ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

BANK SPECIFIC DETERMINANTS OF PROFITABILITY OF COMMERCIAL BANKS (THE CASE OF COMMERCIAL BANK OF ETHIOPIA)

BY

SELAMAWIT TAYE

JULY, 2016
ADDIS ABABA, ETHIOPIA

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A THESIS SUBMITTED TO ST MARY'S UNIVERISTY SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE MASTERS DEGREE OF BUSINESS ADMINISTRATION IN ACCOUNTING AND FINANCE

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MBA PROGRAM

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APPROVED BY BOARD OF EXAMINERS

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Declaration

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

Selamawit Taye _____

St. Mary's University, Addis Ababa **July, 2016**

ENDORSEMENT

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

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Advisor **Signature**

St. Mary's University, Addis Ababa **July, 2016**

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Abstract

To achieve financial stability and growth, it is important to identify the determinants of performance of the banking sector. This paper aimed at investigating the impact of the internal determinants of profitability of commercial banks (the case of commercial bank of Ethiopia) over the period 1990-2014. This paper used ordinary least squares method to estimate the model. This paper used return on assets (ROA) as a measure of profitability. The findings revealed that bank asset, interest income, branch expansion and noninterest expense do significantly influence profitability of the bank. The result suggests that the management set strategies that encourage commercial banks to lower assets increase, raise interest income and increase number of branches as this will increase profit of the banks. Another implication of the study is that commercial banks need to invest in technologies and management skills which minimize costs of operations as this will impact positively on their growth and survival.

Keywords: Bank *profitability, internal factors, ordinary Least Squares method, return on assets*

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Different studies focused on the relationship between bank earnings performance and profitability. Different literature examined the impact of regulatory and macroeconomic factors on overall bank profitability. The main conclusion emerging from past studies is that internal factors explain a large proportion of banks profitability; nevertheless external factors have also had an impact on bank profitability.

Ani et al(2012) identified internal factors of the bank profitability with the data concerning total asset, net profit, loan and advances, and total equity for 10 years from period 2001 to 2010 from 15 Nigerian banks by using return on asset(ROA) as the major metric for measuring profitability. According to the study factors that determine profitability of commercial banks are management controllable factors such as size, loan and capital adequacy.

According to the study by Susan(2014) bank size which is measured by natural log of total assets has positive significant effect on profit of Kenyan top six commercial banks. According to study by Sehrish et al(2011) bank size have significant positive relation with ROA, where total assets indicate the size of the bank. This positive relationship shows that the size of the bank have significant positive impact on profitability. Goddard et al. (2004) examined that the evidence for any consistent or systematic size–profitability relationship is relatively weak. But according to Ani et al(2012) the size has a significant negative relationship with profitability. This significant negative relationship shows that the size of a bank could significantly affect the profitability of the bank negatively. The major outcome of this study is that higher total assets may not necessarily lead to higher profits.

According to the study by Susan(2014) capital strength impacts positively on Kenyan top banks` profitability in the period 2008-2013. The results suggest that the commercial banks can improve their profits if they are well capitalized. Banks with large capital are able to diversify their investments and are able to stand strong even during general financial crisis in the country. Such

banks are strong in attracting more funds at cheaper rates which enhance their liquidity position (Obamuyi, 2013). The final impact is that such banks will have more funds to give out in form of credit at lower lending rates of interest. According to Ani et al (2012) Capital adequacy (ratio of total equity total asset) shows a positive correlation with profitability (ROA). In the presence of asymmetric information and bankruptcy costs, the way the assets are funded could affect the banks value. A well-capitalized bank may send a good signal to the market regarding its performance (Imad et al., 2011). Our result is in consonance with the findings of (Goddard et al., 2004) that investigated profitability of European banks profitability. According to the study by Goddard et al. (2004) the relationship between the capital–assets ratio and profitability is positive.

According to the study by Susan(2014) increases in bank operation expenses reduce bank profitability of the top Kenyan banks in the period 2008-2013. Molyneux and Thornton (1992) and Naceur (2003) found that bank operation expenses are positively associated with high profits. The results for this paper, implies that poor expenses management explains the poor performance of commercial banks in Kenya. Negative relationship has been supported by various studies like Bourke (1989), Jiang et al (2003), Obamuyi (2013), suggesting that profitable banks operate at lower costs. However, this variable gives mixed results as shown by other studies. Molyneux and Thornton (1992) found that expenses impact positively on profits. The positive association between profitability and expenses was also observed in a study done in Tunisia (Naceur, 2003), and in Malaysia (Guru et al., 2002).

According to Ani et al (2012) an asset composition (ratio of total loans and advances to total asset) shows a positive and significant relationship with profitability. The study assuming other variables remains constant concludes the higher the rate of transforming deposits into loans, the higher the profitability of the bank. In addition to these studies, Sehrish et al(2011) study concludes loan shows positive and significant relationship with ROA. The study by Abreu and Mendes (2000), Sehrish Gul et al(2011) and Athanasoglou et al. (2006) gives evidence of a positive association between loan ratio and bank profitability. But studies by Bashir and Hassan (2003) and Staikouras and Wood (2003) contradict the above results by arguing that higher loans impact negatively on bank profits.

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

Study by Sehrish et al(2011) shows deposits to total assets have the positive and significant impact on the profitability of the banks. It shows that deposits have positive impact on profitability and banks depending on deposits for funds can achieve better return on assets. Different studies show that bank performance can also be determined by the amount of deposits. According to results by Alkassim (2005) and Ani et al., 2012 deposits have the positive and significant impact on the profitability of the bank. It shows that banks depending on deposits for funds can achieve better return on assets. Kunt and Huizinga (1999) found that deposits affect bank profits negatively due to large costs incurred in their management.

1.2 Background of the Organization

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 February 16, 1906 by the Emperor. Thus by 1931 Bank of Abyssinia was legally replaced by Bank of Ethiopia shortly after Emperor Haile Selassie came to power. Bank of Ethiopia took over the commercial activities of the Bank of Abysinia and was authorized to issue notes and coins. *(www.nbe.gov.et)*

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 and give birth to commercial Bank of Ethiopia. The first privately owned bank, Addis Ababa Bank Share Company, was established on Ethiopians initiative and started operation in 1964 with a capital of 2 million. Addis Bank and Commercial Bank of Ethiopia S.C. were merged to form the sole commercial bank in the country till the establishment of private commercial banks in 1994. *(www.nbe.gov.et)*

Commercial Bank of Ethiopia (CBE) has more than 1000 branches stretched across the country. The leading African bank with assets of 311 billion Birr as on September 30th 2015. Currently CBE has more than 11 million account holders and the number of Mobile and Internet Banking users also reached more than 460,000 as of September 30, 2015. It has strong correspondent relationship with more than 50 renowned foreign banks like Commerz Bank A.G., Royal Bank of Canada, City Bank, HSBC Bank,... CBE has a SWIFT bilateral arrangement with more than 700 others banks across the world. CBE combines a wide capital base with more than 22,000 employees. Currently, it is working with other 20 money transfer agents like Western Union, Money Gram, Atlantic International (Bole), Xpress Money,... CBE has opened four branches in South Sudan and has been in the business since June 2009.

2014/2015 report of the bank shows gross profit of the bank at June 2015 was 12.66 billion and its deposit and capital was 241.73 and 12.89 billion respectively. According to the report return on asset of the bank was 4.6%. According to report by National Bank of Ethiopia (NBE) market share profit of the bank is 60.61%. Why CBE is most profitable bank? (www.combanketh.et)

1.3 Statement of the Problem

Even though there are a lot of studies conducted in identifying determinants of profitability of commercial banks, they have been debatable because determinants of profit are dynamic through time to time and differ with the nature of the firm from place to place (Flamini et al 2009). Most of these studies at different time mainly focused on bank size, deposit, loan, expense, capital adequacy and diversification by using panel data.

Study by Flamini et al(2009) shows as asset of the bank and its profitability are positively related but according to Saira et al(2011) they are negatively related. Study by Ani et al(2012) shows deposit has positive significant effect on bank profitability even though study by Kunt and Huizinga(1999) shows negative relationship between them. Study by Sehrish Gut et al (2011) shows loan affects bank profit positively. But study by Wood (2003) shows negative effect of this factor on bank profitability. Study by Obamuyi(2013) suggests profitable banks operated at lower cost but study of Necear(2003) shows positive relationship between expense and profitability. Havrylchyk et al. (2006) found a positive and direct relationship between capital

and profits of banks. But the study by Paolo Saona Hoffmann (2011) found that there is a negative relationship between them. Study by Wanzerried(2011) shows positive association between noninterest income and bank performance but study by Williams(2007) shows negative relationship.

In Ethiopia, although there are relatively few studies that have been conducted by Belayneh (2011) and Habtamu (2012) about determinants of profitability of commercial banks by using private banks only but profit market share of these banks is only about 39.31%. These studies identified number of branches as determinant of profitability of banks. According to the 2014/2015 report of the bank market share number of the branches of the bank is only 38.8% but profit share is 60.69%. Total expense of the bank in 2015 is about 10.13 billion although the bank is most profitable bank in Ethiopia.

Some studies identified external factors like GDP growth, inflation rate and real interest rate that affect profitability of commercial banks. But external factors are not management controllable and they are beyond control of bank management. But banks can adjust their strategy to these macroeconomic factors. These factors are the same for the industry that cannot make one bank more profitable than the other. Therefore, because some banks are more profitable than the others, this study intends to identify the bank specific factors that determine profitability of commercial banks of Ethiopia incase of commercial bank of Ethiopia.

1.4 Basic Research Questions

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

1. How does asset of the bank affect its profitability?
2. What is the effect of interest income on profits of the bank?
3. What is the effect of expense on profitability of the banks?
4. How does number of branch affect profit of the bank?

1.5 Objective of the Study

1.5.1 General Objective

General objective of this study is identifying internal determinants of profitability of Commercial Bank of Ethiopia.

1.5.2 Specific Objectives

1. To find effect of asset of the bank on its profitability;
2. To identify effect of interest income on profitability of the banks;
3. To analyze the effect of expense on profitability of the bank and
4. To analyze effect of number of branches on profitability of the bank

1.6 Hypothesis

1. There is significant positive relationship between asset and profitability of bank.
2. There is significant positive relationship between interest income and banks profitability.
3. There is significant positive relationship between branch expansion and profitability of the banks.
4. There is significant negative relationship between Operating Expense and commercial banks profitability.

1.7 Significance of the study

Main objective of any business organization is to increase its profit. Every bank wants to increase its profit. How to increase the profit is the major issue. Therefore, this study will help management of the commercial bank of Ethiopia. In Ethiopia, other commercial banks are followers of the commercial bank of Ethiopia because of its profit strategy. In addition to management of commercial bank of Ethiopia, this study will help for management of private banks.

Although there are few studies about profitability of commercial banks in Ethiopia, it requires further studies. Therefore, it will contribute for further studies in the area.

1.8 Scope of the study

This study is about only bank specific internal determinants of profitability of commercial bank of Ethiopia. This study used only internal factors that are management controllable because despite external factors that equally affect all commercial banks, commercial bank of Ethiopia is most profitable bank. The researcher identified only internal factors that affect profitability of the bank because external factors cannot be controlled by management. These determinants are only bank specific that are collected from balance sheet of the bank. Therefore, external factors are not included in the study because they are assumed equally affect all banks and bank managers cannot control them.

This study used time series secondary data period from 1990 to 2014 of 25 years audited balance sheet of the bank.

1.9 Organization of the Research Report

The study is organized under five chapters.

Chapter one deals with the introductory part which bears background of the study, Statement of the problem, basic research questions, objectives, significance of the study, and scope of the study; the second chapter deals with review of both theoretical and empirical literatures related to the study. The third chapter deals with methods of the study which is about description and design of the research, source of data, data collection instruments, procedures of data collection, and methods of data analysis. The fourth will present the results and discussions which summarize the results/findings of the study, and interpret and/or discuss the findings. Finally, Chapter five is summary, conclusions and recommendations that comprise four sections, which include summary of findings, conclusions, limitations of the study and recommendations.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Theoretical Literature

Banks make profits by charging an interest rate on their holdings of securities and loans that is higher than the expenses on their liabilities. In general terms, banks make profits by selling liabilities with one set of characteristics (a particular combination of liquidity, risk, size, and return) and using the proceeds to buy assets with a different set of characteristics. (Mishkin, (2004)

Banks obtain funds by borrowing and by issuing other liabilities such as deposits. These deposits include Checkable deposits (deposits on which checks can be written), savings deposits (deposits that are payable on demand but do not allow their owner to write checks), and time deposits (deposits with fixed terms to maturity).They then use these funds to acquire assets such as securities and loans. Bank capital is a cushion against a drop in the value of its assets, which could force the bank into insolvency (having liabilities in excess of assets, meaning that the bank can be forced into liquidation).

Banks make their profits primarily by issuing loans. A loan is a liability for the individual or corporation receiving it, but an asset for a bank, because it provides income to the bank. Loans are typically less liquid than other assets, because they cannot be turned into cash until the loan matures. Loans also have a higher probability of default than other assets. Because of the lack of liquidity and higher default risk, the bank earns its highest return on loans. The largest categories of loans for commercial banks are commercial and industrial loans made to businesses. Commercial banks also make consumer loans and lend to each other. To maximize its profits, a bank must simultaneously seek the highest returns possible on loans and securities, reduce risk, and make adequate provisions for liquidity by holding liquid assets. (Mishkin, (2004))

Although net income gives us an idea of how well a bank is doing, it suffers from one major drawback: It does not adjust for the bank's size, thus making it hard to compare how well one bank is doing relative to another. A basic measure of bank profitability that corrects for the size

of the bank is the return on assets (*ROA*) which divides the net income of the bank by the amount of its assets. *ROA* is a useful measure of how well a bank manager is doing on the job because it indicates how well a bank's assets are being used to generate profits. Although *ROA* provides useful information about bank profitability, it is not what the bank's owners (equity holders) care about most. They are more concerned about how much the bank is earning on their equity investment, an amount that is measured by the return on equity (*ROE*), the net income per equity capital.

Another commonly watched measure of bank performance is called the *net interest margin* (*NIM*), the difference between interest income and interest expenses as a percentage of total assets. If a bank manager has done a good job of asset and liability management such that the bank earns substantial income on its assets and has low costs on its liabilities, If the bank is able to raise funds with liabilities that have low interest costs and is able to acquire assets with high interest income, the net interest margin will be high, and the bank is likely to be highly profitable. If the interest cost of its liabilities rises relative to the interest earned on its assets, the net interest margin will fall, and bank profitability will suffer. (Mishkin, (2004))

2.2. Empirical Literatures

Some studies were country specific and few of them considered panel of countries reviewing the determinants of profitability. The main conclusion emerging from these studies is that internal factors explain a large proportion of banks profitability; nevertheless external factors have also had an impact on their performance.

Dr. Srinivas Madishetti et.al (2013) analyzed the profitability determinants of Tanzania commercial banks for the period of 2006-2012. Internal determinants use the variables like liquidity risk, credit risk, operating efficiency, business assets and capital adequacy and external determinants use the variables GDP growth rate and inflation rate. The study found that internal variables determine the bank's profitability whereas external factors do not influence the profitability of commercial banks.

Abuzar (2013) studied the determinants of profitability of Islamic banks operating in Sudan. This study found that only the internal factors have the substantial impact on the profitability of the

commercial banks. Cost, liquidity and the size of the banks have the positive relationship with the bank profitability. Macroeconomic or external factors have no substantial impact on profitability.

Eljelly(2013) aimed to explore the determinants of profitability of Islamic banks in Sudan, one of the few countries that have total Islamic economic and banking systems. Using a sample of Sudanese banks, the paper found that only the internal factors to these banks have a significant impact on banks' profitability, as measured by return on assets (ROA), return on equity (ROE), and net financing margin (MARG). More specifically, cost, liquidity and size of the bank are found to have positive and significant effects on profitability. However, external macroeconomic factors are classified as redundant and have no significant effects on profitability.

Ani,W.U et.al (2012) investigated the determinants of profitability of commercial banks in Nigeria for the period of ten years from 2001 to 2010 including the observation of 147 banks. Pooled ordinary least square was used to estimate the coefficient. Study finds that bank size does not increase the profit of any commercial banks in Nigeria. Greater capital-asset ratio increases the profitability of banks.

Imad Z.Ramadan et.al (2011) took apart the determinants of profitability of 10 Jordan banks for the period of 2001-2010.They have used return on equity (ROE) and return on assets (ROA) as dependant variables and internal and external factors have been used as an independent variables and the type of data of Jordan banks is panel data. Results designated that profitability of the Jordan banks depend upon the well capitalized banks, high loaning activities, less credit risk and cost management efficiency. Findings also expressed that size does not increase the profitability of Jordan banks.

Saira Javaid et.al (2011) examined the profitability of top 10 the commercial banks of Pakistan for the period of 2004-2008. Pooled ordinary least square has been used to check the impact of internal factors includes assets, loan, equity and deposits on the profitability of banks on dependant variable called return on asset (ROA).The study found that internal factors stated above effect the bank’s profitability. Bank size or total assets does not lead any profitability of

commercial banks but equity and deposits have a significant influence on the profitability of commercial banks.

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

In another dimension, Gull et al. (2011) examined the relationship between bank-specific and macro-economic characteristics over bank profitability by using data of top fifteen Pakistani commercial banks over the period 2005 to 2009. The paper used the pooled ordinary least square method to investigate the impact of assets, loans, equity, deposits, economic growth, inflation and market capitalization on major profitability indicators that is, return on asset (ROA), return on equity (ROE), return on capital employed (ROCE) and net interest margin (NIM) separately. The empirical results showed strong evidence that both internal and external factors have a strong influence on the profitability.

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

Deger Alper (2011) probed the internal and external factors of banks profitability of Turkey for the period of 2002-2010. In this study the return on assets (ROA) and return on equity (ROE) both are the dependant variables and the function of internal and external factors. Profitability

increases when the non interest income and asset size increases. And real interest rate in the external factors has positive effect on profitability.

Alpera and Anbar (2011) analyzed the internal and external factors of the commercial banks of Turkey for the period of 2002-2010. The study shows that non interest income and bank size have the positive impact on the bank profitability. And on the side of the macroeconomic or external factors only the real interest rates impact on the profitability of the commercial banks positively.

Javaid et al.(2011) study aimed to give the analysis of the determinants of top 10 banks' profitability in Pakistan over the period 2004-2008. The focus is on the internal factors only. This paper uses the pooled Ordinary Least Square (POLS) method to investigate the impact of assets, loans, equity, and deposits on one of the major profitability indicator return on asset (ROA). The empirical results have found strong evidence that these variables have a strong influence on the profitability. However, the results show that higher total assets may not necessarily lead to higher profits due to diseconomies of scales. Also, higher loans contribute towards profitability but their impact is not significant. Equity and Deposits have significant impact on profitability.

Ramadan et al. (2011) studied a balanced panel data set of Jordanian banks was used for the purpose of investigating the nature of the relationship between the profitability of banks and the characteristics of internal and external factors. For this purpose 100 observation of 10 banks over the period 2001-2010 were comprised. Two measures of bank's profitability have been utilized: the rate of return on assets (ROA) and the rate of return on equity (ROE). Results showed that the Jordanian bank's characteristics explain a significant part of the variation in bank profitability. High Jordanian bank profitability tends to be associated with well-capitalized banks, high lending activities, low credit risk, and the efficiency of cost management. Results also showed that the estimated effect of size did not support the significant scale economies for Jordanian banks.

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

Fadzlan Sufian et.al (2008) studied the profitability of the banks in Philippines for the period of 1990-2005. The study suggests that if the expense related behavior and credit risk increases the profitability of the banks operating in Philippines decreases and the non-interest income and capitalization both have the positive relationship with bank's profitability. During the study undertaken the inflation increases the profit of the banks in Philippines decreases.

Havrylchyk et al.(2006) found a positive and direct relationship between capital and profits of banks. It implies that a more efficient bank should have higher profits since it is able to maximize on its net interest income.

Vong and chan (2006) analyzed the impact of internal and external factors on the profitability of Macao banking industry for the period of 15 years. This study found that high capitalization leads to the high profitability and size of the bank increases the. And on the other hand, loan loss provision impact on the profitability of the Macao banking industry unfavorably.

Goddard et al. (2004) had investigated 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. They found that despite intensifying competition there was significant persistence of abnormal profit from year to year. Their results suggests that evidence for any

consistent or systematic 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.

Haron (2004) finds that internal factors such as liquidity, total expenditures, funds invested in Islamic securities, and the percentage of the profit-sharing ratio between the bank and the borrower of funds are highly correlated with the level of total income received by the Islamic banks. Similar effects are found for external factors such as interest rates, market share and size of the bank. Other determinants such as funds deposited into current accounts, total capital and reserves, the percentage of profit-sharing between bank and depositors, and money supply also play a major role in influencing the profitability of Islamic banks.

Bashir (2003) paper analyzed how bank characteristics and the overall financial environment affect the performance of Islamic banks. Utilizing bank level data, the study examines the performance indicators of Islamic banks across eight Middle Eastern countries between 1993 and 1998. A variety of internal and external banking characteristics were used to predict profitability and efficiency. Controlling for macroeconomic environment, financial market structure, and taxation, the results indicate that high capital-to-asset and loan-to-asset ratios lead to higher profitability. The results also indicate that foreign-owned banks are likely to be profitable. Everything remaining equal, the regression results show that implicit and explicit taxes affect the bank performance and profitability negatively while favorable macroeconomic conditions impact performance measures positively.

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

Abreu and Mendes (2002) investigate the determinants of bank's interest margins and profitability for some European countries in the last decade. They report that well capitalized banks face lower expected bankruptcy costs and this advantage "translate" into better profitability. Although with a negative sign in all regressions, the unemployment rate is relevant in explaining bank profitability. The inflation rate is also relevant.

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

Demerguç-Kunt and Huizingha (2001) present evidence on the impact of financial development and structure on bank profitability using bank level data for a large number of developed and developing countries over the 1990-1997 period. The paper finds that financial development has a very important impact on bank performance. Specifically, the paper reports that higher bank development is related to lower bank performance (Tougher competition explains the decrease of profitability). Stock market development on the other hand, leads to increased profits and margins for banks especially at lower levels of financial development, indicating complementarities between bank and stock market.

Naceur and Goaied (2001) investigate the determinants of the Tunisian bank's performances during the period 1980-1995. They indicates that the best performing banks are those who have struggled to improve labour and capital productivity, those who have maintained a high level of deposit accounts relative to their assets and finally, those who have been able to reinforce their equity.

Bashir (2000) examines the determinants of Islamic bank's performance across eight Middle Eastern countries for 1993-1998 period. A number of internal and external factor were used to predict profitability and efficiencies. Controlling for macroeconomic environment, financial market situation and taxation, the results show that higher leverage and large loans to asset ratios, lead to higher profitability. The paper also reports that foreign-owned banks are more profitable than the domestic one. There is also evidence that taxation impacts negatively bank profitability. Finally, macroeconomic setting and stock market development have a positive impact on profitability.

Study by Demerguç-Kunt and Huizingha (1999) examine the determinants of bank interest margins and profitability using a bank level data for 80 countries in the 1988-1995 period. They report that a larger ratio of bank assets to GDP and a lower market concentration ratio lead to lower margins and profits. Foreign banks have higher margins and profits than domestic banks on developing countries, while the opposite prevail in developed countries.

Molyneux and Forbes (1995) explain market structure and performance in 18 European countries for the four years period 1986-89, using pooled data. Their finding includes that anti-trust or regulatory policy should be designed at changing market structure in order to increase competition or the quality of bank performance. Increasing concentration in banking markets should not be restricted by antitrust or regulatory measures.

According to the study by Susan(2014) bank size which is measured by natural log of total assets has positive significant effect on profit of Kenyan top six commercial banks. According to study by Sehrish et al(2011) bank size have significant positive relation with ROA, where total assets indicate the size of the bank. This positive relationship shows that the size of the bank have significant positive impact on profitability. Goddard et al. (2004) examined that the evidence for any consistent or systematic size–profitability relationship is relatively weak. But according to Ani et al(2012) the size has a significant negative relationship with profitability. This significant negative relationship shows that the size of a bank could significantly affect the profitability of the bank negatively. The major outcome of this study is that higher total assets may not

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

According to the study by Susan(2014) capital strength impacts positively on Kenyan top banks` profitability in the period 2008-2013. Among the explanatory variables in the study, capital was found to have the largest impact on the changes in profits. The results are similar to Obamuyi (2013) and Bourke (1989) who argue that the positive relationship between bank profitability and size of capital is due to the fact that well capitalized banks access funds cheaply and can invest in better quality assets. The results suggest that the commercial banks can improve their profits if they are well capitalized. Banks with large capital are able to diversify their investments and are able to stand strong even during general financial crisis in the country. Such banks are strong in attracting more funds at cheaper rates which enhance their liquidity position (Obamuyi, 2013). The final impact is that such banks will have more funds to give out in form of credit at lower lending rates of interest. According to Ani et al (2012) Capital adequacy (ratio of total equity total asset) shows a positive correlation with profitability (ROA). In the presence of asymmetric information and bankruptcy costs, the way the assets are funded could affect the banks value. A well-capitalized bank may send a good signal to the market regarding its performance (Imad et al., 2011). Our result is in consonance with the findings of (Goddard et al., 2004) that investigated profitability of European banks profitability. According to the study by

Goddard et al. (2004) the relationship between the capital–assets ratio and profitability is positive.

According to the study by Susan(2014) increases in bank operation expenses reduce bank profitability of the top Kenyan banks in the period 2008-2013. Molyneux and Thornton (1992) and Naceur (2003) found that bank operation expenses are positively associated with high profits. The results for this paper, implies that poor expenses management explains the poor performance of commercial banks in Kenya. Negative relationship has been supported by various studies like Bourke (1989), Jiang et al (2003), Obamuyi (2013), suggesting that profitable banks operate at lower costs. However, this variable gives mixed results as shown by other studies. Molyneux and Thornton (1992) found that expenses impact positively on profits. The positive association between profitability and expenses was also observed in a study done in Tunisia (Naceur, 2003), and in Malaysia (Guru et al., 2002).

According to Ani et al (2012) an asset composition (ratio of total loans and advances to total asset) shows a positive and significant relationship with profitability. The study assuming other variables remains constant concludes the higher the rate of transforming deposits into loans, the higher the profitability of the bank. In addition to these studies, Sehrish et al(2011) study concludes loan shows positive and significant relationship with ROA. The study by Abreu and Mendes (2000), Sehrish Gul et al(2011) and Athanasoglou et al. (2006) gives evidence of a positive association between loan ratio and bank profitability. But studies by Bashir and Hassan (2003) and Staikouras and Wood (2003) contradict the above results by arguing that higher loans impact negatively on bank profits.

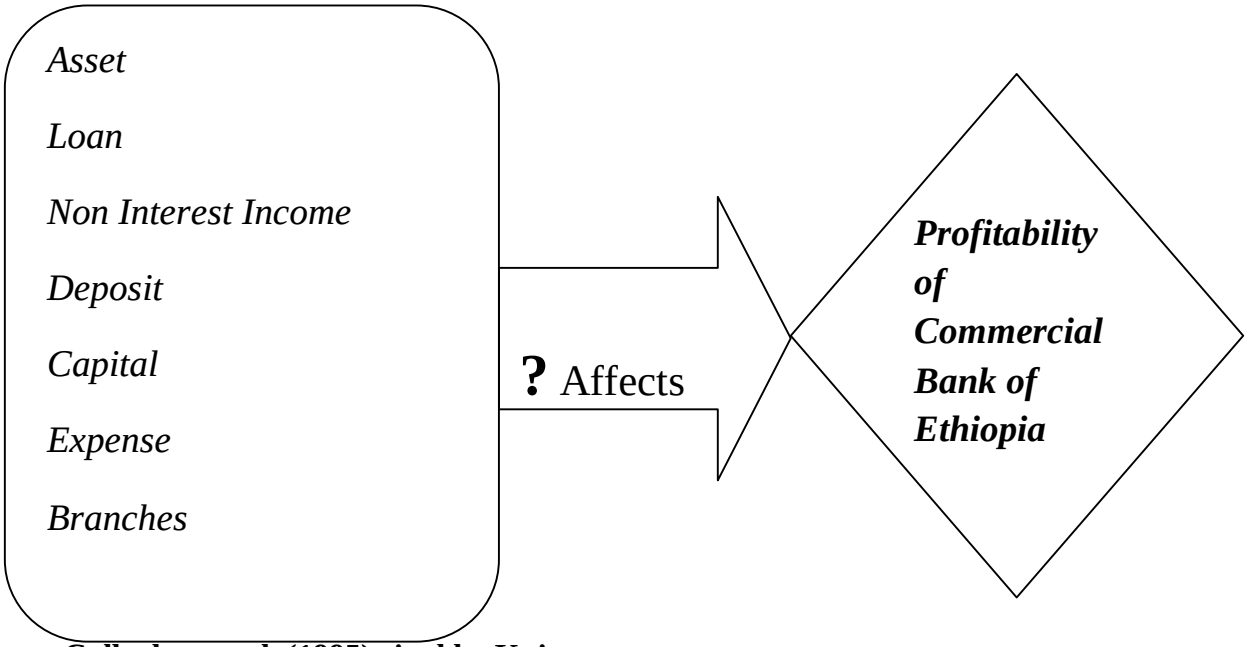
According to the study by Susan(2014) the coefficient of diversification was found non-significant in determining profits of the top six commercial bank of Kenya. Dietrich and Wanzenried (2011) found a positive association between the degree of diversification and bank performance. The findings of the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

Study by Sehrish et al(2011) shows deposits to total assets have the positive and significant impact on the profitability of the banks. It shows that deposits have positive impact on profitability and banks depending on deposits for funds can achieve better return on assets. Different studies show that bank performance can also be determined by the amount of deposits. According to results by Alkassim (2005) and Ani et al., 2012 deposits have the positive and significant impact on the profitability of the bank. It shows that banks depending on deposits for funds can achieve better return on assets. Kunt and Huizinga (1999) found that deposits affect bank profits negatively due to large costs incurred in their management.

2.3 Conceptual Framework

According to different empirical evidences different factors determine profitability of commercial banks. Based on different literatures this study expects as following variables will affect profitability of commercial bank of Ethiopia. These variables may include size of the bank, capital, loan, deposit, non interest income, non interest expense and number of branches. The study will be how these variables determine the profitability of commercial banks in case of commercial bank of Ethiopia using data period from 1990 to 2014.

Table 1: Conceptual Framework



Source: **Callaghan et al. (1995) cited by Kojo**

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Research Design

This study is descriptive research type and it has used a descriptive design. It identifies and evaluates determinants that have impact on the profitability of commercial bank by using data from commercial bank of Ethiopia by using secondary data. These determinants are identified by using Wald hypothesis test with significance level of 5%. Data was collected based on the concepts defined in the research questions and hypothesis. It has identified the characteristics of internal factors affecting profitability of commercial banks by using time series data from balance sheet of commercial bank Ethiopia from 1990 to 2014.

3.2 Study Population and Sampling Techniques

Commercial bank of Ethiopia was established in 1963. The bank would have annual reports of 52 years. But half of the annual reports could not be found. Therefore, the researcher used only 25 years data from National Bank of Ethiopia and Commercial Bank of Ethiopia

3.3 Types of Data and Instrument of data collection

This study used the secondary time series data to analyze determinants of profitability of the bank from 1990 to 2014 with 25 observations. Data was gathered from secondary source such as financial statements and balance sheets of the bank, National Bank of Ethiopia and website of the bank. Data was collected about internal factors only. Data used in study are of only quantitative.

3.4 Variable Specification

3.4.1 Stationary Test

In this section the researcher presents specification of variables to enter in the model. This section mainly presents stationary of variables and measures to be used if not they are not

stationary. Since the researcher is using time series data, this study used common unit root process method in order to test stationarity of the series. Levin, Lin & Chu t method is used to test hypothesis.

3.4.1.1 Asset

In order to reduce number effect, the researcher used natural logarithm for this variable before it is entered to the test. The hypothesis for the stationarity test for variable is given stated as follows by using Levin, Lin & Chu t method.

Null hypothesis: asset is stationary at level

Alt hypothesis: asset is not stationary al level

As the table 9 shows, because p value at one third of the observation is less than 5%, the researcher rejects null hypothesis and accept alternative hypothesis i.e. variable asset is not stationary al level. Therefore, this variable stationarity has to be tested at 1^{st} deference.

Null hypothesis: variable asset is stationary at 1^{st} deference

Alt hypothesis: variable asset is not stationary 1^{st} deference

The stationarity test al 1^{st} deference is presented in table 10 (see annex). Because p value at one third of the observation is greater than 5%, the researcher accepts null hypothesis and reject alternative hypothesis.

Variable asset is not stationary at level but it is stationary at 1^{st} difference. Therefore, the variable is entered in to the model at 1^{st} level. P value at one third of the observation is more than 5%.

3.4.1.2. Number of Branch

Since branch expansion is among the main strategies of the bank to increase its profitability by increasing market share and quality service, the researcher wants to identify significance of number of branch on its profitability. Before testing the stationarity, this variable is converted natural logarithm. The hypothesis for the stationarity test for variable is given stated as follows by using Levin, Lin & Chu t method. The hypothesis for the stationarity test for variable is given stated as follows by using Levin, Lin & Chu t method.

Null hypothesis: variable branch is stationary at level

Alt hypothesis: variable branch is not stationary al level

The researcher presented stationarity test of variable, branch, as follows by using correlogram in table 11(see annex). Because p value at one third of the observation is less than 5%, the researcher rejects null hypothesis and accept alternative hypothesis i.e. variable branch is not stationary at level.

Therefore, this variable stationarity has to be tested at 1st deference.

Null hypothesis: variable asset is stationary at 1st deference

Alt hypothesis: variable asset is not stationary 1st deference

The stationarity test al 1st deference is presented in table 12. Because p value at one third of the observation is greater than 5%, the researcher accepts null hypothesis and reject alternative hypothesis.

Variable branch is not stationary at level but it is stationary at 1st difference. Therefore, the variable is entered in to the model at 1st deference. P value at one third of the observation is more than 5%.

3.4.1.3 Interest Income

Increasing interest income to increase profitability is one of the main strategies of commercial banks. Before the researcher uses this variable to identify determinants of the profitability, stationarity of this variable has to be tested. The hypothesis for the stationarity test for variable is given stated as follows by using Levin, Lin & Chu t method. The hypothesis for the stationarity test for variable is stated as follows by using Levin, Lin & Chu t method.

Null hypothesis: variable interest income is stationary at level

Alt hypothesis: variable interest income is not stationary al level

The researcher presented stationarity test of variable interest income as follows by using correlogram in table 13. Because p value at one third of the observation is less than 5%, the researcher rejects null hypothesis and accept alternative hypothesis i.e. variable branch is not stationary at level. Therefore, this variable stationarity has to be tested at 1st deference.

Null hypothesis: variable asset is stationary at 1st deference

Alt hypothesis: variable asset is not stationary 1st deference

The stationarity test al 1st deference is presented as follows

As shown in table 14, because p value at one third of the observation is greater than 5%, the researcher accepts null hypothesis and reject alternative hypothesis. Variable interest income is not stationary at level but it is stationary at 1st difference. Therefore, the variable is entered in to the model at 1st level. P value at one third of the observation is more than 5%.

3.4.1.4 Noninterest Expense

This is another variable that the researcher uses to identify determinants of profitability of the bank. Noninterest expense is changed to natural logarithm form to reduce number effect. Stationarity of this variable is tested as follows as shown table 15.

Null hypothesis: variable noninterest expense is stationary at level
Alt hypothesis: variable noninterest expense is not stationary al level
The researcher presented stationarity test of variable noninterest expense as follows by using correlogram. Because p value at one third of the observation is less than 5%, the researcher rejects null hypothesis and accept alternative hypothesis i.e. variable noninterest expense is not stationary at level. Therefore, this variable stationarity has to be tested at 1st deference.

Null hypothesis: variable noninterest expense is stationary at 1st deference
Alt hypothesis: variable noninterest expense is not stationary 1st deference

The stationarity test al 1st deference is presented in table 16. Because p value at one third of the observation is greater than 5%, the researcher accepts null hypothesis and rejects alternative hypothesis. Variable noninterest expense is not stationary at level but it is stationary at 1st difference. Therefore, the variable is entered in to the model at 1st level. P value at one third of the observation is more than 5%.

All independent variables such as asset, interest income, branches and noninterest expense are not stationary al level. Therefore, all independent variables are stationary after 1st difference.

3.5 Model Selection

The researcher used the multiple regression OLS time series model. Characteristics of the model and proposed variables are likely not to violet the classical assumption underlying the OLS model.

3.6 Method of Data Analysis

In this study data collected was analyzed by using descriptive analysis such as means, maximum, minimum, and standard deviation. In addition, correlation analysis was used so as to select the appropriate variables which to be included in the model and to check for multicolliearity of the data. Regression analysis was used to explain the total variation in dependent variable by breaking it into the explained variation due to explanatory variables to be included into the model and the residual variation. OLS method was used to estimate the estimation model.

Only significant variables are included in the study. Return on asset was used as dependent variable and asset, non interest expense and number of branch are the significant independent variables. All independent variables in the model are stationary after 1^{st} difference. In order to reduce number effect all independent variables are in natural logarithmic form. Autocorrelation and heteroscedasticity of the data is tested.

Therefore, time series model expressed as follows was used to analyze the relationship among the variable.

$$ROA_t = \beta_{0+} \beta_1 Asset_t + \beta_2 interest\ income_t + \beta_3 non\ interest\ expense_t + \beta_4 Branches_t + U_t$$

ROA refers the dependent variable which is return on asset.

β refers to the coefficient of independent variables.

U_t = Error term

3.7 Residuals Test

3.7.1 Autocorrelation

In order to test the autocorrelation of residuals the researcher used Breusch-Godfrey Serial Correlation LM Test. The study uses Obs*R-squared to test the hypothesis. Hypothesis of the test is as follows;

Null: Residuals are not serially correlated

Alt: Residuals are serially correlated

Table 2: Serial Correlation LM Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.182272	Prob. F(2,17)	0.8350
Obs*R-squared	0.503847	Prob. Chi-Square(2)	0.7773

Source: Author Computed, 2016

From the above test Obs*R-squared is 0.77 that the researcher accept null hypothesis and reject alternative hypothesis.

Therefore, there is no serial correlation among residuals.

3.7.2 Heteroskedasticity Test

To test heteroskedasticity the researcher used Breusch-Pagan-Godfrey test. The study uses Obs*R-squared to test the hypothesis. Hypothesis is tested as follows;

Null: Residuals are not heteroscedastic

Alt: Residuals are heteroscedastic

Table 3: Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.047541	Prob. F(4,19)	0.9954
Obs*R-squared	0.237827	Prob. Chi-Square(4)	0.9935
Scaled explained SS	0.287756	Prob. Chi-Square(4)	0.9906

Source: Author Computed, 2016

Since p value of Obs*R-squared is 0.9935, the researcher accepts null hypothesis and rejects alternative hypothesis. Therefore, residuals are not heteroscedastic. Residuals are homoskedastic which is among the requirements of assumptions of the model.

3.7.3 Normality Test

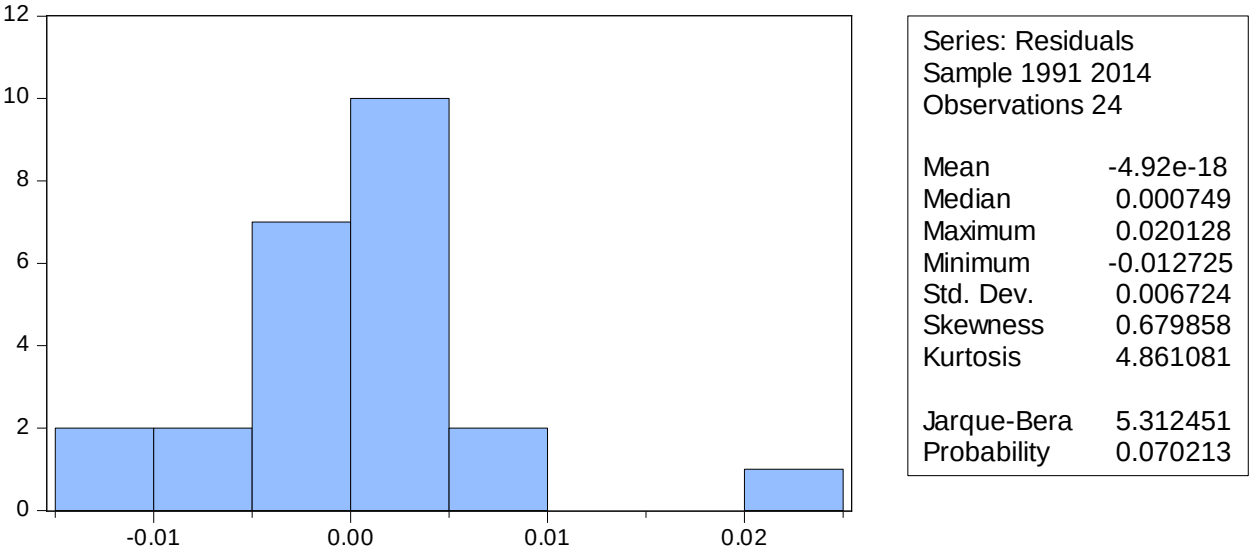
The researcher used histogram normality test to test distribution of residuals.

Hypothesis for normality test of residuals is as follows;

Null Hypothesis: residuals are normally distributed

Alt: residuals are not normally distributed

Table 4: Normality Test



Source: Author computed, 2016.

The correspondent p value of Jarque-Bera is 0.07 which is more than 5%. Therefore, the researcher accepts null hypothesis and reject alternative hypothesis i.e. residuals are normally distributed.

All variables are stationary and residuals are not serially correlated, not heteroscedacitic and they are normally distributed.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Results of the Study

This section deals with the results of research paper like descriptive analysis, correlation analysis and regression analysis.

4.1.1 Descriptive Analysis

Conducting descriptive analysis before undertaking regression analysis the researcher used to show much about the relationships between dependent and independent variables. Table 5 shows the descriptive analysis of variables under study. This analysis includes mean, minimum, maximum and standard deviation. The value of the mean reports the arithmetical average of the variables which are included in the study. The minimum and maximum values indicate the lower and the highest value of the variable. The standard deviation exhibits how much variation or dispersion exists from the mean. A low standard deviation indicates that the data points are inclined to be extremely close to the mean; while high values of standard deviation (SD) indicates that the data set is broaden out over a large range of values. The descriptive analysis that would be carried out in this section mainly depends on summary statistics presented below.

Table 5: Descriptive analysis

(Dependant variable (ROA) and independent variables

In millions except BRANCH)

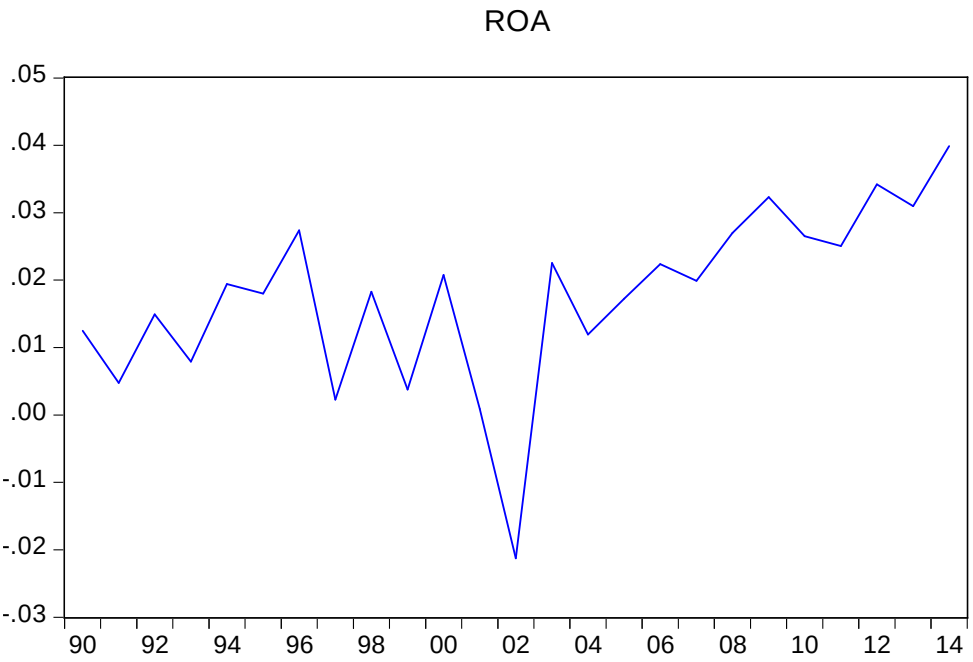
	ROA	ASSET	IINTEREST INCOME	NON INTEREST EXPENSE	BRANCH
Mean	0.02	49,240.55	2,043.39	762.12	286.24
Maximum	0.04	242,726.00	11,997.00	4,073.00	977.00
Minimum	-0.02	2,733.65	153.00	86.00	158.00
Std. Dev.	0.01	63,038.49	3,007.31	948.02	228.97
Observations	25	25	25	25	25

Source: author computed, 2016

As stated in the above table, mean of ROA is 0.02 for the commercial bank of Ethiopia for the study period undertaken. This is to mean that an average amount of net profit obtained from one birr investment is 2.00 cents. Therefore, 2% of profit is obtained by investment. Minimum value loss of 0.02 and 0.04 is the maximum value in the data set. This means, when the bank earns highest profit, it earned 4 cents of net income from one birr investment in asset. This shows 4% of net income for the bank comes from investment. The least return on asset of the bank in the study is loss of 2 cents from one birr investment. On the other hand, 2% of net income loss comes from investment. The data set has the standard deviation of 0.010 which is low and indicates that there is very low variation in the data set and more close to the mean.

Following graph 1 illustrated trends of return on asset over study period. It is highly fluctuating because it calculated by using deferent variables like asset, income and expenses of the bank. But on average the return on asset of the bank is increasing over the study period.

Graph 1: Trend of ROA



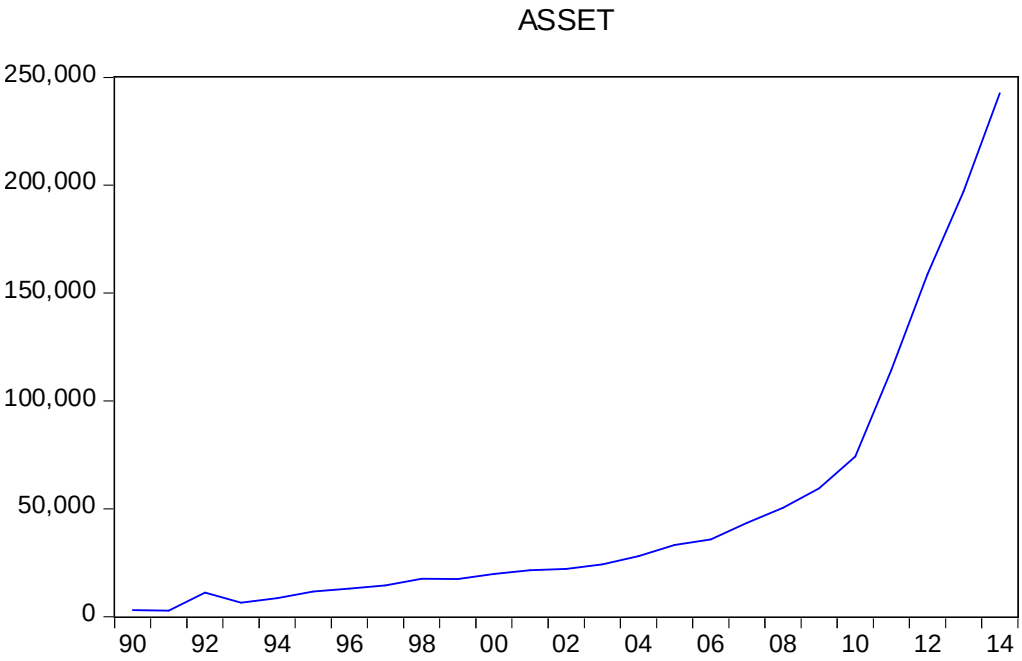
Source: Author Computed, 2016.

Output of the descriptive statistics indicates in table 5 that the mean value of asset 49.24 billion. This is to mean that on average in 25 years the bank owned total asset of birr 49.24 billion. On the other hand, the least and highest asset of the bank in 25 years is 2.7 and 242.7 billion respectively. The research data set of asset has experienced standard deviation equal to 63 billion

which is not closely to mean value in given data set which shows the asset of the bank highly various from mean asset from year to year.

Graph 2 below shows graphical representation of an asset over 25 years. As the graph shows an asset of the bank steeply increased since 2010.

Graph 2: Trend of Asset

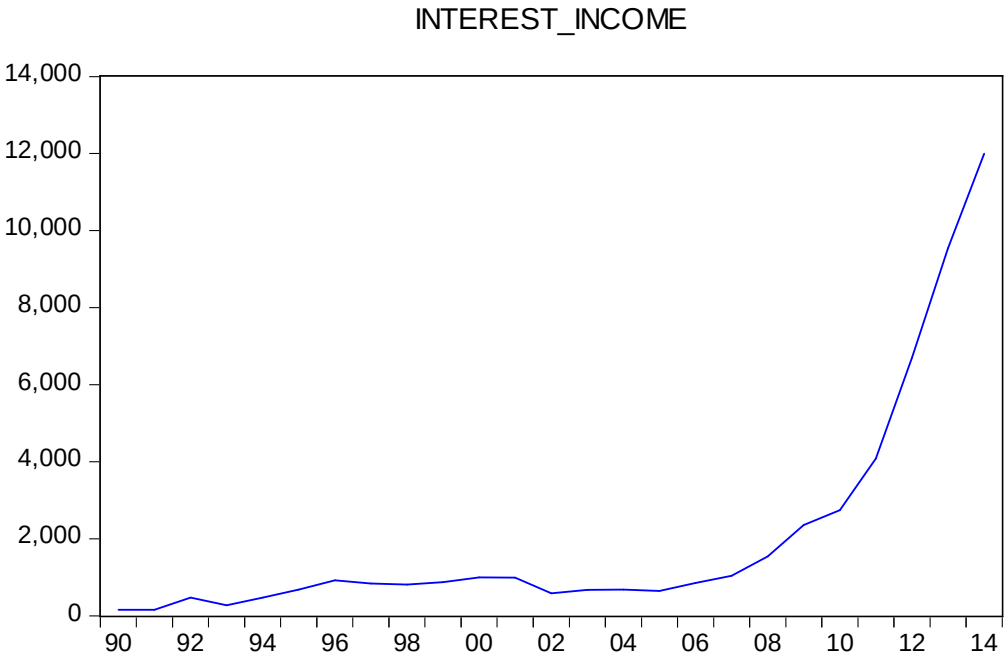


Source: author computed, 2016

The observation of interest income of the commercial banks has showed the mean for the given data set is 2.4 billion. On the other hand, this study shows the minimum interest income in 25 years is 153 million and maximum interest income is 12 billion. Data set of interest income has experienced standard deviation equal to 3 billion which closer to the mean value. This indicated that there is lower variation in average interest income of the bank over the period.

Following graph 3 shows graphical representation of the interest income. According to the data collected slope of the graph is highest since 2010. This shows the bank is earning highest interest income since 2010.

Graph 3: Trend of Interest Income

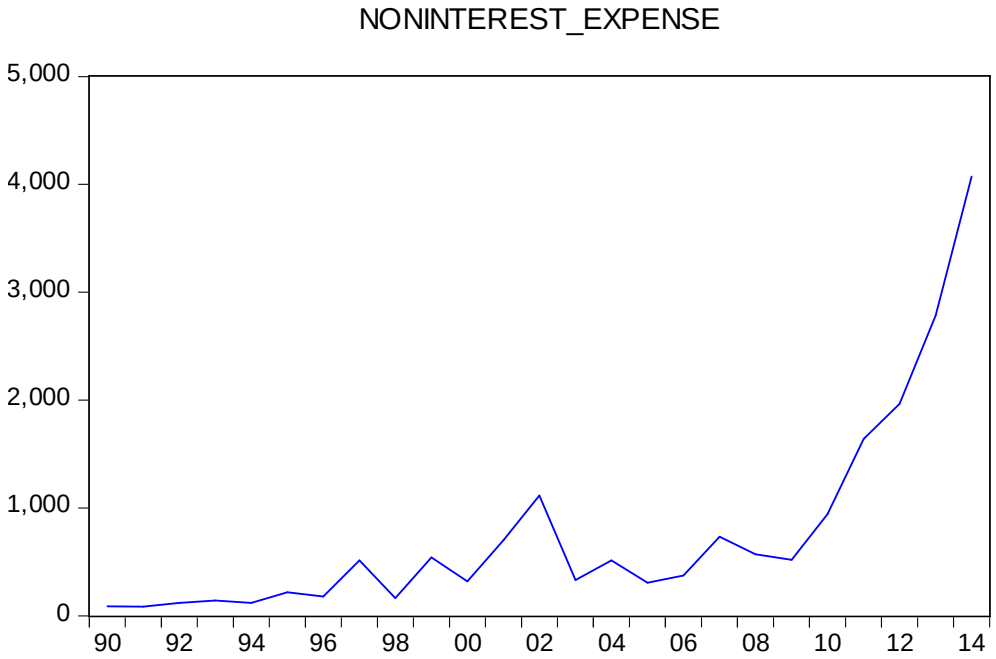


Source: Author Computed, 2016

Average noninterest expense of the data set equal to 762 million. 4 billion is the highest noninterest expense in the given data set and 86 million is the minimum noninterest expense in the study period undertaken. Standard deviation has registered the value equal to 948 million which is closer to mean value noninterest expense.

Following graph 4 represents series of noninterest expenses for 25 years since 1990. This is to illustrate trend of the expense. As the graph shows, general expense of the bank is increasing from year to year and the slope is steepest since 2010. This is because the bank hiring large human power, advertising and marketing strategies of the bank.

Graph 4: Trend of Noninterest Expense

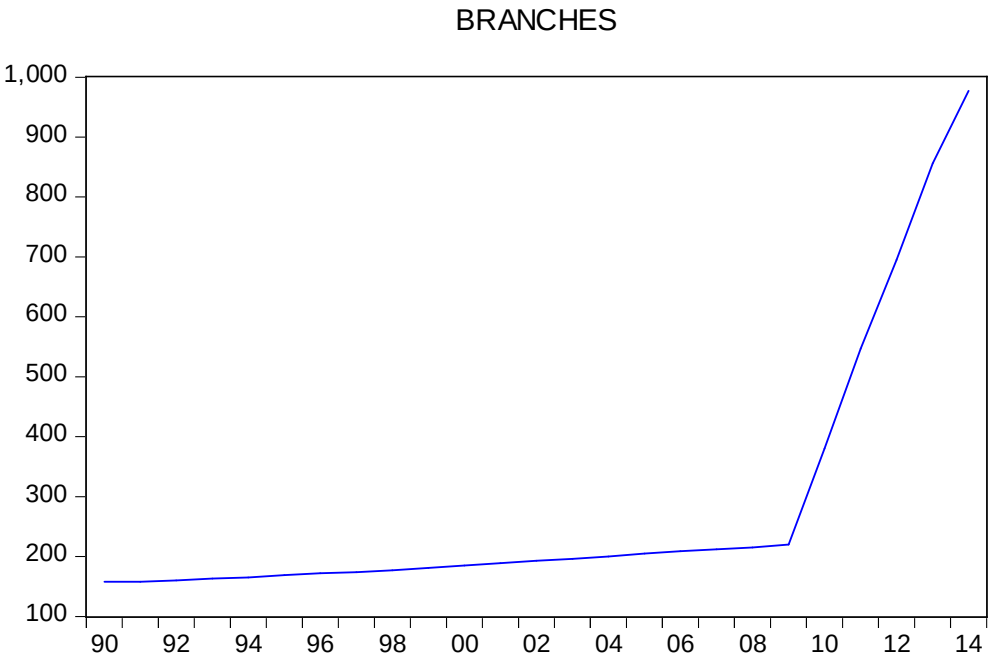


Source: Author Computed, 2006.

On average the branches of the bank in 25 years sample period are 286. Minimum number of branches during the study period is 158 at first year of the study and maximum number of branches during the study is 977. Data set of study of number of branch has experienced standard deviation equal to 228.97.

The following line graph 5 is to illustrate trend of branches expansion over the study period. As shown on the graph, branch expansion is highly started from 2009.

Graph 5: Trend of Branch



Source: Author Computed, 2016.

4.1.2 Correlation analysis

Correlation analysis was used in this study to find out the relationship between variables.

Table 6: The Correlation Analysis

Covariance Analysis: Ordinary
Sample (adjusted): 1991 2014
Included observations: 24 after adjustments
Balanced sample (listwise missing value deletion)

Correlation	ROA	Dlog(Asset)	Dlog(Branches)	Dlog(Interest_ Income)	Dlog(noninterest _expense
ROA	1.000000				
Dlog(Asset)	0.228989	1.000000			
Dlog(Branches)	0.386145	0.145878	1.000000		
Dlog(Interest_Income)	0.593771	0.816148	0.152473	1.000000	
Dlog(noninterest_expense)	-0.300074	0.049762	0.235427	-0.031884	1.000000

Source: Author Computed, 2016

From the correlation coefficients presented in the Table 6 above, there is no serious multicollinearity among the independent variables. Highest correlation is between asset of the

bank and its interest income from all independent variables. Noninterest expense and interest income are negatively correlated that when noninterest expense increases, interest income reduces.

Profitability of the bank which is represented by return on asset has strong positive association (0.59) with its interest income and followed by branch expansion but moderately correlated with the rest of the independent variables. But noninterest expense and return on asset are negatively correlated that increase in noninterest expense is decreasing profitability of the bank. in addition, return on asset and asset are positively associated.

4.1.3 Regression Analysis

This section presents the empirical findings from the econometric results on the determinants of profitability of commercial bank of Ethiopia. The section covers the empirical regression model used in this study and results of the regression analysis. OLS time series model used for the study is expressed as follows with only significant variables.

Table 7: Regression Analysis

Dependent Variable: ROA
Method: Least Squares
Sample (adjusted): 1991 2014
Included observations: 24 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.013529	0.001923	7.036001	0.0000
Dlog(Asset)	-0.029984	0.008458	-3.545035	0.0022
Dlog(Branch)	0.039253	0.011941	3.287272	0.0039
Dlog(interest_income)	0.043646	0.007998	5.456805	0.0000
Dlog(noninterest_Income)	-0.007125	0.002663	-2.675157	0.0150

R-squared	0.744354	Mean dependent var	0.017797
Adjusted R-squared	0.690534	S.D. dependent var	0.013299
S.E. of regression	0.007398	Akaike info criterion	-6.792128
Sum squared resid	0.001040	Schwarz criterion	-6.546700
Log likelihood	86.50554	Hannan-Quinn criter.	-6.727016
F-statistic	13.83037	Durbin-Watson stat	1.261040
Prob(F-statistic)	0.000019		

Source: Author computed, 2016

Above mentioned table 7 represents the result of regression analysis. The value of R-Squared is 0.74 in the model which shows that 74.44% variation in the dependant variable or ROA is described by the independent variables of the model and 25.56% variation is not explained by the independent variables or internal factors in the study. The value of F- statistic 13.83 and is significant supporting the model relevant to the study. F-statistic is greater than F-critical (prob(F-statistic)) that implies independent variables are jointly affecting profitability of the bank. The value of Durbin Watson is 1.26 which shows that there is no autocorrelation in residuals. Asset of the bank is negatively affecting the profitability of the bank i.e. when asset of the bank increases, profitability of the bank decreases if other variables remain constant. Specifically, when asset of the bank increases with one birr, return on asset of the bank decease by 0.02 birr. Branch expansion is also significant determinant of the profitability of the bank. The relationship between return on asset and branch expansion is positive i.e. when number of branches increase return on asset rises if other independent variables are constant. Branch expansion is ensuring quality service which increases performance of the bank by mobilizing deposits. When number of branch increases by one, return on asset increases by 0.039. Another variable of the study that affects profitability of the bank is interest income. This is the most significant variable in the study with coefficient of 0.043. This implies that when the interest income increases with one birr, return on asset increases by 0.043 birr when other variables are constant. On the other hand, noninterest expense is significantly affecting profitability of the bank. When noninterest expense is increasing by one birr, return on assets decreases by 0.007 and vice versa. All independent variables are significant at level of 5%.

The empirical model used in the study in order to analyze determinants of the profitability of the banks is as follows;

Estimation Equation:
==========
ROA = C(1) + C(2)*DLOG_ASSET + C(3)*DLOG_BRANCH + C(4)*DLOG_INTEREST_INCOME + C(5)*DLOG_NONINTEREST_EXPENSE

ROA = 0.013- 0.03*DLOG_ASSET + 0.039*DLOG_BRANCH + 0.043*DLOG_INTEREST_INCOME - 0.007*DLOG_NONINTEREST_EXPENSE

4.1.4 Test Results

The regression analysis from Table 7 is used to test the hypothesis.

Table 8: The Hypotheses Summary

Hypothesis	Test
1. There is significant positive relationship between asset and profitability of bank.	Accepted
2. There is significant positive relationship between interest income and banks profitability.	accepted
3. There is significant positive relationship between branch expansion and profitability of the banks.	Accepted
4. There is significant negative relationship between Operating Expense and commercial banks profitability.	accepted

As expected, interest income and branch expansion has significant positive relationship with profitability of the bank. Although the relationship of asset with profitability is significant, it is negative. The researcher expected positive relationship based on the strategy of the bank. As it was expected noninterest expense and bank profit are negatively associated.

4.2 Discussion of the study

This study was intended to find determinants of profitability of commercial banks in Ethiopia by using data period from 1990 to 2014. As a result, the study identified determinants that have potential of affecting profit of the bank. Following the result obtained from the regression analysis as depicted in the above table 7 the next section tries to present the analysis with respect to each profit determinant.

4.2.1 Asset of the Bank

Asset of the bank shows the natural logarithm of total assets and demonstrates significant negative relationship with the profitability of commercial bank of Ethiopia which means that the size of banks affects profitability of the banks negatively.

According to the study by Susan(2014) bank size which is measured by natural log of total assets has positive significant effect on profit of Kenyan top six commercial banks. According to study by Sehrish et al(2011) bank size have significant positive relation with ROA, where total assets indicate the size of the bank. This positive relationship shows that the size of the bank has significant positive impact on profitability. It suggests that larger banks achieve a higher ROA.

But according to Ani et al(2012) the size has a significant negative relationship with profitability. This significant negative relationship shows that the size of a bank could significantly affect the profitability of the bank negatively. This is in consonance with the findings of Berger et al. (1987), Naceur (2003) and Javaid et al. (2011). The major outcome of this study is that higher total assets may not necessarily lead to higher profits.
The negative coefficient of asset indicates that this relation might be negative due to diseconomies of scale suffered by banks due to uncontrollable increased size. Therefore, this study has the same result with these studies.

4.2.2 Interest Income

This variable is explained in the model as a first difference natural logarithm of interest income. It is a primary source of income for the banks because banks make loan and receive interest income. According to the study when the interest income is higher, profitability is higher.
Havrylchyk et al.(2006) found a positive and significant relationship between interest income and profit of the banks. It implies that a more efficient bank should have higher profits since it is able to maximize on its net interest income. As expected interest income has positive effect on profitability of commercial banks. This result is consistent with the study of Havrylchyk et al.(2006).

4.2.3 Noninterest Expense

Consistent with expectation the result suggests that noninterest expense has the negative significant relationship with the ROA. This negative relationship shows that when the noninterest expense ratio increases profitability of the commercial banks decreases. According to

the study by Susan(2014) increases in bank operation expenses reduce bank profitability of the top Kenyan banks in the period 2008-2013. Negative relationship has been supported by various studies like Bourke (1989), Jiang et al (2003), Obamuyi (2013), suggesting that profitable banks operate at lower costs. . The results for this paper, implies that poor expenses management explains the poor performance of commercial banks of Ethiopia. Managing expenses well will improve the performance of the banks. Bank operation expenses significantly reduce of the bank. This suggests that there is possibility for the commercial bank of Ethiopia to increase their profits by putting more effort on proper costs control and operating efficiency. This can be achieved by finding ways of optimal utilization of bank resources during production of banking products and services. Commercial banks need to invest on efficient management and in technologies that reduce costs of operations in order to enhance their performance.

4.2.4 Branch Expansion

Branch expansion is among the main strategies of the bank. This strategy is to increase quality of service such as giving intended service within few minutes and increasing accessibility of the bank that enables to mobilize deposit and increase customers. The researcher tried to identify the success of this strategy by using branch expansion as a one variable. According to the study branch expansion has positive significant impact on return on asset of the bank. Therefore, the bank is successful bank increasing the branches.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of Finding

This study is conducted with title of determinants of profitability of commercial banks in Ethiopia with the case study of commercial bank of Ethiopia. This is bank most profitable bank in the country. The study intended to identify significant internal determinants of the banks by using data of 25 years from 1990 to 2014 from this most profitable bank. The researcher developed relevant research questions to reach the objective. In addition to this, hypothesis was developed. As the descriptive research, the study used descriptive analysis for the data presentation and result discussion of the study. The researcher collected quantitative data from National Bank of Ethiopia and Commercial Bank of Ethiopia. The researcher used Ordinary Least Square method for regression analysis. Return on asset is used as dependent variable in order to measure profitability of the bank. Assets, Interest Income, Noninterest Expense and Number of Branch of the bank are used as independent variable. The independent variables are interred in to the model by natural logarithmic form. Since these variables are not stationary at level, in the model they are used at 1^{st} difference. The findings revealed that asset of the bank; bank operation expenses (noninterest expense), interest income, and number of branches are the major significant determinants of the profitability of commercial bank of Ethiopia. According to this study number of the branch and interest income have significant positive effect on profitability of the bank but noninterest expense and asset of the bank have significant and the negative effect.

All independent variables are significant at the 5% level in the regression with the predictions. This significance suggests that the asset, number of branch, interest income and noninterest expense are important in jointly determining the profitability of commercial bank of Ethiopia.

5.2 Conclusions

The empirical findings of the determinants of profitability of commercial bank of Ethiopia for suggests following conclusions.

The main purpose of this study was to find out the most important internal factors that are affecting the profitability commercial bank of Ethiopia. The necessary data was collected from secondary sources. Financial ratios were calculated and statistical tools including; (percentages, averages, the natural logarithm, correlation, descriptive analysis of variance and regression analysis) were utilized in testing the hypotheses. As a result, this study investigated the effects of internal determinants of profitability on commercial bank of Ethiopia over the period 1990 to 2014. The study used secondary time series data collected from the National Bank of Ethiopia and websites of the bank. The regression analysis was done using the Ordinary Least Squares.

Asset has negative significant effect on profitability of the bank. This negative relationship is suggesting that when asset of the bank is increasing, it earning lower profit through diseconomies of scale. The commercial bank of Ethiopia is still losing from diseconomies of scale. From this result the researcher concludes the bank is losing from large assets it owns. Therefore, asset of the bank is an important factor in determining profitability of commercial bank of Ethiopia.

Noninterest expense has significant negative effect on profitability of the bank. According to the result, best performing bank operates at lowest noninterest expense. Decreasing noninterest (operational) expense is decreasing costs and increasing profitability. The researcher concludes that banks that lower noninterest expense earns higher profit than that do not. Therefore, noninterest expense is among major determinants of the profitability of the bank. Noninterest expense significantly determines performance of the commercial banks. This suggests that there is possibility for commercial banks to increase their profits by putting more effort on proper costs control and operating efficiency. This can be achieved by finding ways of optimal utilization of bank resources during production of banking products and services.

However, further research is needed to clear the grey areas especially over a longer period of time.

Interest income has significant positive effect on profitability of the bank. According to the result, the performance of the bank is best, it collects highest interest income. Increasing interest income is increasing net income of the bank and increasing its profitability. The researcher concludes that when the bank that increases its interest income, it earns higher. Therefore, interest income is among major determinants of the profitability of the bank that it significantly determines performance of the bank. This suggests that there is possibility for the banks to increase its profits by putting more effort to increase interest income. This can be achieved by finding ways of optimal utilization of bank resources deposits and reducing non performing loan. However, further research is needed to clear the grey areas especially over a longer period of time and including other banks.

Branch expansion has positive significant effect on profitability of the bank. This positive relationship is suggesting that when asset of the bank is increasing, it earning higher profit. The commercial bank of Ethiopia is still gaining from branch expansion. From this result the researcher concludes the bank is gaining from branch expansion. Therefore, branch expansion strategy is successful in determining profitability of the bank.

5.3 Recommendations

Asset is among the main determinants of profitability of the bank. It is increasing from year to year. Asset increase has negative impact on profitability of the bank. The bank is costing from asset expansion. The study shows asset is reaching to uncontrollable size i.e. it is creating diseconomies. The bank has to use existing assets rather than purchasing the new. Management of the bank has to focus on asset management instead of increasing the size. According to the study asset and return on asset of the bank are inversely related. The asset is not properly managed.

As the study shows interest income is significant factor of profitability of the bank. The results also confirmed that improvement in interest income of commercial bank of Ethiopia leads to

higher profits. Main source of income for commercial banks is interest income. Commercial banks are diversifying to other income sources such as service charges and commissions. But this source is not significant in this study. Interest income is collected by giving loan and advances. It is not easily achievable because there must be loanable deposit such as time deposit. And mobilizing this deposit is not easy task. The bank is recommended to increase its interest income by providing loan and improving loan collection mechanisms such as lending for feasible projects and holding collateral.

Expenses are significantly decreasing profitability of the bank. The bank has to decrease unnecessary expenses by investing on efficient management and in technologies that reduce costs of operations in order to enhance their performance.

Branch expansion is significantly affecting profitability of the bank. It one of the main strategies used by the bank to increase its performance by the bank more accessible to the existing and new customers. But branch expansion comes with asset expansion that has negative impact on profitability of the bank. The bank has to expand branches by efficient management and in technologies. Therefore, the bank has to increase branches without significantly increasing an asset.

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Annex

Table 9 Asset Stationarity Test at level

Sample: 1990 2014

Included observations: 25

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. |******|	. |******|	1	0.804	0.804	18.188	0.000
. |***** |	. | . |	2	0.629	-0.051	29.784	0.000
. |**** |	. |* . |	3	0.535	0.127	38.570	0.000
. |*** |	. *| . |	4	0.401	-0.165	43.745	0.000
. |**. |	. | . |	5	0.301	0.042	46.806	0.000
. |**. |	. | . |	6	0.225	-0.047	48.604	0.000
. |* . |	. | . |	7	0.149	-0.016	49.432	0.000
. |* . |	. | . |	8	0.082	-0.045	49.699	0.000

Source: researcher computed, 2016

Table 10: Asset Stationarity Test at 1st deference

Sample 1990 2014

Included observations: 24

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
****| . |	****| . |	1	-0.511	-0.511	7.0878	0.008
. |* . |	. *| . |	2	0.125	-0.184	7.5342	0.023
. |* . |	. |* . |	3	0.101	0.116	7.8349	0.050
. | . |	. |* . |	4	-0.019	0.160	7.8466	0.097
. | . |	. | . |	5	-0.041	0.019	7.9006	0.162
. | . |	. | . |	6	0.069	0.015	8.0681	0.233
. *| . |	. *| . |	7	-0.087	-0.086	8.3473	0.303
. | . |	. *| . |	8	-0.001	-0.110	8.3474	0.400

Source: researcher computed, 2016

Table 11: Branch Stationarity Test at level

Sample: 1990 2014

Included observations: 25

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. |****** |	. |****** |	1	0.812	0.812	18.541	0.000
. |**** |	. *| . |	2	0.597	-0.183	28.998	0.000
. |*** |	. *| . |	3	0.387	-0.113	33.605	0.000
. |* . |	. *| . |	4	0.200	-0.085	34.894	0.000
. | . |	. | . |	5	0.071	0.015	35.063	0.000
. | . |	. |* . |	6	0.045	0.168	35.135	0.000
. | . |	. *| . |	7	0.020	-0.099	35.150	0.000
. | . |	. | . |	8	-0.006	-0.061	35.151	0.000

Source: researcher computed, 2016

Table 12: Branch Stationarity Test at 1st difference

Sample: 1990 2014

Included observations: 24

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. |**** |	. |**** |	1	0.594	0.594	9.5678	0.002
. |**. |	. | . |	2	0.328	-0.039	12.614	0.002
. |* . |	. | . |	3	0.183	0.006	13.613	0.003
. | . |	. *| . |	4	0.035	-0.105	13.652	0.008
. | . |	. | . |	5	-0.034	-0.014	13.691	0.018
. | . |	. | . |	6	-0.043	0.011	13.754	0.033
. | . |	. | . |	7	-0.057	-0.027	13.873	0.053
. | . |	. | . |	8	-0.062	-0.019	14.021	0.081

Source: researcher computed, 2016

Table 13 Interest Income Stationarity Test at level

Sample: 1990 2014

Included observations: 25

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. |****** |	. |****** |	1	0.779	0.779	17.056	0.000
. |**** |	. *| . |	2	0.571	-0.090	26.625	0.000
. |*** |	. | . |	3	0.425	0.026	32.158	0.000
. |**. |	. *| . |	4	0.254	-0.163	34.232	0.000
. |* . |	. | . |	5	0.123	-0.015	34.744	0.000
. | . |	. *| . |	6	0.014	-0.080	34.751	0.000
. | . |	. | . |	7	-0.040	0.055	34.811	0.000
. | . |	. | . |	8	-0.061	-0.002	34.961	0.000

Source: Author Computed, 2016

Table 14: Interest Income Stationarity Test at 1st deference

Sample: 1990 2014

Included observations: 24

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
.**| . |	.**| . |	1	-0.212	-0.212	1.2153	0.270
. |**. |	. |* . |	2	0.231	0.195	2.7316	0.255
. |* . |	. |* . |	3	0.111	0.209	3.0986	0.377
. |* . |	. |* . |	4	0.151	0.188	3.8077	0.433
. | . |	. | . |	5	0.017	0.019	3.8168	0.576
. *| . |	.**| . |	6	-0.118	-0.247	4.3020	0.636
. *| . |	***| . |	7	-0.173	-0.404	5.4051	0.611
. *| . |	.**| . |	8	-0.101	-0.312	5.8002	0.670

Source: Author Computed, 2016

Table 15: Noninterest Expense Stationarity Test at level

Sample: 1990 2014

Included observations: 25

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. |***** |	. |***** |	1	0.694	0.694	13.559	0.000
. |**** |	. |* . |	2	0.585	0.199	23.615	0.000
. |*** |	. *| . |	3	0.408	-0.112	28.725	0.000
. |**. |	. *| . |	4	0.265	-0.094	30.983	0.000
. |* . |	. | . |	5	0.189	0.042	32.185	0.000
. |* . |	. | . |	6	0.097	-0.039	32.521	0.000
. | . |	. | . |	7	0.044	-0.028	32.593	0.000
. | . |	. | . |	8	-0.010	-0.035	32.597	0.000

Source: Author Computed, 2016

Table 16: Noninterest Expense Stationarity Test at 1st difference

Sample: 1990 2014

Included observations: 24

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. *| . |	. *| . |	1	-0.161	-0.161	0.6994	0.403
. | . |	. | . |	2	0.062	0.037	0.8076	0.668
. |* . |	. |* . |	3	0.185	0.206	1.8195	0.611
. |* . |	. |**. |	4	0.159	0.233	2.6035	0.626
. *| . |	. *| . |	5	-0.144	-0.111	3.2799	0.657
. *| . |	.**| . |	6	-0.151	-0.306	4.0665	0.668
. *| . |	***| . |	7	-0.136	-0.357	4.7423	0.691
. *| . |	.**| . |	8	-0.128	-0.245	5.3781	0.716

Source: researcher computed, 2016

Table 17: Study Data (in million birr except Branch)

YEAR	ASSET	BRANCH	CAPITAL	DEPOSIT	INTEREST EXPENSE	INTEREST INCOME	LOAN	NON INTEREST EXPENSE	NON INTEREST INCOME	ROA
1990	2,960	158	104.00	4,188.00	87.00	153.00	934.00	88.00	60.00	0.013
1991	2,734	158	104.00	4,374.00	97.00	158.00	841.00	86.00	41.00	0.005
1992	11,187	160	232.00	7,456.00	266.00	474.00	2,856.00	119.00	154.00	0.015
1993	6,442	163	104.00	5,732.00	172.00	274.00	2,199.00	141.00	96.00	0.008
1994	8,596	165	232.00	7,093.00	266.00	474.00	2,856.00	120.00	155.00	0.019
1995	11,661	169	365.00	8,964.00	336.00	682.00	4,467.00	217.00	226.00	0.018
1996	13,006	172	632.00	10,296.00	440.00	924.00	6,394.00	178.00	219.00	0.027
1997	14,455	174	940.00	11,246.00	378.00	836.00	7,143.00	514.00	275.00	0.002
1998	17,503	177	1,090.00	14,391.00	380.00	813.00	8,088.00	165.00	185.00	0.018
1999	17,434	181	1,124.00	13,775.00	358.00	876.00	8,430.00	540.00	355.00	0.004
2000	19,828	185	1,289.00	15,715.00	382.00	1,000.00	8,909.00	318.00	320.00	0.021
2001	21,489	189	1,301.00	17,471.00	428.00	987.00	8,699.00	700.00	354.00	0.001
2002	22,146	193	829.00	18,530.00	395.00	586.00	7,357.00	1,116.00	418.00	-0.021
2003	24,200	196	1,277.00	19,762.00	251.00	670.00	6,075.00	331.00	628.00	0.023
2004	27,975	200	1,496.00	22,531.00	268.00	680.00	6,296.00	513.00	588.00	0.012
2005	33,169	205	1,429.00	25,367.00	291.00	646.00	7,533.00	306.00	740.00	0.017
2006	35,849	209	1,506.00	28,286.00	330.00	853.00	7,653.00	374.00	971.00	0.022
2007	43,456	212	4,220.00	32,873.00	351.00	1,036.00	8,370.00	732.00	1217.00	0.020
2008	50,416	215	4,560.41	37,633.28	534.00	1,541.00	16,275.40	570.00	1431.00	0.027
2009	59,411	220	5,040.70	43,489.41	614.09	2,357.84	20,256.70	517.96	1489.89	0.032
2010	74,187	380	5,555.00	54,646.21	744.13	2,742.82	23,572.81	942.32	1751.39	0.027
2011	114,265	547	6,261.55	84,798.54	1,117.21	4,081.54	35,099.26	1,639.42	2912.68	0.025
2012	158,814	695	7,724.21	116,584.50	1,676.40	6,703.46	60,940.26	1,965.86	4870.40	0.034
2013	197,104	856	9,045.23	152,386.00	2,376.06	9,539.04	69,674.77	2,786.34	4425.57	0.031
2014	242,726	977	10,703.00	192,275.00	3,436.00	11,997.00	70,235.00	4,073.00	5198.00	0.040

Source: National Bank of Ethiopia, 2016