	0.6136	0.01495	0.0168	0.3705	0.1128	0.181	16.1178
WB - 12	0.04028	22.8452	0.1922	0.5106	0.6048	0.4802	0.0173	0.0243	0.449	0.0884	0.341	17.2536
WB - 13	0.03303	23.0645	0.1761	0.3388	0.6393	0.3849	0.01769	0.0228	0.4997	0.0966	0.135	18.1947
BoA - 02	0.0049	20.856	0.1236	0.7513	0.925	0.1875	0.00613	0.0374	0.1406	0.0163	-0.1057	8.5425
BoA - 03	0.0045	21.0107	0.1118	0.6028	0.9259	0.2346	0.006	0.0251	0.1627	-0.02	0.10924	8.5809
BoA - 04	0.02397	21.1839	0.1218	0.5451	0.6911	0.2114	0.00631	0.0228	0.1729	0.1173	0.07347	8.6197
BoA - 05	0.02965	21.4445	0.1235	0.5595	0.5987	0.3092	0.00632	0.0203	0.1897	0.1264	0.06126	8.6518
BoA - 06	0.02999	21.765	0.1418	0.4861	0.6136	0.25	0.01059	0.0188	0.1944	0.1154	0.10577	8.681
BoA - 07	0.01973	21.9459	0.1187	0.4919	0.7491	0.2434	0.01031	0.0221	0.2127	0.1179	0.15823	8.7943
BoA - 08	0.00341	22.1749	0.0983	0.5671	0.958	0.2735	0.0106	0.0269	0.2345	0.1119	0.253	9.2441
BoA - 09	0.01834	22.4238	0.0948	0.6874	0.7518	0.3185	0.01203	0.0249	0.2592	0.1004	0.364	10.4205
BoA - 10	0.02239	22.5606	0.0932	0.6931	0.7002	0.4416	0.01263	0.0248	0.2901	0.1057	0.028	12.8909
BoA - 11	0.02486	22.7081	0.0908	0.5868	0.7073	0.398	0.01248	0.027	0.3705	0.1128	0.181	16.1178
BoA - 12	0.02625	22.8323	0.11	0.4236	0.7008	0.312	0.0129	0.0308	0.449	0.0884	0.341	17.2536
BoA - 13	0.02701	23.0387	0.1094	0.2557	0.6836	0.3251	0.01326	0.0304	0.4997	0.0966	0.135	18.1947
UB - 02	0.01274	19.5649	0.2803	0.4427	1.2500	0.2917	0.01274	0.0318	0.1406	0.0163	-0.1057	8.5425
UB - 03	0.01066	19.9661	0.194	0.446	0.8387	0.3871	0.00853	0.0209	0.1627	-0.02	0.10924	8.5809
UB - 04	0.01039	20.3287	0.1424	0.4669	0.8478	0.413	0.01039	0.0207	0.1729	0.1173	0.07347	8.6197
UB - 05	0.02889	20.7937	0.1165	0.4814	0.6593	0.4945	0.00932	0.0197	0.1897	0.1264	0.06126	8.6518
UB - 06	0.02752	21.1895	0.1195	0.3718	0.6508	0.4365	0.00876	0.0238	0.1944	0.1154	0.10577	8.681
UB - 07	0.02932	21.504	0.1649	0.4847	0.6667	0.3646	0.01054	0.026	0.2127	0.1179	0.15823	8.7943
UB - 08	0.02801	21.9019	0.1439	0.608	0.675	0.3881	0.01057	0.0257	0.2345	0.1119	0.253	9.2441
UB - 09	0.02012	22.2606	0.1118	0.782	0.7304	0.391	0.01175	0.0242	0.2592	0.1004	0.364	10.4205
UB - 10	0.02959	22.4975	0.1081	0.7739	0.6575	0.5084	0.01149	0.0221	0.2901	0.1057	0.028	12.8909
UB - 11	0.03001	22.7679	0.1167	0.6951	0.6323	0.4626	0.01078	0.0239	0.3705	0.1128	0.181	16.1178
UB - 12	0.0339	22.8965	0.1254	0.4847	0.6418	0.3763	0.01342	0.0294	0.449	0.0884	0.341	17.2536

UB - 13	0.02142	23.0236	0.1204	0.3675	0.763	0.3361	0.01518	0.0307	0.4997	0.0966	0.135	18.1947
NIB - 02	0.02434	20.0959	0.1854	0.4785	0.7111	0.3556	0.00749	0.029	0.1406	0.0163	-0.1057	8.5425
NIB - 03	0.01469	20.6011	0.1412	0.4712	0.803	0.4394	0.00678	0.0187	0.1627	-0.02	0.10924	8.5809
NIB - 04	0.02807	20.944	0.1387	0.4925	0.6237	0.3978	0.00642	0.018	0.1729	0.1173	0.07347	8.6197
NIB - 05	0.02656	21.2725	0.1293	0.4665	0.6593	0.3852	0.00635	0.0196	0.1897	0.1264	0.06126	8.6518
NIB - 06	0.02861	21.4445	0.1406	0.3588	0.6398	0.3354	0.00839	0.0227	0.1944	0.1154	0.10577	8.681
NIB - 07	0.02915	21.6815	0.163	0.3756	0.6346	0.2933	0.00959	0.0224	0.2127	0.1179	0.15823	8.7943
NIB - 08	0.03096	22.018	0.1639	0.4148	0.6435	0.3367	0.00974	0.0251	0.2345	0.1119	0.253	9.2441
NIB - 09	0.03204	22.2933	0.1516	0.6	0.6409	0.4047	0.01112	0.0228	0.2592	0.1004	0.364	10.4205
NIB - 10	0.03366	22.5102	0.1535	0.5764	0.6403	0.5215	0.01292	0.0218	0.2901	0.1057	0.028	12.8909
NIB - 11	0.03459	22.685	0.1646	0.4767	0.6241	0.4931	0.01359	0.0231	0.3705	0.1128	0.181	16.1178
NIB - 12	0.03456	22.8366	0.1846	0.3726	0.6224	0.429	0.01399	0.026	0.449	0.0884	0.341	17.2536
NIB - 13	0.02559	22.9365	0.1822	0.232	0.7023	0.2736	0.01532	0.0278	0.4997	0.0966	0.135	18.1947

Appendix-IV: Open ended Questionnaire

Addis Ababa University
Department of Accounting and Finance
MSC program

This questionnaire contained open-ended question, you are requested replay on the entire question. There is no right or wrong answers, simply answer the question based of your working experience and the current knowledge about the business environment of your bank in particular and Ethiopia in general. You are kindly request to give your honest opinion on each of questions. The information from respondents will be keep confidentially and no any effect on respondents. So, please answer the entire questions frankly and honestly, your frank and sincere responses will be highly appreciated.

Thank you in advance!!

Questionnaire prepared to ask the chief financial officers of the sampled commercial banks of Ethiopia.

1. How strongly are bank size and profitability of the bank related?

_____

2. How does capital adequacy affect the profitability of your bank?

_____

3. In what condition will liquidity risk advance affect the profitability of your bank?

_____

4. How Operating efficiency, management quality, and labor efficiency relate to profitability in your bank?

_____
_____
_____
_____

5.How strongly are funding cost and profitability of the bank related?

_____

6. Do you believe banking sector developmentaffect profitability in Ethiopian banking industry?

No __ Yes ___ if your answer is no why not? If your answer is yes, what is its impact on profitability of bank?

_____
_____

6. How economic growth of the country contributed to the banks‟ profitability?

_____

_____

7. As we know official figure of inflation in the country is high. Does inflation affect your bank profitability? if yes, how? If no, why not?

_____

8. How would foreign exchange rate of the country affect the banks profit?

_____

_____

Thank you in advance!!