ST.MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

DETERMINANTS OF NON-INTEREST INCOME IN ETHIOPIAN COMMERCIAL BANKS: THE CASE OF PRIVATE COMMERCIAL BANKS

BY

TESFAYE ZENEBE

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ADDIS ABABA, ETHIOPIA

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Advisor: Asmamaw Getie (Assistant professor)

A THESIS SUBMITTED TO ST.MARY'S UNIVERSITY, SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION (GENERAL)

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DECLARATION

I, the undersigned, declare that this thesis is my original work, has not been presented for a degree in any other university and that all sources of materials used for the thesis have been dully acknowledged.

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ENDORSEMENT

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

Asmamaw Getie (Asst.Prof.) _____

Advisor Signature& Date

Table of Contents

L I S T O F T A B L E S

Page

Acknowledgement

First of all, I would like to give glory to almighty GOD for giving me courage and strength in my life and for everything he has delivered.

I would like to greatly express my utmost gratitude to my advisor Asmama Getie (Ass. professor) for his guidance in accomplishing this thesis and make it successful. Besides, I extend my gratitude to my families

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LIST OF TABLES

Page

LIST OF FIGURES

ACRONYMS

AB	Awash Bank
ATM	Automatic Teller Machine
BOA	Bank of Abyssinya
CBO	Cooperative Bank of Oromia S.C
CLRM	Classical Linear Regression Model
CSAA	Central Statistics Authority Agency
DB	Dashen Bank
HHI	Herfindahl-Hirschman Index
IMF	International monetary Fund
NBE	National Bank of Ethiopia
NIB	Nib International Bank
NII	Non interest income
NIIRATIO	Non-interest income ratio
OLS	Ordinary Least Square
RELROA	Relative performance
UB	United Bank
WB	Wegagen Bank

Abstract

This paper aimed at investigating the factors determining non-interest income of private commercial banks in Ethiopia. The study employed quantitative research approach and explanatory research design. Population of the study is all private commercial banks registered by National Bank of Ethiopia and seven private commercial banks were selected by using purposive sampling technique. This study used a panel dataset of audited financial statement of banks between the years of 2005 and 2016. Seven independent variables were investigated using OLS regression techniques. The models considered the effect of bank specific factors which are relative bank efficiency, liquidity, bank size, capital adequacy, loan quality and external factors such exchange volatility and real GDP growth on non-interest income of private banks in Ethiopia. Empirical results verified that the non-interest income of private banks related strongly and directly with bank specific factors which are relative bank efficiency, bank size, and bank liquidity. However capital adequacy and loan quality are inversely related but they are insignificant. On the other hand exchange volatility has direct and significant relation with non-interest income of private commercial banks. However, there is no relationship of real GDP growth, with non-interest income of bank. Therefore, it is recommended that private commercial banks should increase their level of bank efficiency, asset, liquidity, foreign currency generation, level diversify their non-interest income sources in order to increase non-interest income of the bank.

Key words: Non-Interest income, private Banks, Bank specific factors, External factors.

CHAPTER ONE

1. INTRODUCTION

1.1. Background of the study

Financial sector of an economy plays a major role in its economic development and prosperity of the country. From financial sector Banks are very important organizations which aid in the execution of socioeconomic activities undertaken by individuals, business organizations and even sovereign states. They serve primarily as a medium which bridges the gap between surplus and deficit spending units in an economy. This fundamental function of banks generate interest income which has over the years being their major source of revenue, since loans form a greater portion of the total assets of banks. Banks can differ markedly in their sources of income. Some focus on business lending, some on household lending and some on fee-earning activities.

The increasing importance of non-interest income (NII), particularly in recent years, has stimulated research on the factors which have underpinned its performance. International evidence has shown that bank characteristics as well as environmental factors such as deregulation, globalization, and investment in technology and developments in the financial architecture have played a significant part in explaining trends in NII. For example, within the Caribbean, Craigwell and Maxwell (2005) showed that ATM technology and bank-specific characteristics in Barbados were the main factors influencing the performance in non-interest income at these banks over the period 1985 to 2001. More specifically, these bank-specific features included the composition of the loan portfolio as well as the degree of personal service offered by the banking institution. The findings for Barbados also showed that non-interest income was positively related to both bank profitability and earnings volatility.

Non-interest income include transaction fees, insufficient funds (NSF) fees, monthly account service charges, inactivity account fees, check and deposit slip fees, management fees, loan arrangement fees, fees for advice, trust and custody fees, and commission on sales of third party financial products such as insurance, trading foreign exchange etc (Basil, Senyo and Albert) (2014).

According to De Young & Rice (2003) over the past two decades, the banking industry has been transformed by sweeping deregulation and rapid technological advances in information flows, communications infrastructure, and financial markets. Deregulation fostered competition between banks, nonbanks, and financial markets where none existed before. In response to these competitive threats and opportunities, many banks embraced the new technologies that drastically altered their production and distribution strategies and resulted in large increases in noninterest income. Few studies are done regarding the issues of non-interest income and determinants of non-interest income in the case of some developed countries. For instance, Karlos (2009), De Young and Rice (2004), Huang and Chen (2006), Kevin (2002), and Craigwell and Maxwell (2005) are some researchers who did their studies on the issues of non-interest income.

De Young and Rice (2004) shown that the increasing presence of noninterest income at commercial banks has been widely documented and discussed in the industry press and regulatory publications. And the magnitude of the non-interest income is varying over time, this situation also observed in Ethiopian banks Thus, it is important to identify factors affecting non-interest income of banks critically for an efficient management of banking income as well as to ensure financial soundness of the banking industry. So this situation motivates to study determinant of noninterest income of Ethiopian commercial banks.

Therefore, the aim of this research is to examine the determinants of non-interest income of commercial banks in Ethiopia over the period of 2005-2016. This helps the bank managers to give due emphasis on the management of identified variables and provides them with understanding of activities that enhance their bank non-interest income.

1.2. Statement of the problem

The commercial banking industry in Ethiopia has changed dramatically over the past two decades and these changes have been documented extensively in academic studies such as (Belayneh, 2011). One notable change is in the composition of bank businesses and product lines toward non-interest income activities for instance ATM, custodial services, internet banking, POS technology.

Traditionally interest income has been the main source of revenue in banking industry. In recent times however, advancements in information and communication technology, increased competition among banking companies as well as the diversity and complexity of businesses and their demands for financial services have compelled banks to consider other banking activities which offer diverse services to clients and beef up revenue generation through fee income. Non-interest incomes are basically incomes earned from sources other than returns on advances to bank clients. One potential channel is that noninterest income may be less dependent on overall business conditions than traditional interest income, so that an increased reliance on noninterest income reduces the cyclical variation in bank profits and revenue (Kevin 2004).
Following the reform measure undertaken by the Ethiopian government commencing the year 1992 was "liberalizing" the financial sector.

According to the data taken from annual report of one state commercial bank and seven private banks which are Commercial bank of Ethiopia (CBE),Awash Bank (AB), Dashen Bank (DB), Bank of Abyssinia (BOA), United Bank (UB), Nib International Bank (NIB) and Wegagen Bank (WB) and cooperative Bank of Oromia (CBO), shows that the share of non-interest income to total income was significant during the time period of Jun 30, 2007 to Jun 30, 2013, which is accounted on average about 40% of their total income. But the share of non-interest income amount varies bank to bank for example from 2007- 2013 average share of non-inters income of DB 43.86%, AIB 44%, BOA 32.86, CBO, 34.57%not only this within the bank also the share of non-interest to total income is varies over year. Some studies are conducted to identify the determinate factor of non-interest income of commercial banks indifferent countries some of them are the following.

Young and Rice (2003) had created statistical associations between non-interest income and bank characteristics, market conditions, technological progress, and bank performance. Sherene Tapper (2010) also on their study attempted to create relation of non-interest income with relative bank performance, Core deposits as a share of total assets, ATM technology, loan portfolio composition, loan quality as well as interest rate and foreign exchange rate volatility in Jamaica's commercial banks.

The above studies tried to relate non-interest income with bank characteristics, technological developments, and macro-economic factors by incorporating different variables. These variables are; relative performance, core deposits, loan, consumer loan, real estate loan, commercial and industrial loan, ATM, loan quality, income diversification, credit card banking, full time employees, size of asset and job growth. However in the context of Ethiopian commercial banks the significance and applicability of some variables are differ so it needs some changes in the independent variable. Specifically in Ethiopia Study conducted by Estifanos (2014) examined the determinants of non-interest income of Ethiopian commercial banks at internal and external level. By employing the variables like; bank efficiency, income diversification, bank lending strategy, traditional banking activities, investment other than loan, Bank specific factor; ATM as technological change variable and GDP growth rate, exchange rate volatility as macroeconomic variable but the study does not show the situation of private commercial banks separately. This is because public bank size is very large and their ownership is different and the researcher concludes that Ethiopian private commercial banks non-interest income not only affected by the above and the study includes the effect of capital adequacy and bank liquidity. .

Hence, the importance of this research is to examine the main determinants of non-interest income of Ethiopian private commercial banks during the period of 2005 to 2016. It is an important research area that needs to be study to assess the past trend of non-interest income and its potential determinants. This study, therefore, seeks to fill the gap by investigating the factors that can have influence on the non-interest income.

1.3. Research Questions

The study try to answer the following basic research questions

- ✓ What are the determinants of non-interest income of private commercial banks in Ethiopia?
- ✓ Which macroeconomic variable or variables more potent for non-interest income of private commercial banks in Ethiopia?
- ✓ Which bank specific variable or variables more potent for non-interest income of private commercial banks in Ethiopia?

1.4. Objective of the study

1.4.1. General Objective

The general objective of study is to investigate factors that can affect the non-interest income of private commercial banks in Ethiopia.

1.4.2. Specific Objectives

- ✓ To examine the effect of Bank efficiency on non-interest income of private commercial banks in Ethiopia.
- ✓ To evaluate the effect of loan quality on Ethiopian private commercial banks non-interest income.
- ✓ To assess the effect of Bank size on non-interest income of private commercial banks in Ethiopia.
- ✓ To investigate the effect capital adequacy on Ethiopian private commercial banks non-interest income.
- ✓ To analyze the effect of Bank liquidity on non-interest income of private commercial banks in Ethiopia.
- ✓ To examine the effect GDP growth rate on Ethiopian private commercial banks non-interest income.
- ✓ To ascertain the effect exchange rate volatility on Ethiopian private commercial banks non-interest income.

1.5 Research Hypotheses

In order to attain the objective of the study, the null hypotheses are developed based on review of relevant and related literatures on the determinants of non-interest income of commercial banks to be tested. Seven testable hypotheses formulated in this study are as follows

H1. Bank efficiency positively affects non-interest income

H2. Loan quality negatively affects non-interest income

H3. Bank size positively affects non-interest income

H4. Capital adequacy positively affects non-interest income

H5. Bank liquidity positively affects non-interest income

H6. Real GDP growth positively affects non-interest income

H7. Exchange rate volatility positively affects non-interest income

1.6. Scope of the study

The determinants of commercial banks non-interest income have been grouped in two broad categories by some economic literature De Young and Rise (2014): which are bank specific factor and external factor. Accordingly, the data for bank specific variables was used 12 years (2005-2016) balance sheet and income and loss statements of seven Ethiopian private commercial banks which are Dashen Bank (DB), Awash Bank (AB), Bank of Abyssinia (BOA), United Bank (UB), Nib International Bank (NIB) and Wegagen Bank (WB) and Cooperative Bank of Oromia (CBO), these banks have been operating throughout the study time period, so they fulfill the intended time period of study. In addition, the study was use bank sector data and country wide macroeconomic data that have been driven from National Bank of Ethiopia and IMF in order to define external variables.

1.7. Limitation of the Study

The study is more of financial related variables were considered that of non-financial measure variables may have a little influence and might need a further investigation. Financial reports within twelve years may be affected by different non modeled variables such customer service quality of banks, inflation rate, etc in the state of the economy. This might fail to measure the actual effects of the internal and external determinants on non-interest income of the bank.

1.8. Significance of the Study

The study have significance to show the degree of the bank-specific, and macroeconomic determinants to what extent it affects the level of non-interest income of the commercial banks, by identifying and showing the main determinants of non-interest income and to suggest policy implications after critical examination of the non-interest income determinants of the private commercial banking industry of Ethiopia. To the end, particularly the study has importance for the following body.

- It enables policy makers and management body of the commercial banks to adjust the bank management system and mechanisms.
- It will provide a road map for managers and the shareholders to evaluate their bank performance in term of non-interest income with respect to the internal and external determinants.
- The study also will be an initiation for those who are interested to conduct detailed and comprehensive study regarding the determinant of non-interest income of commercial banks.

1.9. Organization of the Paper

This paper consists of five chapters with different sections and sub-sections. Chapter one presents the introduction for the main part of the paper. Chapter Two reviews the most significant theoretical and empirical studies including Ethiopian banking business environment. Chapter three focuses to presents methodology of the study. Chapter four also provide the interpretation and analysis of econometric model outcomes. Chapter five presents conclusion and recommendation with and further research direction.

CHAPTER TWO

2. LITERATURES REVIEW

2.1. INTRODUCTION

This chapter presents the literature review. It starts with an overview of the concept of non-interest income, and then focuses on the variables that have been found to influence non-interest income with emphasis on those that are relevant to private commercial banks in Ethiopia.

2.1.1 Non-interest income

Non-interest income refers banks income mainly from service and penalty charges and, to a much less extent, from asset sales and property leasing. Unlike interest income, Stiroh (2002) classified noninterest income into a heterogeneous category that comprises many different activities, so it is broken down into four primary components – fiduciary income, service charges, trading revenue, and fees and other income. Fiduciary income is revenue related to the bank‘s fiduciary operations, e.g., administering investments for others. Service charges include revenue directly related to deposit accounts like ATM or check usage fees. Trading revenue is primarily income from trading cash instruments, off-balance contracts, and mark-to-market changes in the carrying value of assets and liabilities. Fees and other income include all other fees, e.g., loan commitment fees, safe deposit boxes, commissions, and land rental fees.

Economic forces have led to financial innovations that have increased competition in financial markets. As such, the traditional business of banking is on the decline globally. Greater competition has diminished the cost advantage banks have had in acquiring funds and has undercut their position in loan markets. This scenario has encouraged banks to diversify into new activities that bring higher return. (Basil, Senyo and Albert, 2014).

2.2 Features of Non-Interest Income

Diversification is the name given to the growth strategy where a business introduces new products in markets. This is an inherently more risk strategy because the business is moving into

markets in which it has little or no experience Often there is a credibility focus in the communication to explain why the company enters new markets with new products Levine and Leaven (2007). Several reasons as to why the bank invest in noninterest income these include.

2.2.1 Technology and Automation

Innovation in banking industry relates to new ways of doing financial business including online banking (E-Banking), phone banking (M-Banking), Agency Banking. Non-interest income is net income derived from fee-based banking services, such as E-Banking and Agency banking (Stiroh, 2004).

Ngigi, (2012) sought to assess the effect of financial innovation on the financial performance of commercial banks as the key players in the banking sector over a time span of 4 years. The study noted that the financial industry in Kenya has underwent a wide range of transformation all aimed at improving financial performance of many financial institutions (Ratan, 2008).Yet in spite of that, the study holds that the relationship between financial innovation and financial performance is not always positive correlated because there are cases of negative correlation between the two being reported.

Banking industry deregulation removed a whole host of restrictions that had stunted the evolution of the banking industry, constrained the efficiency of financial product markets, and extended the lives of thousands of poorly run and/or suboptimal-sized commercial banks. Advances in information and communications technology (e.g., the Internet, ATMs), new intermediation technologies and the introduction and expansion of financial instruments and markets (Stiroh, 2004).

2.2.2 Agency Banking

Agency banking refer to bank partnerships with non-banks, typically retail commercial outlets, ranging from lottery kiosks, pharmacies, post offices, construction goods stores, and so forth, to provide distribution outlets for financial services Kamau (2012). Agency banks offer normal banking services such as cash deposits and withdrawals, disbursement and repayment of loans, salary payments, pension payouts; transfer of funds and the issuing of mini bank statements, all through shared infrastructures conclude Kamau (2012). In addition, the agency network allows banks to reach new customers, who can open new accounts, perform credit and debit card applications and cheque book requests (Timothy et al., 2006).

2.2.3. Less Subject to Business Cycle

Interest income is known to be affected by economic condition prevailing in a country example the financial crisis lead to downward trend in interest rate hence leading to decreased interest income. Whereas non-interest income is not highly affected by economic recession according to Thygerson (1993), he argued that noninterest income is less susceptible to economic recession which may lead to loan delinquencies and losses, its then to offset loss brought by interest income (Kerstein and Kozberg, 2013).

2.3. Types of non-interest income

According to Huang and Chen (2006), non-interest income can be classified into the following manners. fiduciary activities income; trading revenue; fees and commissions from securities brokerage; investment banking, advisory, and underwriting fees and commission; fees and commissions from annuity sales; underwriting income from insurance and reinsurance activities; income from other insurance activities; venture capital revenue; net servicing fees; net

securitization income; net gains (losses) on the sales of loans, OREO, and other assets (excluding securities); and other non-interest income. Some of them are described as follows.

Fiduciary Activities Income; is an income derived from services rendered by trust departments of banking subsidiaries or a subsidiary acting in any fiduciary capacity. Trading Revenue; is the net gain or loss recognized from trading cash instruments and derivative contracts (including commodity contracts). It results from revaluation adjustments (as a result of periodic marking to market) to the carrying value of trading assets and liabilities, as well as interest rate, foreign exchange, equity derivative, and commodity and other contracts. Investment Banking Fees and Commissions; are the sum of fees and commissions from securities brokerage; investment banking, advisory, and underwriting fees and commissions; and fees and commissions from annuity sales. The other Insurance Activities Revenue; is the amount of insurance and reinsurance underwriting income plus other insurance and reinsurance activities income (Stiroh, 2004).

2.4. Factors Affecting Non-Interest Income

Technological factors

Technological development has facilitated the rapid development of new financial products. While a large proportion of innovations could not have been possible without developments achieved in the theory of finance, it is mostly technological progress that has made the wide use of these innovations possible. The independent role of financial innovations is a debated issue, whereby some commentators would see them as a major factor in themselves in generating financial change and some as byproducts or natural consequences of technological development. In the late 1970s noninterest income represented 20% of bank operating revenues. By 2000 this ratio doubled to approximately 40%. Banks have benefited from advances in information and communications technology that created new opportunities for fee income. Where banks previously collected deposit account fees primarily for safe-keeping and checking services, they now also collect fees for internet banking and ATM use. There have also been innovations in lending practices where banks can provide noninterest activities ranging from loan securitization to credit scoring, (Garrett, 2011).

While banks are still interested in developing their traditional business of intermediating in the market between depositors and borrowers, they also try to widen their other sources of income so that they are not left out in the game profitability. Non-interest income is a good source of profitability, since it does not require the presence of underlying assets. In that case no extra resources in the form of liabilities are needed in order to fund that what procedures non-interest income. In this case the banks are able to achieve higher profitability and efficiency ratios, Karlos (2009).According to the author, two most important factors are playing the major role to increase the non-interest income, i.e. technological progress and banking deregulation. In short technological progress has allowed the banks to develop new products and services for which they can charge fee income.

Deregulation

Deregulation has widened the field of services that the banks can now provide, so they can get extra fee income from there also. A well-managed bank should not neglect core banking activities. It will be also able to render fee generating service to a wide range of its clientele, so it will be able to produce bigger amounts of income. Karlos (2009) also explain about another source of non-interest income, namely other operating income. This does not contribute dearly to total income because it is mostly consisted from one off items that are not part of a bank‘s day to day business. Such income would be gains from sales of fixed assets or gains from sale of subsidiaries and other extraordinary items like back dated remuneration from insurance companies, or possible income tax returns. He also added another source of non-interest income in his study, i.e. securitization. It works as follows; a banking group categorizes loans per classes (i.e. mortgage loans, small business loans etc.) and sells them to another company build for that exact cause. The bank continues to service these loans, and for their, it receives commissions and fees from the companies. These commissions are calculated as a percentage on the volume of the loans sold.

Size of banks

The relationship between the size of banks and non-interest income should indicate to what extent larger banks have more possibilities than smaller ones to generate and sustain non-interest income and to translate it into higher levels of profits and increased value for shareholders, (European Central Bank) (2000).

Size is perhaps one of the most important bank characteristics when discussing noninterest income. It is widely held within the literature that noninterest income activities are driven by the larger institutions. Rogers and Sinkey (1999) observe that some institutions are incapable of producing certain categories of noninterest income, such as trading, because of the economies of scale that are required for these activities. De Young and Rice (2004) suggests insurance and securitization activities also enjoy economies of scale. Intuitively, having a larger client base means there are more opportunities to sell insurance products, which are relatively costless to sell if a network is already in place to distribute them.

Loans and Advances

It is needless to emphasize that extending loans is one of the most important role of banks. The interest raised from the loans is the most important source of the banks income. However, inherent with bank‘s loan is liquidity risk as well as credit risk. In this respect, in extending loans, banks should properly manage such risks. In general, it is expected that the more loans, the more interest income, and the more profitable the bank, (Sastrosuwito and Suzuki, 2011).

Income diversification theory

Literature on diversification in the banking industry suggests that there exists several type of diversification: geographical, source of income, product/services, and economic sectors (Tabak et al., 2011; Pennathur et al., 2012). These studies are particularly concerned with discussion as relates to income diversification into non-interest income sources. Banks' traditional income comes from interest charged on loans. However, this income source raises a number of issues and in developed countries such as the USA; it is widely believed that the traditional banking activities are on the decline (Smith et al., 2003). As banks diversify income to fee-based activities, finance theory suggests that this leads to increased profitability and stabilization of income.

The HHI measures the shift into non-interest income or fee based income generating activities. As HHI rises the bank becomes more concentrated and focused on one source of income and less diversified. Hence, well diversified banks are reflected by a small HHI index; the smaller the index, the more diversified the bank, (Kiweu,2012).

Traditional banking activities

Rogers (1998) looks at noninterest income and efficiency of US commercial banks. By estimating cost, revenue, and profit frontiers the author determines where the gains or losses in efficiency are derived. The results show that banks with noninterest income are more efficient than those without. In addition, the gains are derived primarily from cost efficiency. The authors conclude that any study examining bank efficiency must consider noninterest activities. Rogers and Sinkey (1999) examine some fundamental bank characteristics and how they are related to fee income. Their results show that banks that engage in noninterest activities are larger, have smaller core deposits, and have smaller net interest margins. The authors argue that larger banks, which face more competition, are less profitable from intermediation activities, and

diversification into noninterest income can offset these losses. They also find that fee income is related to a reduction in various accounting risk measures. DeYoung and Roland (2001) found that as banks shift away from traditional intermediation activities and into fee-based services, the volatility of earnings increases. More specifically, fee income appears to increase revenue volatility and the degree of total leverage. However, the authors also find an increase in profitability associated with fee income that partially compensates banks for the increase in risk. Banks have always earned noninterest income from their depositors, charging fees on a variety of transaction services (for example, checking and money orders), safe-keeping services (for example, insured deposit accounts, safety deposit boxes), and cash management services (for example, lock box or payroll processing). Other traditional lines of business for which banks have always earned fee income include trust services provided to a wealthy retail clientele and providing letters of credit (as opposed to immediate dispersal of loan funds) to corporate clients, (De Young and Rice, 2004).

2.5. Empirical studies

From several studies regarding interest and non-interest income the following empirical studies are presented,

According to Roland and Maxwell (2005) there are some factors that could have led to growth in non-interest income in the banking industry worldwide. These are deregulation, globalization and rapid technological advances in information flows, communications infrastructure and financial markets. Banking industry deregulation fosters competition between banks, non-banks and financial markets by removing restrictions that stunt the evolution of the banking system constrain the efficiency of the financial product markets and extend the lives of poorly run and /or sub-optimal-sized commercial banks.

Advances in information and communications technology (for example, the Internet and Automatic Teller Machines (ATMs)), new intermediation technologies for processes like loan securitization and credit scoring, and the introduction and expansion of financial instruments and markets (high yield bonds, commercial paper, financial derivatives) all impacted on the levels and types of non-interest income at commercial banks. In essence, these changes meant that banks could extract fee income from customers who were willing to pay for use of ATMs and /or the Internet rather than undertake business at traditional branches.

According to DeYoung (2004), deregulation and technological change have transformed the U.S. banking industry into two primary size-based groups. The first group consists of large banking institutions, characterized by the use of hard information, impersonal relationships, low unit costs, and standardized loans, while the second group is made up of small banks, characterized by the use of soft information, relationship development, higher unit costs, and non-standardized loans.

Improvements in information technology, which have made it easier for households, corporations, and financial institutions to evaluate the quality of securities, have made it easier for business firms to borrow directly from the public by issuing securities. In particular, instead of going to banks to finance short-term credit needs, many business customers now borrow through the commercial paper market. The ability to securitize assets has made nonbank

financial institutions even more formidable competitors for banks. Advances in information and data processing technology have enabled nonbank competitors to originate loans, transform these into marketable securities, and sell them to obtain more funding with which to make more loans. Computer technology has eroded the competitive advantage of banks by lowering transactions costs and enabling nonbank financial institutions to evaluate credit risk efficiently through the use of statistical methods. When credit risk can be evaluated using statistical techniques, as in the case of consumer and mortgage lending, banks no longer have an advantage in making loans, (Edwards and Mishkin, 1995).

According to De Young and Rice (2004), the composition of noninterest income also differs across banking companies of different sizes. Large banking companies generate disproportionately more noninterest income from securitizing and servicing mortgage and credit card loans, because the automated production processes used to produce these services exhibit substantial scale economies. Similarly, large banking companies are better able to employ the concentrations of financial experts and develop the institutional information databases necessary for the production of investment banking, insurance underwriting, and private banking (fiduciary) services. However, there are other areas in which smaller banking companies generate a higher percentage of noninterest income than larger banking companies. Because small banking companies rely more on core deposit funding (such as household and small business checking accounts) than do larger banks, deposit service charges comprise a large part of their fee income base. And fee income from the sale of insurance products shows no size bias possibly because small banking companies have been successful at cross-selling insurance products to their existing household and small business clients.

De Young and Rice (2004) found that relationship banking tends to generate increases in noninterest income and that some technological advances, for example cashless transactions, contribute to increased earnings from non-interest income. At the same time, however, technological advances such as loan securitization contribute to reduce noninterest income flows at banks.6 Findings also indicate that large banks generate relatively more noninterest income, while well-managed banks rely less heavily on earnings from non-intermediation. Furthermore, the results suggest that marginal increases in noninterest income have been associated with

higher profits, more variable profits and, on net, a worsening of the risk-return tradeoff for the average commercial bank during our sample period. Overall, the study concluded that intermediation-based products and services are likely to remain the central business activities at the average U.S. commercial bank.

Evidence based on German banking sector data for the period 1995 to 2007 (Busch, 2009) confirms previous discussed findings that bank returns are positively affected by higher fee income activities. The findings also show that increases in non-interest income also positively impact the asset base of banks. Additionally, a strong engagement in fee generating activities goes along with higher risk. Additionally, an assessment of the impact of fee-based services on interest margin showed that institutions with a strong focus on fee business charges lower interest margins when credit risk is controlled.

Mnasri and Abaoub (2010) provided evidence that banks which diversified across both interest and non-interest income generating activities have higher levels of raw share returns than those focusing their activities. However, in contrast to previous findings discussed, focusing on non-interest income generating activities decreases market profitability of banks. Furthermore, banks that are functionally diversified also experience higher levels of systematic risk while the effect on the idiosyncratic component is non-significant.

The primary source of a bank‘s earnings is derived from intermediation activities. This is the typical lending relationship where a bank accepts funds from the public, compensates them with a rate on their deposits, and reinvests the money for a higher return. This is known as interest income. Noninterest income, or fee income, refers to the earnings of the bank that are not directly related to interest activities. Examples of noninterest income include service charges on deposit accounts, fiduciary income, and servicing fees. According to De Young& Rice (2004) the former are considered traditional noninterest income components because banks have earned revenues from these sources for many years.

Non-traditional noninterest activities, as the term implies, includes fee income that banks have only recently begun to collect. Venture capital, securitization, and trading are some of the non-

traditional noninterest activities that the banking industry has explored in recent years. Two of the more important non-traditional non-interest income components for banks today are insurance and investment banking. In terms of the diversification; banks should not focus highly on an income source. Although interest incomes from traditional activities, such as making different loans, are the major generator of revenues, diversifying income sources from traditional activities to non-traditional activities might be a good strategy for banks. Yet, banks should implement this strategy with caution. Placing emphasis on nontraditional activities and giving up traditional activities might not be a sound strategy, Huang and Chen (2006). De Young and Rice (2004) indicated some non-traditional activities of banks which were related to traditional activities. Banks cannot improve profitability by giving up traditional activities and increasing non-traditional activities.

Banks earn a profit from the financial flows fundamental to the intermediation process (e.g., interest paid on deposits, interest received from loans and securities, and the resulting net interest margins) but the nature of these flows exposes the bank to risk. Some of these risks are associated solely or primarily with items on just one side of the balance sheet and are independent of items on the other side of the balance sheet, e.g., credit risk is associated primarily with loans, while market risk is associated primarily with investments in long-term fixed income securities. This independence suggests that a substantial amount of the risk inherent in banking is unrelated to the intermediation process. In contrast, interest rate risk is associated with the interaction of items on the right-hand side (e.g., the maturities of various loans and securities) and left-hand side (e.g., the maturities of various deposit accounts) of a bank‘s balance sheet, and as such is a direct outgrowth of the intermediation process. Thus, the value of a traditional commercial banking company will depend systematically on its financing decisions, even in a world without taxes or other frictions absent from the simplest (De Young and Yom, 2008).

The degree to which commercial banking companies rely on the traditional intermediation business model has declined over time. Two decades of innovations in information processing, communications technologies, and financial markets (e.g., credit bureaus, computers, the Internet, adjustable-rate loans, credit scoring, asset securitization, financial derivatives), plus a

wave of industry deregulation that abolished barriers to diversification across geographic and product market boundaries, have allowed banks to (a) expand into non-intermediation activities, (b) alter the nature of their intermediation processes, and (c) adopt new methods of managing the risks inherent in intermediation. Collectively, these changes have reduced the degree of association between assets and liabilities that has traditionally been necessary for banks to operate profitably. Today banks generate an increased portion of their income from non-intermediation and/or non-interest activities; (De Young and Yom, 2008).

Non-interest income is other alternative means of income other than earning from loans. It includes fees earned from offering unit trust services, service charge on deposit account, standard fees, and charges for other bank services. With increasing globalization and financial liberalization, the bank business has been undergoing a gradual transformation away from the traditional business of financial intermediation and towards provision of other financial services including mutual fund, insurance etc. Thus, non-interest income would represent a key source of bank revenue at present and in the future Rasiah (2010). By more aggressively selling services other than loans such as brokerage, insurance and trust services, bankers have found a promising channel for boosting the income statement by diversifying their income sources, and for insulating their banks more adequately from fluctuations in interest rates and loan default risk. Furthermore, higher diversification regarding banks‘income sources towards derivative instruments and other fee-based activities shows a positive effect on banks profitability on the Korean banking sector (Sufian, 2011).

Karols (2009) tried to examine links between bank non-interest, business strategies, technological change, and financial performance between 1988 and 2008. The results indicate that bank size plays a clear role in generating non-interest income, while any attention towards core banking activities contribute more to interest income. Well-managed banks are present in non-interest income activities, but their transaction is slow and pre planned. Non-interest income is co-existing is interest income and leads to increased profitability ratios, but should be considered a secondary source of income, supplementary of core-banking activities.

Sherene and Bailey-Tapper (2010) studied on Non-interest Income, Financial Performance & the Macro-economy: Evidence on Jamaican Panel Data in 2010 by applying a SUR model to Jamaican panel data for the period March 1999 to September 2010. The study also investigates the determinants of non-interest income in a context of the increasing reliance by banking institutions on revenue generation from non-interest income activities. ATM technology, personal lending and loan quality are among the main microeconomic factors driving the performance in non-interest income in the commercial banking sector. Regarding the macroeconomic environment, interest rate and foreign exchange rate volatility are the key factors which explain the performance in non-interest income. Against this background, stronger performance in non-interest income not only leads to increased profitability but also increased variability in performance. Additionally, results for large banks show that lower earnings on investments lead to increases in service charges from loans and may reflect more aggressive loans expansion by these increase institutions to increase fee income.

Craigwell and Maxwell (2005) discussed the trends in non-interest income at commercial banks in the Caribbean between 1985 and 2001, as well as investigate the determinants of non-interest income and its impact on commercial bank financial performance in Barbados. The paper reveals that the incidence of non-interest income in Barbados declined over the period, contrary to the findings in Jamaica and Trinidad and Tobago as well as the wider developed world. A review of the literature and a panel data regression model confirm that the result for Barbados may be attributed to the absence of some of the factors that were pinnacle to the generation of non-interest income in developed countries, such as deregulation and technological change, especially for the development of loan securitization and credit scoring. The empirical evidence supports bank characteristics and the ATM technology as the most influential factors shaping the trend of non-interest income in the banking industry in Barbados and suggests that non-interest income is positively related to both bank profitability and earnings volatility.

Zhou (2009) studied on Stability in Bank Income through Fee-based Activities and he attempt to study the trends in non-interest income which is a vital source of stability in bank income. The non-interest income activities of banks are also on the increase in recent years. This has helped to stabilize the total income of banks. Increase in non-interest income as a source of funds for banks

would also greatly be helpful for maintaining the financial soundness of banks. Interest is by far the most important cost as also income of banks. Now a day due to the introduction e delivery channels by various banks the source of other income has changed. Some new private sector banks and foreign banks are earring non interest from e delivery channels. The gap between public and private sectors banks is increasing.

Stiroh (2004) examines the diversification benefits of non-interest income on banks' profitability. Empirical evidence using data from the U.S. banking industry spanning the period 1978-2000, suggests that it is unclear whether noninterest income provides significant diversification benefits given the high volatility of trading income. On the other hand, he notes that for a third of the banks in the sample examined a negative correlation between net interest income and noninterest income growth is found i.e. diversification benefits are present for these banks. In addition, there is a caveat for these results, namely that the specific period is a transitory phase in which banks started relying to a significant extent on non-interest income and, therefore, not reaping the full benefits of this expansion of income sources. In fact, Nguyen (2012) investigates a large sample of banks across 28 countries, for the period 1997-2004, and finds that the relation between the two components of income has evolved over time, from a phase of subsidization between interest and non-interest income, throughout the period 1997–2002, to a phase of complementarities, throughout the period 2003-2004. Finally, Baele et al. (2007) focus on European banks and provide empirical evidence of market perceptions of higher profitability for more diversified banks. Therefore, the overall evidence is rather inconclusive as regards the existence of diversification benefits from non-interest income.

Evidence based on German banking sector data for the period 1995 to 2007 (Busch, 2009) confirms previous discussed findings that bank returns are positively affected by higher fee income activities. The findings also show that increases in non-interest income also positively impact the asset base of banks. Additionally, a strong engagement in fee generating activities goes along with higher risk. Additionally, an assessment of the impact of fee-based services on interest margin showed that institutions with a strong focus on fee business charges lower interest margins when credit risk is controlled.

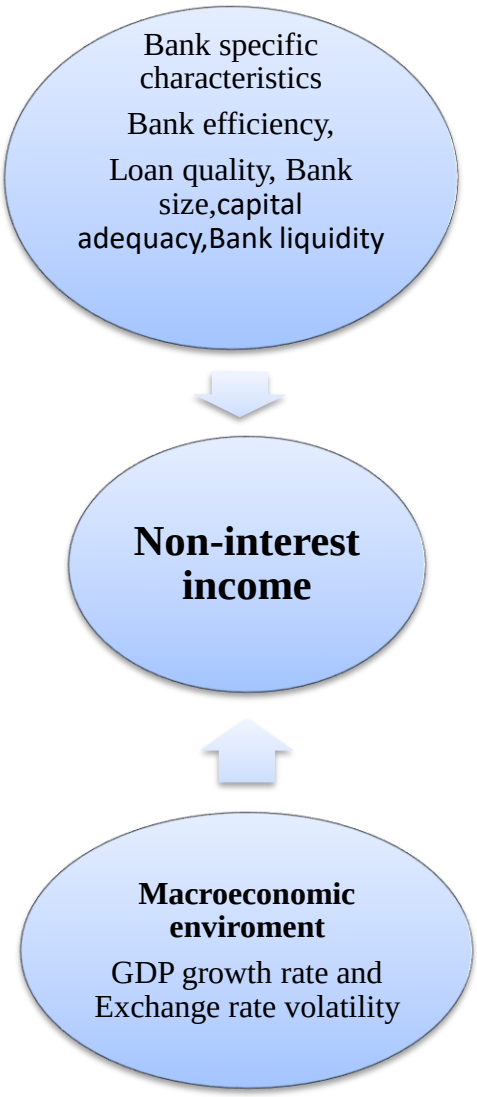
According to De Young and Rice (2003), there are numerous strong statistical associations between non-interest income and bank characteristics, market conditions, technological progress, and bank performance. For example, their results suggest that well managed banks rely relatively less on noninterest income; that banks which stress customer relationships and service quality tend to generate more noninterest income; and that the development of new financial technologies such as cashless transactions and mutual funds are associated with higher levels of noninterest income in the banking system. They also find that increases in noninterest income tend to be associated with higher profitability, higher variation in profits, and a worsened risk-return tradeoff for the average commercial bank.

Estifanos (2014), Result revealed that relative performance and loan quality from bank specific factors and exchange rate volatility from macro-economic factors are the most influent determinants of non-interest income in Ethiopian Commercial Banks, Bank efficiency is positive and it is statistically highly significant determinants of non-interest income This indicates that well managed banks generate higher amounts of non-interest income per birr of assets. Efficient banks would have higher non-interest income by diversifying their source of income in to different aspects. Concerning the loan quality, the research implies that the relation between allowance for loan and non-interest income is positive. This indicated that generally the more risky the banking sector‘s portfolio, the greater the non-interest income. It can be conclude that Ethiopian commercial banks get more non-interest income from operations which have higher risk. Increasing in non-interest income is associated with riskiness of the banks operation. As banks risk rises, banks non-interest income also increases. Finally, concerning with macro-economic factor, exchange rate volatility is directly related with non-interest income by having significantly affect the level of non-interest income of banks.

2.6. Conceptual Framework

This conceptual framework shows the relationship of non-interest income with bank specific characteristic and macro-economic environment. This relationship described in the following diagram.

Figure 1: Relationship between Non-interest income and its determinants



CHAPTER THREE

3. Research Methodology

From the literature review the study discussed about the theoretical and empirical facts of the selected dependent and independent variables. Based on the literature insight this chapter described the methodology that the study was use in the empirical analysis to test the different relations.

3.1. Research design

To achieve the objective of this study, explanatory research design was adopted. Besides, this study used quantitative research approach to examine a stated objective. Because quantitative research is the systematic and scientific investigation of quantitative properties and phenomena and their relationships (Abiy, 2009).

Under this study, panel data from the year 2005- 2016 was used. This is because panel data has the advantage of giving more informative data as it consists of both the cross sectional information, which captures individual variability, and the time series information, that captures dynamic adjustment.

3.2. Source of Data and Method of Collection

The study used secondary data and the data was collect from internal and external sources. The internal sources are annual financial reports of sampled private Ethiopian commercial banks under the study to manipulate such variables NIIRATIO, RELROA, LNASSET, LOANQUALITY, CAR, LIQ and external data sources of this study are National Bank of Ethiopia (NBE) for exchange rate, International Monetary Fund (IMF) for real GDP growth rate was collected from the above three bodies. The study was used time series data and data was collected from 2005 to 2016.

3.3 Target Population.

The target population in this study is all 16 private commercial banks in Ethiopia licensed by National Bank of Ethiopia to operate up to the fiscal year 2017/18.

3.4. Sample and Sampling Technique

The study were include all commercial banks which were operational within Ethiopia in the study period are included. The data set consists of seven banks which are owned by the private sector. These are Awash Bank (AB), Dashen Bank (DB), Bank of Abyssinia (BOA), United Bank (UB), Nib International Bank (NIB) and Wegagen Bank (WB), cooperative bank of Oromia (CBO) are the sample of this study. There are another nine private commercial banks which are not included in the study because they fail to be fulfilling the study time period. This study used panel data for the period of twelve years (2005-2016). Purposeful or criteria based non-probability sampling technique was used for the selection of sample.

3.5. Method of Data Analysis

The study uses a descriptive financial analysis with the help of different financial ratio and statistical description including standard deviation, average, minimum and maximum (descriptive statistics) and as well as applied an econometric multiple regression model to test the significance of variables on non-interest income of private Ethiopian Commercial Banks. The Non-interest income to asset (NIIRATIO) is assumed as dependent variable while Bank efficiency, Relative performance, bank size, Loan quality, Capital adequacy, Bank liquidity, Real GDP growth and Exchange rate volatility are as independent variable. The analysis of quantitative data was carried out by using SPSS version 21.

3.6. Model Specification

The study were used OLS multiple linear regression to establish relationship between variables. Modeling is based on panel data techniques. And the study were used a multiple regression technique to analyze the effect of bank specific, technology and macroeconomic determinants of Non-interest income of Ethiopian commercial banks. The general model to be estimated is the following linear forms which, is adopted from DeYoung and Rice (2003). Accordingly, the researcher has left out some of the factors seen by the earlier researchers for they are not applicable in our country. One of the excluded variables is credit card banking. The other variable is Real estate loan, since most banks did not render such service. And according Estifanos (2014) variables like Income diversification, Commercial and Industrial loan, and Consumer loan have insignificant effect on non-interest income of Ethiopian commercial banks so, these variables are not included.

$$NIIRATIO_{t,i} = \beta_0 + \beta_1 * RELROA_{t,i} + \beta_2 * LNASSETS_{t,i} + \beta_3 * LOANQUALITY_{t,i} + \beta_4 * CAR_{t,i} + \beta_5 * LIQ_{t,i} + \beta_6 * EXVOL_{t,i} + \beta_7 * GDPtigrowth + \varepsilon_{t,i}$$

Where;

NIIRATIO is non-interest income ratio with total asset times hundred

RELROA is relative performance

LNASSET- bank size

LOANQUALITY - Loan quality

CAR-Capital adequacy

LIQ-Bank liquidity

GDP- real GDP growth

EXVOL- exchange rate volatility

$\varepsilon_{t,i}$- Error term

3.7. Description of Variables

3.7.1. Dependent variable

The dependent variable in the equation captures total non-interest income total asset and is defined NIIRATIOt,i where the subscripts t and *i* index banks and years, respectively. Non-interest income includes all incomes earned by the bank other than interest income and the dependent variable was calculated as under:

$$\text{NIIRATIO} = \frac{\text{Total non-interest income}}{\text{Total Asset}} \times 100$$

3.7.2. Independent variables

- ✓ **Bank efficiency (RELROA)**De Young and Rice (2004) and Sherene (2010), used to measure bank relative performance and measured by each bank‘s relative financial performance, calculate as the bank return on assets minus the average return on assets of the other banks. It expected to have a direct relation with non-interest income.

  Bank efficiency = Return on asset – Average return on asset

- ✓ **Bank size (LNASSETS)** De Young and Rice (2004) was capture by the log of assets. Although some literatures generally suggest that it is large banks that tend to generate more non-interest income, there is no priori reason why small banks cannot use non-interest income to boost their revenue streams. It expected to have a direct relation with non-interest income.

- ✓ **Loan quality (LOANQUALITY)** De Young and Rice (2004) identify to measure the effect of riskiness of the loan portfolio which is calculated by provision for doubtful loans and advances-to-assets ratio. It expected to have indirect relation with non-interest income.

  $$\text{Loan quality} = \frac{\text{Provision for doubtful loans and advances}}{\text{Total Asset}} \times 100$$

- ✓ **Capital adequacy (CAR)** This variable is measured by the ratio of total equity to total assets. It answers the question as to how adequate the owners' investment in a bank is to cover its liabilities. In theory an excessively high capital adequacy ratio (CAR) could indicate that a bank is operating over cautiously and ignoring potentially profitable investment opportunities which Basil, Senyo and Albert (2014). It expected to have a direct relation with non-interest income.

$$\text{Capital adequacy} = \frac{\text{Total equity}}{\text{Total Asset}} \times 100$$

- ✓ **Bank liquidity (LIQ)** This variable will be represented by the ratio of cash and short-term investments to total assets (TA). Basil, Senyo and Albert (2014). It expected to have a direct relation with non-interest income.

$$\textbf{Bank liquidity} = \frac{\text{Liquid asset}}{\text{Total Asset}} \times 100$$

Macro-economic factors

Two measures have been included as proxies of the macroeconomic environment, which include the growth in domestic GDP (GDP gwth) and exchange rate volatility (EXRVOL).

- ✓ **GDP growth** is measured by taking real GDP growth rate. It expected to have a direct relation with non-interest income.
- ✓ **Exchange Rate Volatility (EXRVOL)** will be calculated.by taking the yearly percentage change of exchange rate between ETB and USD. It expected to have a direct relation with non-interest income.

CHAPTER FOUR

4. DATA ANALYSIS AND PRESENTATION

4.1. Descriptive statistics

This section presents the descriptive statistics of dependent and independent variables used in the study for the sample banks. The dependent variables used in the study were NIIRATIO while the independent variables were Bank efficiency, Traditional Banking activities, bank size, loan quality, Capital adequacy, Bank liquidity, real GDP growth and Exchange rate volatility. Thus, the total observations for each dependent and explanatory variable were 84 (panel data of 7 private commercial banks for 12 years). The table 4.1 demonstrates the mean, standard deviation, maximum and minimum values for the dependent and independent variables for sample banks over the year 2005 to 2016.

Table 4.1 Summary of Descriptive Statistics

Variables		Mean	St.devation	Maximum	Minimum
Dependent Variable	NIIRATIO	3.29	1.24	6.29	0
Independent Variables	RELROA	0	1.26	2.66	-5.29
	LNASSET	22.49	1.04	24.16	18.67
	LOANQUALITY	1.53	1.04	5.87	0
	CAR	14.48	9.91	87.37	7.10
	LIQ	34.76	13.46	95.03	13.56
	GDP	10.36	1.08	11.8	8
	EXRVOL	8.28	7.64	24.95	0.35

Source: computed from the financial statement of private commercial banks in Ethiopia, NBE and IMF report.

4.1.1 Dependent Variable

The NIIRATIO which is dependent variable measured by the non-interest income divided by the total asset has a mean value of 3.29 percent. This implies that, the sample banks on average earned 3.29 percent non-interest income of the total asset. Since NIIRATIO Indicates how effectively a bank manages its assets to non-interest income. It indicates non-income earned on each unit of assets. During the study period the Sample the maximum value of NIIRATIO was 6.29 and minimum value of 0. That means, the highest non-interest earned by sampled bank is 6.29 cents of income for a single birr invested in the assets of the firm. On the other hand, the least non-interest income earned by sampled bank is 0 for each birr investment in the assets of the firm and this loss may be due to lack of focus on non-income. Thus, this causes poor performance on non-interest income.

4.1.2 Independent Variable

Regarding the independent variables, Bank efficiency which was measure bank relative performance and calculates as the bank return on assets minus the average return on assets of sampled banks has a mean value of 0 with a maximum and minimum value of 2.66 and- 5.29 percent respectively. In addition, the standard deviation of the bank efficiency was 1.26 present. This implies that in the study period the sample private commercial banks have a small variation in their efficiency.

On the other hand; the Bank size which was measured by the natural logarithm of total asset has a mean value of 22.49 with a maximum and minimum value of 24 and 18.67 percent

respectively. In addition, the standard deviation of the bank size was 1.04 percent. This implies that in the study period the sample commercial banks have a small variation in their total asset.

Another variables used in the study was Loan quality which was measured by provision for doubtful loans and advances divided by total asset. The Loan quality has a mean value of 1.53 percent. This result shows that on average the sample commercial banks kept under a provision for doubtful loans and advances of 1.53 percent of the total asset. The maximum and minimum values were 0 and 5.87 percent respectively with standard deviation 1.04 percent which is small variation among sampled banks. The other independent variable was Capital adequacy which was measured by total equity divided by total assets has mean value 14.48. This implies on average of sampled banks has only 14.48 percent of total asset share. The maximum and minimum value was 87.10 and 7.10 with the standard deviation 9.91. This shows high variation of capital adequacy among sampled banks. The other variable is bank liquidity which was measured by cash and short-term investments divided total assets mean value was 34.76. This implies 34.76 percent of sampled banks has liquid asset. The maximum and minimum value was 95.03 and 13.56 with standard deviation 13.46 percent which is very high.

Regarding the external variables, real GDP growth has a mean value of 10.36 percent with maximum and minimum values of 11.80 and 8 percent respectively. This shows Ethiopia has recorded on average 10.36 real GDP growth rate which high during the study time period. On the other standard deviation was 1.08 percent. This implies variation of real GDP growth in Ethiopia is very small and stale. The other important external variables was Exchange Rate Volatility which was measured by yearly percentage change of exchange rate between Ethiopian birr and

USD yearly percentage change of exchange rate between Ethiopian birr and USD mean value was 8.28 percent. This indicates on average ETB was annually devalued by 8.28 percent relative to USD. The maximum and minimum value was 24.95 and 0.35 percent with standard deviation 7.64 which is very high.

4.2. Results of OLS Tests

To maintain data validity and robustness of the regressed result of the research under the classical linear regression model (CLRM) basic assumptions required to be satisfied Brooks (2008). So, before testing significance of the slopes and analyzing the regressed result, multicollinearity, autocorrelation, homoscedasticity, and normality tests are made.

4.2.1. Test for Multicollinearity

This assumption of multicollinearity is that explanatory variables are not correlated with one another over time or cross sectional - they are said to be orthogonal to one another. Thus, Multicollinearity refers to the situation in which the independent variables are highly correlated. When independent variables are multi collinear, there is overlap or sharing of predictive power. This may lead to the paradoxical effect, whereby the regression model fits the data well, but none of the explanatory variables (individually) has a significant impact in predicting the dependent variable Gujarati (2004). This is because when the predictor variables are highly correlated with one another, they share essentially the same information. Thus, together, they may explain a great deal of the dependent variable, but may not individually contribute significantly to the model. Thus, the impact of multicollinearity is to reduce any individual explanatory variable's predictive power by the extent to which it is associated with the other explanatory variables. That

is, none of the predictor variables may contribute uniquely and significantly to the prediction model after the other independent variables is included. Among several ways of multicollinearity Variance Inflation Factor (VIF) are used for this purpose.

High Multicollinearity between explanatory variables may result in the wrong signs, or implausible magnitudes, in the estimated model coefficients, and the bias of the standard errors of the coefficients. To avoid this problem, the Variance Inflation Factor (VIF) test was used. The results of this test are presented in next Table 4.2 The mean VIF was 2.34, which is much lower than the threshold of 10. The VIF for individual variables was also very low. This indicates that the explanatory variables included in the model were not substantially correlated with each other.

Table 4.2 Variance Inflation Factor (VIF) of the explanatory variables

Variable	Collinearity Statistics	
	Tolerance	VIF
RELROA	.648	1.543
LA	.285	3.511
LOANQUALITY	.716	1.396
CAR	.392	2.554
LIQ	.305	3.279
EXRVOL	.401	2.495
GDP	.635	1.575
Mean		2.336

Source: SPSS OUTPUT

4.2.2. Tests for autocorrelation, normality and linearity

The autocorrelation assumption is made of the CLRM's disturbance terms is that the covariance between the error terms over time is zero; it 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 serially correlated. Usually, Durbin-Watson (DW) test is used for first order autocorrelation. It tests a relationship between an error term and its immediately previous value. Shows the result is 1.369 which falls in the acceptable range. Therefore, the analysis satisfies the assumption of independent of errors.

Table 4.3 Regression results of empirical

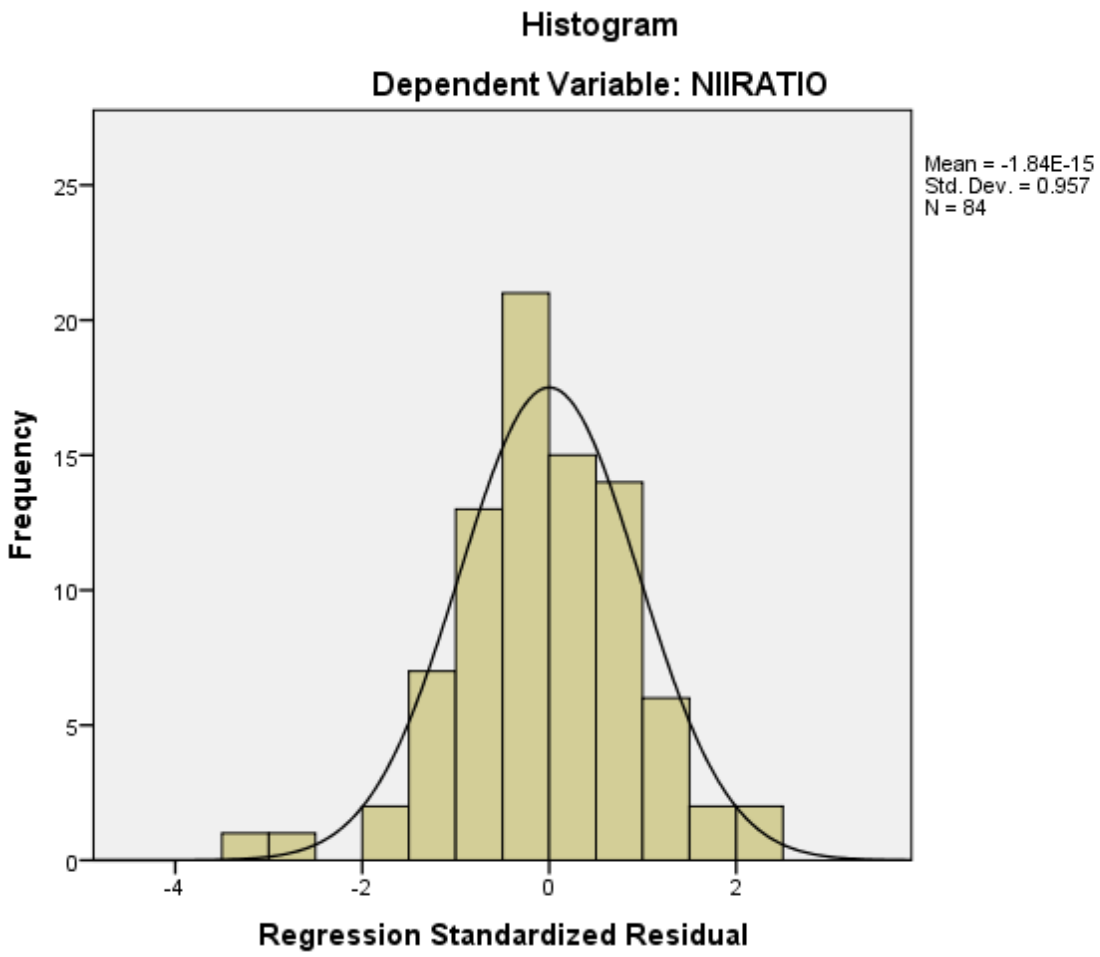
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.774[a]	.598	.561	.82130	1.369

Source: SPSS OUTPUT

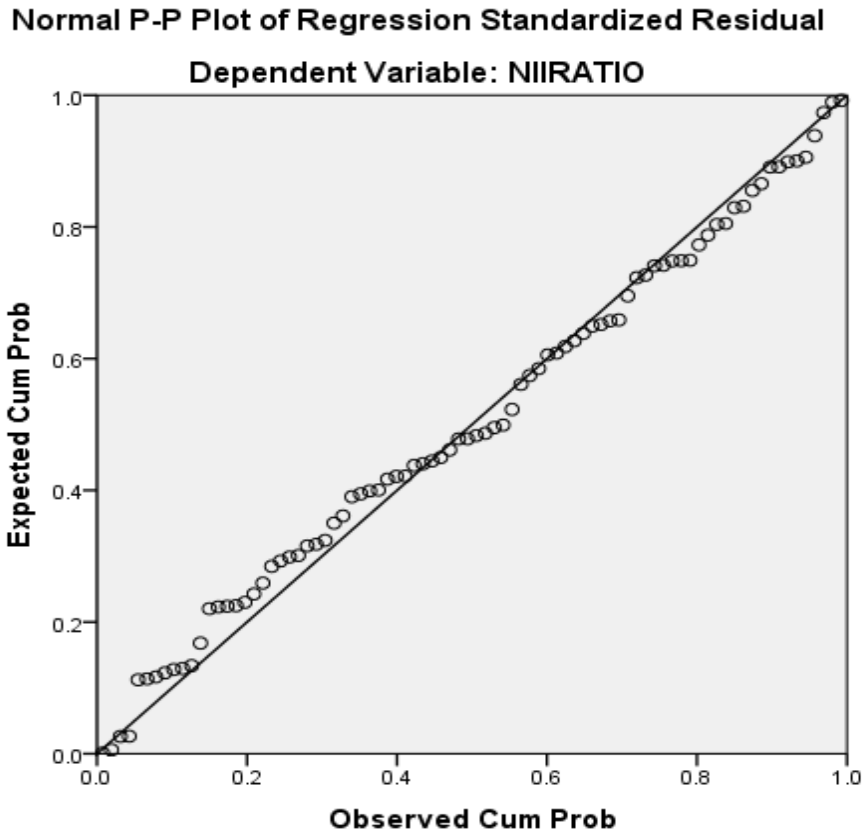
The normality test for this study as shown as shown in figure the mean is close to 0 and standard deviation 0.957 which is close to 1 implying that the data were consistent with a normal distribution assumption. The P-P plot figure also shows that the data are approximately normally distributed.

Figure 4.1: histogram showing normal distribution of data



Source: SPSS OUTPUT

Figure 4.2: normal p-p plot of regression



Source: SPSS OUTPUT

4.2.3. Test for homoscedasticity

The assumption of homoscedasticity is that the residuals are approximately equal for all predicted dependent variable scores the variance of errors is constant, if the assumption are met the pattern of the residuals will have about the same spread on either side of a horizontal line drawn through the average residual wooldridge (2005). Otherwise if the errors do not have a constant variance, they are said to be heteroscedastic. Data are homoscedastic if the residuals plot is the same width for all values of the predicted.

Heteroscedasticity is usually shown by a cluster of points that is wider as the values for the predicted dependent variable get larger. Figure is presented at the end of the appendix to check for homoscedasticity by looking at a scatter plot of residuals, or pattern of errors when plotted against the predicted values. The residuals plot shows data that are fairly homoscedastic because the clusters of points have approximately the same width all over the average residual. In fact, this residuals plot shows data that meet the assumptions of homoscedasticity, linearity, and normality (because the residual plot is rectangular, with a concentration of points along the center).

4.2.4. ANOVA Results of Model

The results of Table 4.4 revealed that the F-value (16.18) was statistically significant at 1 percent levels of significance. This implies the model is fit and the result of the ANOVA, table 4.4 confirms that this model had explanatory power.

Table 4.4. ANOVA Results of the Model

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	76.397	7	10.914	16.18	.000
	Residual	51.265	76	0.675		
	Total	127.662	83			

a. Dependent Variable: NIIRATIO

b. Predictors: (Constant), EXRVOL, RELROA, GDP, LOANQUALITY, LIQ, CAR, LNASSET

Source: SPSS OUTPUT

4.3. Regression results

The above correlation result approved the non-existence of multicollinearity. This helped the researcher to employ multiple regressions to predict the magnitude of each explanatory variable's impact on the dependent variable.

Table 4.5: OLS Multiple Regression Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-6.841	4.513		-1.516	.134
	RELROA	.498	.089	.508	5.624	.000*
	LNASSET	.393	.162	.330	2.423	.018**
	LOANQUALITY	-.129	.103	-.108	-1.257	.212
	CAR	-.007	.015	-.056	-.483	.630
	LIQ	.025	.012	.272	2.064	.042**
	GDP	.041	.104	.036	.397	.692
	EXRVOL	.036	.019	.220	1.919	.059***

R-squared	**0.598**
Adjusted R-square	**0.561**
Durbin-watson stat	**1.369**
F-statistic	**16.18**
Prob(F-statistic)	**0.000**

*, significance at 1%

**.significance at 5%

***, significance at10%

Source: SPSS OUTPUT

From the table 4.5 the adjusted R-squared statistics of the model was 56.1%. The result reveals that about 56.1% of the variability in the dependent variable (NIIRATIO) is explained by the independent variables used in the model. The remaining 43.9% of the variability in the dependent variables is left unexplained by the explanatory variables used in the study. This means that the remaining 43.9% of the changes was explained by other variables which are not included in the model.

4.3.1 Bank Specific Factors

Bank efficiency (RELROA) the beta value RELROA is .508 and statistically significant at 1% significance level. The results indicate that the relative performance of banks is important in explaining non-interest income performance in Ethiopia. This implies that banks with a better bank efficiency could generate high amount of non-interest income. This finding is consistent with Sherene A. Bailey-Tapper (2010) suggested that well managed banks generate higher amounts of non-interest income. Thus, this study accepted the hypothesis which stated there is a positive relationship between bank efficiency and non-interest income of private banks in Ethiopia.

Bank Size (**LNASSET)** the bank size which is measures by the log of total asset has beta of .330 and it is one of the most important bank characteristics when discussing noninterest income. Coefficient LNASSET is positive statistically significant at 5%. It is widely held within the literature that noninterest income activities are driven by the larger institutions. The bank size and organization indicators are insignificant and the sign is directly relation to the non-interest income. That is, the level of bank size is associated with slightly increment of non-interest income. This could be an indication that large banks provide more personalized service to customers than small banks. This is consistent with De Young and Rice (2004). On the other hand banks with large size could have economies of scale that lead to promote new products like agent banking, custodial services. Therefore, this study accepted the hypothesis which stated there is a positive relationship between bank size and non-interest income of private banks in Ethiopia.

Liquidity of the bank the Liquidity of the bank which is measures total liquid asset to total asset multiplied hundred has beta of (LIQ) .272 and it is statistically significant determinant of non-interest income of Ethiopian private commercial banks and the relationship between liquidity and non-interest income was also positive and significant at 5 percent level. This means that if the liquidity ratio of a bank increased, the non-interest income of the bank increased. For 1 percent increase in bank liquidity, as measured by ratio of liquid asset by total asset, the non-interest of the bank will increase by approximately 2.1 percent, other things being equal. It suggests that more liquid banks expand their involvement in NII. This result is in line with previous study that proved non-interest income significantly influenced by banks liquidity and they have positive relationship which is consistence with this study Basil, Senyo and Albert (2014). Thus, this study accepted the hypothesis which stated there is a positive relationship between Liquidity of the bank and non-interest income of private banks in Ethiopia.

CAPITAL ADEQUACY the capital adequacy which is measured by total equity to total asset multiplied hundred has the beta value -.056 which indicates relationship between capital adequacy and NII reveal a negative but it is insignificant relationship. This finding is inconsistent with the position of Merton and Bodie (1992) who argued that banks need "assurance capital" to enter nontraditional activities and suggests that in the Ethiopian banking industry, engagement in nontraditional activities is independent of bank capital adequacy (higher levels of equity capital). This could possibly be a signal of moral hazard behavior. But it is consistent with Basil, Senyo and Albert (2014). The hypothesis stated is a positive relationship between capital adequacy and non-interest income is rejected by the study.

Loan quality (LOANQUALITY) The other bank specific factor is Loan quality (LOANQUALITY) has beta -.108. Which indicates negatively related to non-interest income of private commercial banks in Ethiopia but it is insignificant. The hypothesis stated is a negative relationship between capital adequacy and non-interest income is accepted by the study.

4.3.2. External factors

Exchange rate volatility (EXROVL) the exchange rate volatility which measures annual percentage volatility of exchange rate of USD to birr has beta .220. It is positively related to and significant effect on noninterest income at 10% significance level. This indicates that foreign trade is increasing in the country. Hence, increasing of exchange rate leads to encourage banks earnings income from international trade activities. This result is consistent with Sherene A. Bailey-Tapper (2010). As the international trade of the country increases, the demand for foreign exchange also increases. If the demand for foreign exchange increases, banks gain from foreign exchange transaction increases. This makes banks non-interest income raises. So, this study accepted the hypothesis which stated there is a positive relationship between exchange rate volatility and non-interest income of private banks in Ethiopia.

Real GDP growth (GDP) the other external variable real GDP growth has beta .036 it insignificant. This implies that non-interest income is independent of real GDP growth. This result is inconsistent with Estifanos (2014) as he explained. Thus, this study accepted the hypothesis which stated there is a positive relationship between real GDP growth and non-interest income of private banks in Ethiopia.

CHAPTER FIVE

5. SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter presented results and discussion of the study, while this chapter will deals with summary, conclusion and recommendation of the study based on the findings. Accordingly this chapter is organized into three sub-sections. Section 5.1 will be presented summary of the study, conclusion of the study will be presented under section 5.2 and recommendation of the study will be presented under section 5.3.finally research limitations and future research direction are presented.

5.1 Summary of findings

The objective of this study was to find out the determinants of non-interest income of private commercial banks in Ethiopia. The study used explanatory research design to find out the relationship between independent variables and dependent variables of the study. The population of this study was all the 16 private commercial banks in Ethiopia currently licensed by the National Bank of Ethiopia to operate among sixteen the researcher took seven that generates financial statement from 2005 onwards. Secondary data was drawn from the financial statements of sampled private banks of Ethiopia from 2005-2016. The data was analyzed using descriptive analysis and multiple regression analysis.

From bank specific factors bank efficiency, bank size and bank liquidity had a positive and statistically significant relationship with non-interest income, which was also in line the expected sign. A positive sign suggests that banks with better bank efficiency, bank size and banks with better liquidity could generate high non-interest income. On the other hand loan quality of the bank has invers relation with non-interest income of the bank which is consistent with expected result. Regarding to the effect external factors exchange volatility has direct and significant

relation with non-interest income of private commercial banks in Ethiopia and the result is consistent with expectation of the result. The other external factor is real GDP has positive relation with noninterest income of the bank. But it is consistent with the expected relation.

5.2. CONCLUSIONS

This study examines the determinants ban specific and external factors of non-interest of Ethiopian Private commercial banks in Ethiopia. The regression result shown that the coefficient of the bank efficiency is positive and it is significant determinants of non-interest income at 1% significance level. This implies that well managed banks generate higher amounts of non-interest income per birr of assets. Efficient banks would have higher non-interest income by diversify their source of income by promoting new products.

The coefficient of Banks liquidity is that positive and statistically significant. This indicates that banks with better liquidity position could generate high non-interest income. On the other hand coefficient of bank size is positive. This implies that banks with better asset could generate a higher non-interest income. The other bank specific factors which are capital adequacy and loan quality have negative coefficient but it is statistically insignificant.

On the other hand the most important factor is exchange rate volatility which has positive effect on non-interest income of banks at 10% significance level. This implies that banks with high participation in international trade could generate a higher return from exchanging foreign currencies. This is not the only income generated also banks serving as intermediary could generate higher commission, service and swift charge from international trade arrangements such import letter of credit (LC), cash against document (CAD) telegraphic transfer (TT) this is

consistent with De Young and Rice(2004). However, real GDP growth rate is not important to determine non-interest income of the bank.

5.3. RECOMMENDATIONS

Based on the above result the following recommendation are formulated

- ✓ Well managed bank could improve its bank efficacy which is directly increased non-interest income of the bank so, it is recommended that all bank to adopt modern management system which enhance bank efficacy.

- ✓ According to the finding of the study banks with large size have high advantage of generating high non-interest income. One reason for this situation is that banks with large asset could create economies of scale, so, it is recommended that banks should have to increase their asset size to improve their non-interest income generation.

- ✓ The other is banks with most liquid asset have a capacity to solve uncertain withdrawal of and to generate high non-interest income so; it is recommended that banks to have a better liquidity position.

- ✓ Finally from external factor exchange volatility is positively related. This implies that generating more foreign currency is important to gain high income from exchange of foreign currency. So it is recommended that banks to focus on foreign currency sources such export, remittance and cash purchase, foreign direct investment (FDI) by providing different incentives.

At the end based on result of analysis it shows that R^2 is 59.8% this indicate that the model doesn't included all variables which are potential determinates such non-financial determinants of non-interest income so it is a potential study area for further researches.

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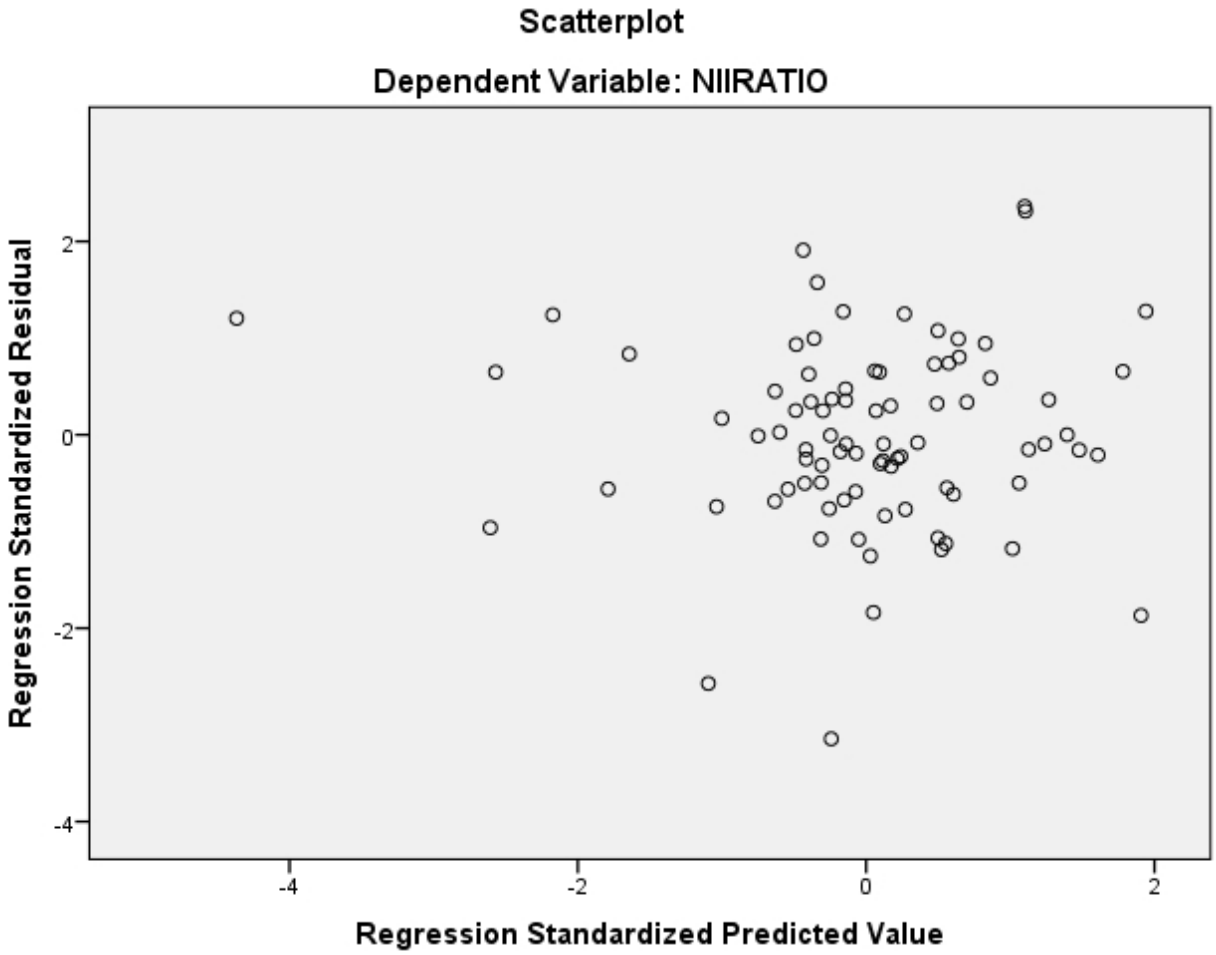
Appendix

Chart 1: Homoscedsitcity test for model



Source: SPSS OUTPUT

Table A: Correlations matrix of dependent and independent variables

Model		GDP	RELROA	EXRVOL	LOANQUALITY	LIQ	CAR	LA
1 Correlations	GDP	1						
	RELROA	-0.19	1					
	EXRVOL	-0.265	0.317	1				
	LOANQUALITY	-0.079	0	0.137	1			
	LIQ	0.153	-0.302	-0.744	-0.162	1		
	CAR	0.08	0.376	0.355	0.436	-0.404	1	
	LNASSET	0.516	-0.327	-0.499	0.214	0.526	0.209	1

Source: SPSS OUTPUT

Table B: OLS Multiple Results Regression

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-6.841	4.513		-1.516	.134		
	RELROA	.498	.089	.508	5.624	.000	.648	1.543
	LA	.393	.162	.330	2.423	.018	.285	3.511
	LOANQUALITY	-.129	.103	-.108	-1.257	.212	.716	1.396
	CAR	-.007	.015	-.056	-.483	.630	.392	2.554
	LIQ	.025	.012	.272	2.064	.042	.305	3.279
	EXRVOL	.036	.019	.220	1.919	.059	.401	2.495
	GDP	.041	.104	.036	.397	.692	.635	1.575

a. Dependent Variable: NIIRATIO

Source: SPSS OUTPUT