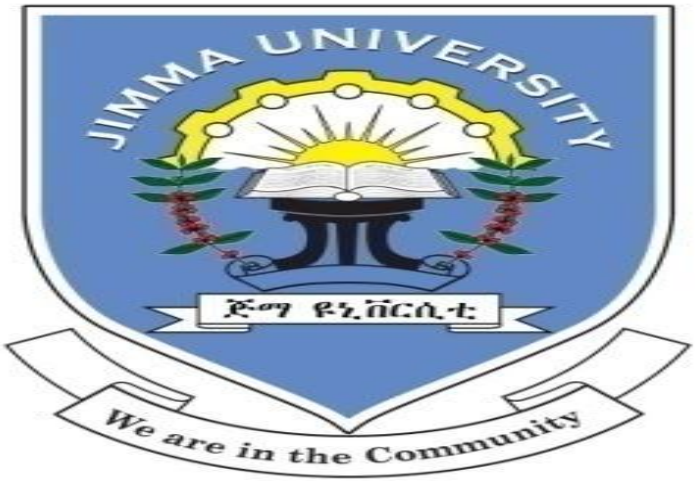
Financial performance of private commercial banks in Ethiopia: by CAMELS approach

A Thesis Submitted to the School of Graduate Studies of Jimma University in Partial Fulfillment of the Requirements for the Award of Master Degree in Accounting and Finance (MSC).

BY:

BULTI HAILU



JIMMA UNIVERSITY

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BULTI HAILU

Under the guidance of

Dr. Matewos Kebede (PhD)

And

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JUNE, 2019

JIMMA, ETHIOPIA

Statement of Declaration

I, the under signed, declare that this study is my original work and has not been presented for a degree in any University, and that all source of materials used for this thesis have been duly acknowledged

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Declared by: BultiHailu

Signature_____

Date May 29, 2019

Statement of Certification

This is to certify that the thesis prepared by BultiHailu, on the topic entitled: Financial performance of private commercial Banks in Ethiopia by the use of CAMELS approach and submitted in partial fulfillment of the requirements for the degree of Master of Science in Accounting and Finance compiles with the regulations of the University and meets the accepted standards with respect to originality and quality.

Signed by:

Advisor Dr. MatewosKebede (PhD) Signature_____ Date_____

Co-advisor Mr. MillionGizaw(Msc) Signature_____ Date_____

Signed by the Examining Committee:

Internal Examiner_____ Signature_____ Date_____

External Examiner_____ Signature_____ Date_____

Abstract

The purpose of this study was to investigate the effects of CAMELS elements on profitability of nine senior Ethiopian private commercial banks for the periods 2010-2017 and thereby rank the overall financial performance of the respective banks. The financial performance of nine private Ethiopian commercial banks was selected based on the purposive sampling technique. Only the secondary data from audited financial statements of the selected banks were adopted .To accomplish the stated objectives explanatory and descriptive research type were used. The collected data were analyzed by using both descriptive and inferential statistical tools. The descriptive statistics tools were used to rate the overall financial performance of the banks, while panel regression model were used to measure the impacts of CAMELS elements on the bank performance i.e. ROA and ROE. Based on the composite ratings of the individual rankings of the bank LIB, NIB and Wagagen bank listed from first to third. This study runs the redundant fixed effects test using Hausman specification test to choose between random and fixed effect model. Hence based on the result from the regression analysis, OLS model was adopted. Based on the regression result; management efficiency, earnings ability, liquidity management and sensitivity to market risk have a significant influence on the financial performance of Ethiopian private commercial banks measured by return on asset and return on equity. The management of commercial banks should strive to strengthen the above mentioned significant variables. The regulatory organ National bank of Ethiopia should consider the effect of sensitivity to market risk equally as the sixth components of CAMELS elements for the estimation of the bank performance and soundness as also being recommended by IMF and World Bank.

Key words; CAMELS model, Ethiopian Private Commercial Banks, ROA, ROE, IMF, World Bank

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Acronyms

BOA: Bank of Abyssinia Sco.

CAMELS: Capital adequacy, Asset quality, Management Efficiency, Earnings ability, Liquidity and Sensitivity to market risk

CAR: Capital Adequacy Ratio

GDP: Gross Domestic Product

NIB: Nib International Bank Sco.

NIM: Net Interest Margin

NPAs: Non-Performing Loans

ROA: Return on Asset

ROAA: Return on Average bank Asset

ROC: Return on Capital

ROE: Return On Equity

PAT: Profit After tax

PBT: Profit Before Tax

UNB: United Bank Sco.

CHAPTER ONE

INTRODUCTION

This chapter begins with presenting background of the study followed by statement of the problem, objective of the study, significance of the study, scope &limitation of the study.

1.1 Background of the Study

Financial sectors play a crucial role in economic growth and industrialization via channeling funds from surplus units- the depositors, to the deficit units, the borrowers, in the process gaining from the spread of the different interest charged. Their intermediation role can be said to be a catalyst for economic growth (Funso, Kolade and Ojo, 2012). The role and importance of banks of modern economy is enormous (Bikker, 2010; Rashid, 2010; Altan, Beduk and Yusufazari, 2014) and its products/services which it provides growing in terms of depth, the number of institutions and the amount of money that managed by such institutions. The roles of such Banks are paramount in developing countries like Ethiopia where the financial market is underdeveloped and none existed.

Commercial banks undertake a wide variety of activities, which play a critical role in the economy of a nation. They pool and absorb risks for depositors and provide a stable source of investment and working capital funds to various sectors of the economy. In addition, they provide a smooth functioning of payment system that allows financial and real resources to flow freely to their highest return uses. They are also a back-up source of liquidity for any sector in the economy in temporary difficulty. The three main interrelated functions of commercial banks are holding of deposits; create credit through lending investment activities; and providing a mechanism for payments and transfer of funds for various productive activities. The extension of credit or lending is, thus; the principal activity of a commercial banks (Bikker).

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

performance of banks is crucial to understanding the stability of financial sector as well as consecutive economic crisis (Dawit,2016).

Performance of banks is measured at two levels, one is at the management and regulatory level of the banks and another is at external rating agencies. Purpose of regulatory and supervisory rating systems is to measure the bank performance at internal level and its compliance with regulatory requirements to keep the bank on right track. These ratings are highly confidential and are only available to the bank management. External credit rating agencies examine and evaluate banks and issue ratings for the general public and investors in particulars. It is of great importance that both these ratings present the same results about the condition of the banks to provide clear information to investors and management. In the past several banks suffer from bankruptcy that suggests the failure of both internal rating systems and credit rating agencies (Dang U).

The banking environment in Ethiopia has, for the two decades, undergone many regulatory and financial reforms like other African countries and the rest of developing world. These reforms have brought about many structural changes in the banking sector of the country and have also encouraged private banks to enter and expand their operations in the industry (Lelissa, 2007). Despite these changes, currently, the banking industry in Ethiopia is characterized by operational inefficiency, little and insufficient competition and perhaps can be distinguished by its market concentration towards the big government owned commercial bank and having undiversified ownership structure (Lelisa, 2007).

The purpose of this paper is to investigate the performance of Commercial Banks using CAMELS models. This model is the supervisory and regulatory rating system. It takes into account six important components of a bank when it evaluates performance of the bank. These components are Capital, Assets, Management, Earning, Liquidity and Sensitivity to market risk. Ratings is assigned to these components on the scale of 1 to 5 and that is a base for composite rating that also ranged from 1 to 5.

The aim of performance measurement systems is to identify key factors of success and measure them. When defining word performance measurement the terminology used by authors varies a lot. According to Neely (1995) measuring performance means process of quantifying action, where measurement is the process and action leads to performance.

The purpose of CAMELS ratings is to determine a bank's overall condition and to identify its strengths and weaknesses in Financial, Operational and Managerial aspects. Despite the use of CAMEL Model by regulators to assess financial performance of banks, inefficiencies in performance have been experienced. Other countries have shifted to other Models like EAGLES (Earning ability, Asset quality, Growth, Liquidity, Equity and Strategy) (Wirnkar and Tanko, 2007). There is therefore need to reassess the adequacy of the CAMELS Model as tool for assessing financial soundness of banks.

The main advantage of this sort of approach over others like balanced score card is that exam ratings (CAMEL ratings) are thought to be highly accurate measures of bank condition (at least of current condition), since they reflect supervisory assessments of private information (e.g. on the quality of non-traded loans and the institution's management) that may be superior to that available to outside analysts (Cetorelli, 1999). Although CAMEL ratings are not a comprehensive indicator of all the supervisory information gathered during a full scope exam, they serve as a convenient summary measure for analysis, (Lopez, 1999).

The banking sector is the backbone of economy in the country. As the banks are interconnected with each other for the payment and other functions, the failure of a single bank not only affects its shareholders and depositors rather it affects all over the bank (Kumbirai andWebb,2010) and it creates an economic disorder situation which is regarded as a disaster for the economy that was viewed in recent global financial crises and economic recession that occurred as the result of bank failure at thebeginning (Al Karim and Alam, 2013),in 1990,south east asia,2008 in USA and Europe

So, banks are exposed to many types of risk that has caused in different situations which result in different level of risks. Such risks include liquidity risk related to inability to meet current demand; credit risk is a default occurs when a borrower does not make the obligated interest and principal payments in a timely manner, interest rate risk (the possibility that the bank will become unprofitable, if rising interest rates force it to pay relatively more on its deposits than it receives on its loans). Zawadi (2013), Mohiuddin (2014) stated that Sound financial health of a bank is the guarantee not only to its depositors but is equally important for the shareholders, employees and whole economy as well.

The subject of financial performance and research into its measurement is well advanced within finance and management fields (Alkhatib, 2012). As Searle (2008) stated the government of all nations should have maximum concern on performance of all banks which

are operating in the territory of the country. In consideration of such outcome and alarm , the financial health of each bank should have been measured from time to time and managed efficiently and effectively (Sangmi&Nazir, 2010).

There are different stakeholders that have interest in evaluations of the performance of banks including depositors, investors, bank managers and regulators (Ibrahim, 2014). For instance central banks and bank regulators may need to identify and call attention to banks that are experiencing chronic financial problems in order that they may fix them before they get out of control. On the other hand, Shareholders need to assess which banks they can deem suitable for financially invest in. The banks evaluate their own performance over a given period so that they may determine the efficacy and long term viability of management decisions or goals so that they can alter the course and make changes whenever it is appropriate.

The stage of development of the banking industry is a good reflection of the development of the economy (Misra&Aspal, 2013). To sustain the development of the economy, the performanceand health of banks has to be checked and evaluated periodically. There are different approachesused by different regulatory bodies. Among those approaches, most preferred parameters used bythe regulators and different scholars are CAMEL (capital adequacy, asset quality, managementquality, earnings and liquidity) rating criterion to assess and evaluate the performance andfinancial soundness of the activities of the bank. The CAMEL supervisory criterion in bankingsector is a significant and considerable improvement over the earlier criterions in terms offrequency, check, spread over and concentration (Misra&Aspal, 2013; Basel, 2011). Hence, owing to the existence of very limited literature in the subject matter and inspired by CAMEL model advantages, this particular study wastried to explore the effects and/or impacts of the bank specific factors on Ethiopian private commercial banks profitability. The reasons behind focusing only on bank specific variables are due to the existing less competitive and highly protected Ethiopian banking environment.

1.2 Statement of the problem

Today it becomes extremely essential for commercial banks to evaluate their performance because their survival in the dynamic economic environment will be dependent upon their good performance. Commercial banks serve as an intermediation and one's nation money stock. Evaluation of their performance is indubitably important to depositors, owners, investors, managers and regulators. Periodic measurement and evaluation of their performance is vigorous for ensuring their financial soundness and management's quality.

Therefore, this study wanted to carry out periodic financial measures and evaluates the financial performance of the private commercial banks by deploying the composite CAMELS ratings for a period of eight years (i.e. 2010 – 2017). It helps to examine how strong or weak they are and generate a composite index to stakeholders such as management, owners, regulators and supervisors for the timely warning to minimize adverse effects of the mentioned variables on the banks. For this reason, Barker and Holds worth (1993) and Gaytan and Johnson (2002) argue that the composite CAMEL rating is very much popular among regulators due to its effectiveness. In addition, Dang (2011:39) confirms that the CAMEL rating is significant to banking supervision and is currently popular among regulators worldwide.

Furthermore, Since Ethiopian banking sector has shown a rapid progress in terms of number of commercial banks, total assets and capital, widening their branch network, increasing their outreach to remote areas and continuously reporting profits of different magnitude, the evaluation of their financial performance is very necessary.

The economic crisis that has started in the US in the year 2008 was mainly emanated from bank failures. As a matter of fact, it has alerted the need for frequent bank examinations all over the world. Thus, Ethiopian Private commercial banks need to learn timely on how to stay healthy, competent and profitable in a very competitive and dynamic business environment. To do so, the impact of bank specific factors on profitability of private commercial banks in Ethiopia that attempts to properly analyze and rank the financial and/or operational results using CAMELS model is almost non-existent and/or very limited to the level of awareness of the researcher. Hence, this particular research is meant to fill the gap in this regard.

The study conducted by Mulualem (2015) on his evaluation of fourteen commercial banks using panel data and multiple regression for the period of 2010-2014 reveals that Capital adequacy, Asset Quality and Management efficiency have negative relation whereas earning and liquidity shows positive relationship with both profitability measures by using ROA and ROE. The ranking result based Buna international bank ranked first by capital adequacy, asset quality and liquidity ratio while commercial bank ranked first by Management efficiency and Earning ratios respectively and finally Wegagen Bank wasthe first by the composite rate. However, the study conducted by Dakito (2015) using CAMEL approaches for the period 2000-2013 found that NIB's overall performance was good.

Similar paper studied byErmias (2016) has also investigated the effects of internal determinants ofprofitability of six senior private Ethiopian commercial banks of the period 2000-2014 andthereby ranked the overall financial performance of the respective banks based on CAMELmodel. He noted that bank specific factors incorporated into the CAMEL model affect to theextent of 67.5 of the changes in profitability of the private commercial banks of Ethiopia. Onanother study, Tesfaye (2014) examined the determinants of Ethiopian banks performance considering bank specific and external variables on selected banks' profitability for the 1990-2012 periods. He found that bank specific variables by large explained the variation inprofitability.

Gudata (2015) in his studies on measuring the financial performance of five commercial banks of the period 2007-2011 using ratio analysis was found that Commercial Bank of Ethiopia stands first in assets management whereas Awash International Bank took the first rank in terms of profitability performance. The Cooperative Bank pertains to stand last in terms of liquidity management and United Bank stood at the first rank in terms of solvency and risk management among all sample banks under study.

Even though, various studies were conducted to explain bank performance using CAMEL parameters, no one can still use the effect of the sixth elements of CAMEL model "S" (sensitivity to market risk). Similarly, most of the studies were conducted at different periods of time, used different methodologies, and also their findings are also varied. Hence, this particular study was trying to fill the gap mentioned above bythe inclusion of additional explanatory variable sensitivity to market risk and also additional proxies, which were not used.

1.3 Objectives of the Study

1.3.1 General Objective

The general objective of this study was to evaluate the effects of banking specific factors on the profitability of private Commercial Banks in Ethiopia by using CAMELS model and rank them based on their performances.

1.3.2 Specific Objective

The specific objectives of the study that are derived from the general objective are:

1. To check the effect of capital adequacy on the performance of Private commercial banks in Ethiopia

2. To assess the asset quality of private commercial banks in Ethiopia

3 To find out the effect of management capability on the performance of private commercial banks in Ethiopia

4. To analyses the earning quality of private commercial banks in Ethiopia

5. To find out the liquidity positions of the private commercial banks in Ethiopia

6 .To examine the sensitivity to market risk of private commercial banks in Ethiopia

1.4 Hypothesis

In connection with the objective described above, the following hypotheses were also formulated and tested based on the theories and past related empirical studies of the other outers.

Some of the empirical studies worked by the previous researchers are here under by the use of performance measurements of ROA and ROE.

Table 1.1: Summary of Variables Used in the Study

Author	Variables	Relation ship
Dawwit	CA and ROA	Positive and significance at 10 %
	AQ,EQ and Liquidity with ROA	Negative
	But,ROE with CA,AQ,EA and LM	Negative
Melaku	AQ,ME,EQ and LM with ROA	Negative
	CA with ROA	Positive
Mulualem	CA,AQ & ME with performance	Strong negative
	CA,EQ and LM with performance	positive
Lemlem	AQ & EA	negative
Habtamu	CA,ME & AQ with ROA	Positive
	EA,AQ & LM with ROA	Negative
	ME & CA with ROE	Positive
	AQ & LM with ROE	Negative

Therefore, this study was tried to test the following hypotheses based on the theories developed and the above Empirical review of the previous work done by other researchers as per the following hypothesis developed here:

Reviewed empirical literatures showed that there are no consensus results among the previous research done by different authors as per the country level as well as international journals. Therefore, here is the hypothesis formulated under this study to be tested in order to check the relationship between bank specific variables (CAMELS) and performance of the banks measured by ROA and ROE and check the reliability of the above results which has done before.

H1: There is a significantpositive relationship between capital adequacy ratios and Performance of the banks measured by ROA and ROE.

H2: There is a significant negative relationship between asset quality ratios and performance of the banks measured by both of ROA and ROE.

H3: There is a significant positive relationship between management efficiency ratios andPerformanceof the banks.

H4: There is a significant positive relationship between earnings ratios and performance ofthe banks.

H5: There is a significant positiverelationship between liquidity ratios and performance of the banks measured by ROA and ROE.

H6: There is a significant negative relationship between sensitivity to market risk and performance of the banks.

1.5Significance of the Study

The banking sector is increasingly growing and it has witnessed a huge flow of investment. In addition to simply being involved in the financial intermediation activities, banks are operating in a rapidly innovating industry that urges them to create more specialized financial services to better satisfy the changing needs of their customers. Sundararajan et al. (2002) argues that the financial system, the bank in particular, is exposed to a variety of risks that are growing more complex nowadays. Furthermore, the economic downturn of 2008 which resulted in bank failures, are triggered in the U.S. and then wildly spread worldwide. It therefore increasingly urges the need of more frequent banking examination.

In order to cope with the complexity and a mix of risk exposure to banking system properly, responsibly, beneficially and sustainably, it is of great importance to evaluate the overall performance of banks by implementing a regulatory banking supervision framework. One of such measures of supervisory information is the CAMEL rating system.

Therefore significance of this study is to measure the financial performance of commercial banks based on CAMELS approach and the findings of the study willprovides relevant information to commercial banks on the area of weaknesses and strength's which needs improvement. Furthermore, it gives insight about the current situations and performance of banks to the regulatory body, shareholders, investors and managers. Besides, it will be used as a reference to researchers that want further investigation into the area of study.

1.6 Scope of the study

The scope of the study was focused on the financial performance of private commercial banks in Ethiopia based on bank specific factors of profitability determinants by using the CAMELS approaches. And also it was delimited to nine private banks of which includes Awash International bank, Dashen bank, Wegagaen bank, NIB, Bank of Abyssinia, Cooperative bank of Oromia, Lion International bank,Oromia International Bank and United bank due to the availability of audited Financial report of the last eight (8) years. The time period for the study was between 2010 up to 2017.The financial performance of the banks were measured by using six elements of CAMELS, whichwas capital adequacy, Asset quality, management ability, earning quality, liquidity and sensitivity to market risks.

1.7. Limitation of the Study

The study is only limited to the nine private commercial banks established in Ethiopia for the period of 2010-2017. Due to the unavailability of the audited financial statement of government owned commercial banks of Ethiopia for the year 2017 this study limited only to the private commercial banks. Due to the confidentiality of banking industry information the researcher found it fairly, tough to access certain type of materials, like off balance sheet items and Nonperforming loans data, unavailability of loan loss provision was also another limitation which would limit the research work. In addition, the unavailability of data related to the measurement of the Sixth factor of the CAMELS model, i.e. Sensitivity to the market, was also another limitation in this study.

1.8 Organization of the Study

This study had divided in to five chapters. The first chapter including background of the study, statement of the problem, objectives; general and specific, significance of the study, scope and limitation of the study. The second chapter focuses on the review of literature, theoretical and empirical reviews. The third chapter deal about the research design and methodology, it includes research approach, data collection and analysis methods. The fourth chapter presents the research results including descriptive statistics result of variables and regression result for models. The last chapter deals about summary of the study, recommendations and conclusions.

CHAPTER TWO

REVIEW OF LITERATURES

Theoretical Literature review

A healthy and vibrant economy requires a financial system that moves funds from people who save to people who have productive investment opportunities. The financial system is complex in both structure and function throughout the world. It includes many different types of institutions': banks, insurance companies, mutual funds, stock and bond markets, etc.

According to Spong (2000), efficiency and competition are closely linked. In a competitive banking system, banks must operate efficiently and utilize their resources wisely if they are to keep their customers and remain in business. Zerayehu et al., (2013) also argued that survival in today's competitive environment totally depends on performance and growth. Competition has implications for efficiency, innovation, pricing, availability of choice, consumer welfare, and the allocation of resources in the economy.

2.1 Overview of Ethiopian Financial Sector

2.1.1 Financial Sector in Development

The financial sector in Ethiopia is composed of the banking industry, insurance companies, microfinance institutions, saving and credit cooperatives and the informal financial sector. The banking industry accounts about 95 percent of the total financial sector assets, implying that the financial sector is under developed, and activities that banks could perform are legally limited, which in turn contribute to lesser contestability. (Zerayehu et al., 2013)

Ethiopia's banking industry is closed and generally less developed than its regional peers. The industry comprise one state owned development bank and 18 commercial banks, two of which are state-owned including the dominant commercial bank of Ethiopia (CBE), with assets accounting for approximately 70 percent of the industry's total holdings. The banking industry's nonperforming loan ratio is commendably low, and profitability is good, but the dominance of public sector banking certainly restricts financial intermediation and economic growth. It contrasts with regional and international peer countries where banking industries have a much higher share of private sector and foreign participation (Keatinge, 2014).

Financial intermediation is relatively low in Ethiopia and it is in declining trend. Financial intermediation is a driving force for economic development. In 2011, credit to private sector was around 14 percent of the gross domestic product (GDP). This indicates that it is falling behind its sub-Saharan African peers, which was compared to be 23 percent on average. Despite the overall disintermediation trend, the Ethiopian financial sector continues to have the potential to be a driver of economic growth. The banking sector remains, stable, well capitalized and continues to be highly profitable. The Ethiopian banking sector ranks higher than the SSA average in terms of profitability measured on the basis of Return on Equity (ROE). High profitability is also explained by limited competition. Moreover, the bank assets concentration index indicates that Ethiopian banking sector is much more concentrated than SSA and low income group averages. Moreover, the non-performing loan ratio is reported to be at its lowest level, i.e., 1.4 percent. (World Bank, 2013)

2.1.2 An over view of Ethiopian Banking System

Modern banking in Ethiopia was introduced in 1905 by an agreement between the then Ethiopian Emperor Menelik II and a representative of the British owned National bank of Egypt. The stated agreement has led to the establishment of bank of Abyssinia and it has been inaugurated in Feb 16, 1906. Later on in the 1930's, the bank was bought by the Ethiopian government and the State Bank of Ethiopia was established by a proclamation issued in August 1942. This bank was later disintegrated into two different banks forming the National Bank of Ethiopia and the Commercial Bank of Ethiopia (Leulseged,2005; Alemayehu 2006,sited in Ermias,2016).

In the history of Ethiopian banking industry, Addis Ababa Bank Share Company was the first private Ethiopian bank that had been established by the Ethiopian citizens' initiative and with the collaboration of National and Grandly bank London which had a possession of 40 percent of the total share holdings. The stated company had started its operation in 1964 with a paid up capital of two million. In the pre-1974 era, there hardly was any banking competitive environment, since the banking industry was dominated by a single government owned State Bank of Ethiopia. (Zerayehu et al., 2013).

After the termination of fragile and inefficient state-dominated banking sector that has existed in Ethiopia from 1974-1991, the current government restructured and introduced a new Banking and Monetary proclamation that gave more autonomy and further clarified the National Bank of Ethiopia's activities as a regulator and supervisor of the banking sector.

Moreover, the reform has legalized investment in the domestic private banking sector in 1994 under proclamation no., 84/1994 that marked the beginning of a new era in the Ethiopian banking sector (Admasu&Asayehegn 2014).

In the Ethiopian banking industry, there exist only two forms of bank ownership: fully government owned or fully privately owned. No hybrid form of the two forms of ownership or the involvement of foreign ownership exists (Tesfaye, 2014).

To generalize, the banking industry in Ethiopia is highly regulated and closed from foreign competition. Banks operate extremely in conservative lending policies and require physical collateral for virtually all loans constrain inclusive growth. Key risks to financial stability & inclusive growth include: Unpredictable inflation; foreign exchange shortage aggravated by unstable export performance; lack of skilled manpower in the banking industry; collateral based lending is constraining private sector lending and alternative financing mechanism is lacking; ineffective ICT infrastructure on account of very weak internet connectivity; regulatory burden and/or tightening of regulations (the 27% NBE bill and entry barrier by increasing the capital requirement can be mentioned) ; restriction of foreign bank entry ; lack of standardized accounting practices, and very weak and less organized risk management practices (Getnet2012).

2.1.3 The Banking Business Environment In Ethiopia

The NBE uses CAMEL method, which is based on accounting or financial reports to evaluate the degree of riskiness‟ of the banks.

2.1.3.1 Nature of Competition

Competition in the banking industry has indisputable effect on financial stability and economic growth. However, the impact on efficiency and stability is not always positive (Allen & Gale, 2004). According to scholars, higher competition in the banking industry can lead to a more efficient financial system on one hand and profits realized from the difference between deposit and loan rate might be highly reduced on the other hand.

According to Spong (2000), competition is a driving force in keeping banks innovative in their operations and in designing new services for customers. Moreover, competition and efficiency depend on the number of banks operating in a market, the freedom of other banks to enter and compete, and the ability of banks to achieve appropriate size for serving their customers.

2.1.4 Bank Profitability

According to literatures, bank performance studies have been started in the late 1980s and/or early 1990s. These studies surrounded by different theories. For Instance, the signaling theory, which elaborates the relationship between capital and profitability, suggests that higher capital is a positive signal to the market of the value of bank. (Berger, 1995)

By the same idea, a lower leverage indicates that banks perform better than their competitors who can't raise their equity without further deteriorating the profitability (Ommeren, 2011).

Bankruptcy cost hypothesis on the other hand, argues that in case where bankruptcy costs are unexpectedly high , a bank holds more equity to avoid period of distress (Berger, 1995). Hence, both the signaling theory and bankruptcy cost hypothesis support the existence of a positive relationship between capital and profitability. However, the risk-return hypothesis suggests that increasing risks, by increasing leverage of the firm, leads to higher expected return (profitability) on one hand and it will definitely reduce the equity to asset ratio (represented by capital) on the other hand. Thus, risk-return hypothesis predicts a negative relationship between capital and profitability. (Obamuyi, 2013).

Contrary to the above argument, Modigliani - Miller theorem conclude that no relationship exists between the capital structure (debt or equity financing) and the market value of the bank (Modigliani and Miller, 1958). In other words, no relationship exists between equity to asset ratio and funding costs or profitability under perfect market. However, when the concept of Money Market's perfect market is scrutinized there is no such a thing in the real world owing to agency problem, information asymmetry problem, existence of transaction costs, etc. Thus, when the perfect market does not hold there could be a possible negative relationship between capital and profitability. (Ommeren, 2011)

Olweny and Shipho (2011) argued that the Market Power theory (MP) assumes bank profitability is a function of external market factors, while the Efficiency Structure (ES) theories and the balanced portfolio theory largely assume that bank performance is influenced by internal efficiencies and managerial decisions. Despite the existence of several models to deal with bank specific aspects, none of the models are believed to be sufficient to express all bank specific behaviors in a holistic manner, the researchers asserted

2.2 Determinants of Banks Profitability

There are mainly two (Internal & External factors) and sometimes three (Macroeconomic, Industry specific, and bank specific factors) ways of classifying bank performance determinants (Toddard et al., 2004; Panayiotis et al., 2005).

2.2.1. External Factors/ Macro-economic Factors

Panayiotis et al. (2005), Afanasieff et al. (2002) stated that, macroeconomic policy stability, Gross Domestic Product, Inflation, Interest rate and political stability are believed to be the major macroeconomic factors that affect the performances of banks. According to Nassreddine et.al in Onuonga (2014), the external determinants of bank profits are related to both the economic and legal environments in which the banks operate.

2.2.2. Bank Specific Factors/Internal Factors

Bank specific variables are variables that affect the profitability of a specific bank. These factors are within the scope of the bank and are easy to be manipulated and differ from bank to bank.

These include capital size, size of deposit liabilities, size and composition of credit portfolio, interest rate policy, labor productivity, state of information technology, risk level, management quality, bank size, ownership, etc. (Zimmerman , 1996 ; Bourke, 1989; Wall, 1985)

Andreas and Gabrielle (2009) stated that the bank profitability is usually measured by internal determinants which include bank specific variables. Athanasoglou et al, (2006) argued that profitability is a function of internal factors that are mainly influenced by a bank's management decisions and policy objectives such as the level of liquidity, provisioning policy, capital adequacy, expense management and bank size, and the external factors such as ownership, market concentration and stock market development, and other macroeconomic factors.

However, the main focus of this particular study is to investigate the impact of bank specific factors on banks profitability and there by rank the overall performance of the respective bank by using CAMEL model (bank specific) proxies. Needless to say, even though the main focus of this particular study is mainly confined to quantitative measure of bank specific variables; It should be properly noted that quantitative performance measurements by their nature are not comprehensive enough since they lack to incorporate qualitative elements such

as monetary policy, regulation and supervision, financial sector openness, institutional environment, financial sector and non-bank, the management style and risk taking behavior of the bank itself. Any financial sector indicators lacking these qualitative elements could not be complete enough to capture the true level of the sector. (Creane, 2004) .

2.3 Why Are Financial Soundness Indicators (FSIs) Data Needed?

The recognition of the need for FSI statistics among the international community aroseout of the financial crises of the 1990s. A review of recent decades shows that manyIMF member countries experienced financial crises that often resulted in severedisruptions of economic activity. The significant costs of these crises, both direct (suchas the cost of recapitalizing the deposit takers) and indirect (such as the loss of real economic activity), have highlighted the need to develop a body of preferably highfrequencystatistics that could help policymakers in macro prudential analysis, that is, in identifying the strengths and vulnerabilities in their countries' financial systems. Such analysis could form the basis for taking action to prevent crises from occurring.

Understanding of the nature and causes of financial system crises has developed agreat deal in recent years, but analytical work continues. Financial system crises canarise from the failure of one or more institutions, whose effects then spread through a variety of contagion mechanisms to affect the whole system. The original shock thatcaused the failure is likely to be external or exogenous to the institution. Indeed, prudential supervision supports efforts to identify potential vulnerabilities in individual institutions before they become severe, and if they do become serious to information's that limit their systemic consequences Systemic crises can also arise from the exposure of a financial system to common risk factors. Under these circumstances, systemic stability is determined by behavior internal or endogenous to the system. Inother words, financial crises arise when the collective actions of individual agents makethe system itself vulnerable to shocks. The buildup of these vulnerabilities and riskstends to occur over time, such as during an economic upswing when confidence ishigh, before materializing in recessions. The sources of vulnerability of the financial system can vary: for example, poor asset quality, undue exposures to market andcredit risk, and lack of capital. The timing of a crisis and its immediate causes can alsovary: for example, the deteriorating condition of private borrowers, excess government borrowing that undermines confidence, concern over a large current account deficit, and/or a sharp swing in the exchange rate. When the financial system is vulnerable, such events can result in a financial system crisis that imposes severe losses on an economy, both directly and indirectly: directly as

depositors lose funds as banks fail and as governments incur fiscal costs to rebuild the financial system; indirectly as economic activity is reduced by the disruption of financial intermediation and/or payment systems. Moreover, there can be adverse social consequences from theeconomic and financial disruptions.

FSIs is used to (1) assess the vulnerability of the financial sector to shocks; (2) assessthe condition of nonfinancial sectors; (3) monitor financial sector vulnerabilities arisingfrom credit, liquidity, and market risk; and (4) assess the capacity of the financial sector to absorb losses, as measured by capital adequacy

2.4 Why Performance measurement of banking sector?

Banking sector is an important and unquestionable determinant of the economic development as it directs the flow of the funds from surplus economic units of the economy towards deficit economic units (Khan, 2006, p. 11).

Banking industry being an important pillar of financial sector of an economy, its performance measurement cannotbe neglected. Role of financial institutions and banks in particular in economic development of a country is accepted and acknowledged by Joseph Schumpeter wayback in 1911. He argued that functions performed by financial institutions such as mobilizing savings of the surplus units of an economy, risk measuring and management activities, complicated transactions being performed by these institutions and evaluationof the business projects all together increase the pace of economic growth (King &Levine, 1993, p. 717).

Hicks also argued in his theory of economic development that financial institutions play an important role in the growth of an economy (Samules,1993). Goldsmith also argued that size of a financial system plays a pivotal role in economic development and proved it trough his research on a sample of 35 different countries that they show positive correlation among each other. Besides those researchers who are in favor of the positive correlation between financial sector of aneconomy and its economic development, there are few researchers who contradict andoppose them.

Various literatures written by academicians also assert that profitability is the bottom line or ultimate performance result showing the net effects of bank policies and activities in a financial year. As a matter of fact, numerous factors such as inflation, accounting policy, high level of competition, etc., may have an influence on a bank's profitability. In due course,

wide varieties of ratios are discussed and different measures of profitability of commercial banks have been suggested.

For instance, Net Interest Margin (NIM), Return on Assets (ROA), and Return on Equity (ROE) were identified by Ahmed (2003) are in use in the literature since then. Profitability measures according to Akinola (2008) include Profit before Tax (PBT), Profit after Tax (PAT), ROE, Rate of Return on Capital (ROC) and ROA. Some other, studies on profitability have also used returns on average bank assets (ROAA), net interest margin (NIM) and return on average equity (ROAE) to measure profitability according to Francis (2013). However, owing to divergent views among scholars on the superiority of one indicator over the others as measures of profitability, there is no clear cut stand as to which best fits. Nonetheless, most literatures confine the profitability measure only to the three widely used measures namely Return on Assets (ROA), Return on Equity (ROE), and Net Interest Margin (NIM). Accordingly, some scholars select either of the three and some others preach to select three of them at once.

In line with the above discussion, this particular study will uses ROA and ROE as a measure of profitability for banks under this study.

2.5.What is the CAMELS rating system?

The Uniform Financial Institution Rating system(UFIRS), commonly referred to as the acronym CAMEL rating, was adopted by the Federal Financial Institution Examination Council on November 13 1979, and then adopted by the National Credit Union Administration inOctober 1987. It has proven to be an effective internal supervisory tool for evaluating the soundness of a financial firm, on the basis of identifying those institutions requiring special attention or concern. (The United States Uniform Financial Institutions Rating System 1997, p.1).

Since1996, out of the desire to stronger focus on risk, to the five components was addedthesixthcomponent"S",sothattheCAMELapproachbecametheCAMELSapproach,where" S"referstothesensitivitytomarketrisk. All six parameters are relevant indicators for assessing the financial soundness of a bank, being recommended also bytheIMF and the World Bank (2005), grouping, moreover, the financial soundnessindicatorsofthebanking sector, according to the six key areas of potential exposure, in the CAMELS approach.

Barr et al. (2002 p.19) states that "CAMEL rating has become a concise and indispensable tool for examiners and regulators". This rating ensures a bank's healthy conditions by reviewing different aspects of a bank based on variety of information sources such as financial statement, funding sources, macroeconomic data, budget and cash flow. Nevertheless, Hirtle and Lopez (1999, p. 4) stress that the bank's CAMEL rating is highly confidential, and only exposed to the bank's senior management for the purpose of projecting the business strategies, and to appropriate supervisory staff. Its rating is never made publicly available, even on a lagged basis. CAMELS are an acronym for six components of bank safety and soundness; capital adequacy, asset quality, management quality, earning ability, liquidity management and sensitivity to market risk

2.5.1 Capital Adequacy

Almost every aspect of banking is either directly or indirectly influenced by the availability and cost of capital. Capital is one of the key factors to be considered when safety and soundness of a particular bank is assessed. An adequate capital base serves as a safety net for a variety of risks to which an institution is exposed in the course of its business. Capital absorbs possible losses and thus provides a basis for maintaining depositor confidence in a bank. Capital also is the ultimate determinant of a bank's lending capacity.

Capital adequacy reflects the overall financial condition of the banks and also the ability of management to meet the need for additional capital. Consequently, the capital of a bank should have three important characteristics:

It must be permanent

It must not impose mandatory fixed charges against earnings

It must allow for legal subordination to the rights of depositors and other creditors.

Capital adequacy is the capital expected to maintain balance with the risks exposure of the financial institution such as credit risk, market risk and operational risk, in order toabsorb the potential losses and protect the financial institution's debt holder. "Meeting the statutory minimum capital requirement is the key factor in deciding the capital adequacy, and maintaining an adequate level of capital is a critical element" (The United States. Uniform Financial Institutions Rating System,1997).

Karlyn (1984) defines the capital adequacy in terms of capital-deposit ratio because the primary risk is depository risk derived from the sudden and considerably large scale of deposit withdrawals. In 1930, FDIC created a new capital model as capital-asset ratios since the default on loans came to expose the greatest risk instead of deposit withdrawals. To gauge the capital adequacy, bank supervisors currently use the capital risk asset ratio. The adequacy of capital is examined based upon the two most important measures such as Capital Adequacy Ratio (CAR) or Capital to Risk-weighted Assets ratio, and the ratio of capital to assets.

This capital ratio is required to meet a minimum of 8% set by the Bank for International Settlement (BIS).However, it is important to note that in some countries the required minimum capital may vary depending on the local regulators; and the bank might like to have as high a capital ratio as possible.

Tier 1 capital (core capital) is shareholder equity capital. Tier 2 capitals (supplementary capital) are the bank's loan loss reserves plus subordinated debt which consists of bonds sold to raise funds. Risk-weighted assets are the weighted total of each class of assets and off-balance sheet asset exposures, with weights related to the risk associated with each type of assets.

Rating of Capital Adequacy

Each of components in the CAMEL model is scored from 1 to 5. In the context of capital adequacy, a rating of 1 indicates a strong capital level relative to the financial institution's risk. Meanwhile, the rating of 5 indicates a critical deficient level of capital in which immediate assistance from shareholders or external resources is required

2.5.2. Asset Quality

The asset side of a bank's balance sheet is another bank specific variable that affects the profitability of a bank. The bank asset includes various asset components such as cash, deposit with other banks including reserves at the NBE (In Ethiopian case), loans, investments, fixed assets etc.; there seems an agreement to focus on the quality of the loan portfolio. More often bank loan of a bank is the major asset that generates the major share of the banks income. Hence the quality of loan portfolio determines the profitability of banks. According to Dang (2011), the loan portfolio quality has a direct bearing on a bank profitability.

According to Grier (2007), "poor asset quality is the major cause of most bank failures".A most important asset category is the loan portfolio; the greatest risk facing the bankis the risk of loan losses derived from the delinquent loans. The credit analyst should carry out the asset quality assessment by performing the credit risk management and evaluating the quality of loan portfolio using trend analysis and peer comparison. Measuring the asset quality is difficult because it is mostly derived from the analyst's subjectivity.

The quality of assets is an important parameter to examine the degree of financial strength. Moreover, the foremost objective to measure the asset quality is to ascertain the composition of non-performing assets (NPAs) as percentage of the total assets. Kumar et al., (2012) have used Net NPA to Net Advances ratio to indicate the extent of Non-Performing Asset in the portfolios of the banks and the extent of damage this particular asset class can have on the financial performance. Hence, they believed such dimension of CAMEL analysis conveys the portfolio risk the bank is subjected to and the effects it could have in the overall performance of the bank.

Non- Performing loans to Gross Loans, Allowance for Doubtful loans to Loans outstanding, Gross NPAs to Net Advances ratio, Net NPAs to Net Advances ratio, Total Investments to Total Assets ratio, Net NPAs to Total Assets ratio, and Percentage Change in Net NPAs are some of the ratios considered to assess asset quality according to literatures.

2.5.3. Management Efficiency

Management Efficiency is basically the capability of the board of directors and management, to identify, measure, and control the risks of an institution's activities and to ensure the safe, sound, and efficient operation in compliance with applicable laws and regulations (Uniform Financial Institutions Rating System 1997, p. 6).

Tesfaye (2014), explained that management efficiency means adherence with set norms, ability to plan and respond to changing environment, leadership and administrative capability of the bank. Hence, the management efficiency of a particular bank could be obtained by dividing Non-interest Expense to Gross Expense. He also asserted that measurement of management efficiency requires getting deep into evaluation of the management systems, organizational discipline, control systems, quality of staff, and others in his study. Moreover, he pin pointed that no single quantitative measure of management performance is set in the Ethiopian context.

As per Misra&Aspal (2013) management efficiency can be measured by dividing Total Advances to Total Deposits, Interest Income over total assets, Profit per Employee (dividing profit after tax earned with the total number of employees) , Business per employee (It is arrived by dividing the total business by total number of employees , business in this context means the sum of total deposits and total advances in a particular year), Return on Equity (profit after tax is expressed as a percentage of equity).

The management has clear strategies and goals in directing the bank's domestic and international business, and monitors the collection of financial ratios consistent with management strategies. The top management with good quality and experience has preferably excellent reputation in the local communication.

Management relates to the competency of the bank's managers, using their expertise's to make subjective judgments, create a strategic vision, and other relevant qualities. Management is the key variable which determines a banks' success. The evaluation of the management is the hardest one to be measured and it is the most unpredictable (Golin, 2001). There are two ratios representing the management in the previous studies, operating costs to net operating income ratio, and operating expenses to assets ratio.

The operating costs to net operating income ratio indicate the percentage of a bank'sincome that is being used to pay operational costs. It offers information on themanagement efficiency regarding costs relative to the income it generates. Olweny(2011) adopted the ratio of operating costs to net operating income to indicate theoperating efficiency for the commercial banks in Kenya, and he found that theoperational costs inefficiency leads to poor profitability.

The operating expenses to assets ratio indicate expenses in relation to the size of aback. It was similar with cost to income ratio but it was not affected by the changes in interest. Atikogullari (2009) observed the management quality situation of the northern Cyprus banking sector for the period of 2001 to 2007 by using operating expenses to assets ratio.

2.5.4. Earning Quality

This rating reflects not only the quantity and trend in earning, but also the factors that may affect the sustainability of earnings. Inadequate management may result in loan losses and in return require higher loan allowance or pose high level of market risks. The future

performance in earning should be given equal or greater value than past andpresent performance. (Uniform Financial Institutions Rating System 1997, p.7).

In accordance with Grier (2007)'s opinion, a consistent profit not only builds the public confidence in the bank but absorbs loan losses and provides sufficient provisions. It is also necessary for a balanced financial structure and helps provide shareholder reward. Thus consistently healthy earnings are essential to the sustainability of banking institutions. Profitability ratios measure the ability of a company to generate profits from revenue and assets. There are requirements that are used as to evaluate Earning like:

Majority of earnings is annuity in nature (low volatility).The growth trend of the past years is consistent with or better than industry norm and there are multiple sources of income (both interest and non-interest income).

The following ratio's can be considered in the dimension of earning ability of banks and it can be indicated by dividing Operating Profit to average working funds, Operating Profit to Total Assets, Net profit to Total Assets or Average Assets, Interest Income to Total Income, Non-Interest Income to Total Income, and Spread or Net Interest Margin (NIM) to Total Assets.

2.5.5. Liquidity

Liquidity ratio measures the bank's ability to meet its current obligation. Banks make money by mobilizing deposit and providing fund for creditors, so the bank needs to be conscious to meet the payment when depositors demands for. The inability of the bank to meet the demand of depositor leads to the liquidity risk. Therefore, the fund management practices should ensure an

institution is able to maintain a level of liquidity sufficient to meet its financial obligations in atimely manner; and capable of quickly liquidating assets with minimal loss(Mulalem,

2015).

There are variations among scholars with regard the measurement ratios. The most common financial ratios that reflect the liquidity position of a bank according to Samad (2004) are customer deposit to total assets and total loans to customer deposits. Other scholars use different financial ratio's to measure liquidity. For Instance, Ilhomovich (2009) used cash to deposit ratio to measure the liquidity level of banks in Malaysia.

According to literatures, liquidity of a particular bank can be measured in a lot of ways. Amongst dividing Liquid Assets to Total Assets, Liquid Assets to Total Deposits, Liquid Assets to Demand Deposits, Advances to Deposits or Total Loans to Total Customer Deposits and Approved Securities to Total Assets can indicate the desired result.

In the Ethiopian context there seems clear measure of the liquidity: the liquid asset to deposit ratio, as it can be seen from directive no., SBB /57/2014 of the National Bank of Ethiopia, the minimum liquid asset of any domestic bank is set to be not less than 15% of the Bank's net current liability. Moreover, directive no., SBB /55/2013dictates banks to hold 5% of their liquid asset in primary reserve assets. (NBE; Tesfaye, 2014).

2.5.6 Sensitivity to Market risks

Sensitivity is expressed as the risk which occurs due to alteration in market conditions such changes could adversely impact earnings and/or capital. Market risk includes exposures associated with changes in interest rates, foreign exchange rates, commodity prices, equity prices, etc.While all of these items are important , primary risk in most banks is interest rate risk.

Sensitivity to market risks is evaluated through the measurement of the way in which the market prices, especially the interest rates, the exchange rates and the equity prices negatively influence the bank's earnings and capital (Sarker, 2006, p. 12). Although the banking activity is significantly influenced by the variation of the financial assets prices, a series of studies do not consider this to be the sixth component of the CAMELS especially as a result of the measurement difficulties based on the accounting and financial data.

The sensitivity of market risk is assessed by banks through changes in interest rate, foreign exchange rates and equity prices. The changes in these variables affects earning ability of the bank. So, sensitivity to market risk expresses how adversely the bank is affected due to such changes .Market risk is the effect of trading activities ,non-trading activities and foreign exchange operation.

2.6 The Significance of CAMELS Ratings on the banks Supervision

Providing a general framework in evaluating overall performance of banks is of great importance due to the increasing integration of global financial markets. CAMEL model reflects excellently the conditions and performances of banks over years as well as enriches the on-site and off-site examination to bring better assessments towards banks' conditions. Its

purpose is to provide an accurate and consistent evaluation of a bank's financial condition and operations in the areas such as capital, asset quality, management, earning ability and liquidity. Muhammad (2009) claims that the strength of these factors would determine the overall strength of the bank. The quality of each component further underlines the inner strength and how far it can take care of itself against the market risks.

Additionally, it serves the purpose of summarizing the significant compliance information needed for the regulators. It also assists them to ensure the degree of supervisory concern and type of supervisory response to generate timely warnings to minimize the adverse effects on banks. In the financial crisis of 2008, this rating was being used by American government to respond to the crisis to help decide which banks needed the special help and which not as part of its capitalization program authorized by the Emergency Economic Stabilization Act of 2008.

The main endeavor of CAMEL system is to detect problems before they manifest and/or the prime objective of the CAMEL model of rating banking institutions is to catch up the comparative performances of various banks (Bodla and Verma, 2006). Joshi and Joshi (2012) also explained CAMEL as a ratio-based model for evaluating the performances of banks.

2.7 Fundamentals of the CAMEL rating system

This section outlines the definition, fundamentals and drawbacks of the CAMEL rating system and the five components. This framework follows both U.S. regulation and ' CAMEL Approach to Bank Analysis.

2.7.1 What is the CAMEL rating system?

The Uniform Financial Institution Rating system, commonly referred to the acronym CAMEL rating, was adopted by the Federal Financial Institution Examination Council on November 13 1979, and then adopted by the National Credit Union Administration in October 1987. It has proven to be an effective internal supervisory tool for evaluating the soundness of a financial firm, on the basis of identifying those institutions requiring special attention or concern. (The United States. Uniform Financial Institutions Rating System 1997, p.1). Barr et al. (2002 p.19) states that "CAMEL rating has become a concise and indispensable tool for examiners and regulators". This rating ensures a bank's healthy conditions by reviewing different aspects of a bank based on variety of information sources such as financial statement, funding sources, macroeconomic data, budget and cash flow. Nevertheless, Hirtle and Lopez (1999, p. 4) stress that the bank's CAMEL rating is highly

confidential, and only exposed to the bank's senior management for the purpose of projecting the business strategies, and to appropriate supervisory staff. Its rating is never made publicly available, even on a lagged basis. CAMEL is an acronym for five components of bank safety and soundness:

Namely Capital Adequacy, Asset Quality, Management Efficiency, Earning Ability and Liquidity. A sixths component relating to sensitivity to market risk has been added to the CAMEL rating to make the rating system more risk-focused, each of the component factors is rated on a scale of 1 (best) to 5 (worst), A Composite rating is assigned as an abridgement of the component rating and is taken as the prime indicator of a bank`s current financial condition.

The composite rating ranges between 1 (best) and 5 (worst) and also involves a certain amount of subjectivity based on the examiners` overall assessment of the initiation in view of the individual component assessments.

Composite and component ratings are assigned based on a 5 to 1 numerical scale. A 5 indicates the highest rating, strongest performance and risk management processes, and least degree of supervisory concern, while a 1 indicates the lowest rating, weakest performance, inadequate risk management practices and, therefore, the highest degree of supervisory concern. The composite rating generally bears a close relationship to the component ratings assigned. However, the composite rating is not derived by computing an arithmetic average of the component ratings. Each component rating is based on a qualitative analysis, as well as quantitative assessment, whenever applicable, of the factors comprising that component and its interrelationship with the other components When assigning a composite rating, some components may be given more weight than others depending on the situation at the institution. In general, assignment of a composite rating may incorporate any factor that bears significantly on the overall condition and soundness of the institution.

The ability of management to respond to changing circumstances and to address the risks that may arise from changing business conditions, or the initiation of new activities or products, is an important factor in evaluating an institution's overall risk profile and the level of supervisory attention warranted. For this reason, the management component is given special consideration when assigning a composite rating (Trautmann, 2006).

2.7.2 Composite ratings.

The rating scale ranges from 1 to 5, with a rating of 1 indicating: the strongest performance and risk management practices relative to the institution's size, complexity, and risk profile; and the level of least supervisory concern. A 5 rating indicates: the most critically deficient level of performance; inadequate risk management practices relative to the institution's size, complexity, and risk profile; and the greatest supervisory concern. The composite ratings are defined as follows:

Composite rating 1.

Composite rating "1" denotes strong position of the bank. Assigning of this rate shows the soundness and strongest performance of the bank in all aspects, and usually given to the banks who are rated 1 or 2 in almost all components. Management and board of directors are strong enough to handle weaknesses easily and can control risk associated with the business activities and to deal with complex situations. Fundamental risk management practices of the bank are strong enough and minimum level of supervisory is needed for the bank (Trumann, 2006, p.45).

Composite 2

Composite rating "2" is usually given to fundamentally and financially strong banks and usually have component rating not more than 3. At this position banks are stable and have the capability to hold out the economic depression. Management and board of directors have good enough hold to rectify the moderate weakness of the bank at this stage. Risk management practices of the bank are not strong enough but are at satisfactory level and supervision is required to guide the bank towards strong position (Trautmann, 2006, p.46

Composite 3

Composite rating "3" shows that the bank has weaknesses in different component areas. Proper concentration is required at this stage and if it is not provided it may lead the bank towards liquidity or bankruptcy. More than 2 rating components of the banks are above 3 rating. Management of the bank does not have the ability to control the situation and to find out the way to guide the banks out of the weaknesses. There is evidence of significant noncompliance of the bank with regulatory requirements. Risk management performance is less satisfactory, such bank require more than normal supervision from regulatory authorities. Proper guidance from the regulatory authorities will help the management to identify the

weaknesses and guide towards improved performance. Bankruptcy is unlikely but overall financial position of the bank need proper supervision (Trautmann, 2006, p.47).

Composite 4

Composite rating "4" of a bank under examination shows risky and unstable performance of the bank. Unsatisfactory performance of banks is mostly because of managerial or financial insufficiencies. At this stage management of the bank and its board of directors are unable to take hold on flaws and weaknesses to resolve the problem. Most of it components ratings are above three and 1 or 2 of them are in 5 as well. The violation of Law and regulations is on rise and risk management practices are not acceptable at this stage. There is a need of corrective action and proper supervision and if an immediate supervision action is not taken the result may be solvency of the bank (Trautmann, 2006, p.48).

Composite 5

Composite rating "5" indicate extremely unsound, risky and unstable performance of the bank. Usually risk management practices of the bank are insufficient. Management and board of directors are totally failed to take control on weaknesses. Most of its components are rated 4 and 5 and usually have negative earnings. At this stage continues supervision is required from the regulators and financial assistance from outside is much needed to avoid the highly probable bank failure (Trautmann, 2006, p.49).

2.8. Empirical Evidence.

2.8.1 Previous Studies (International level)

Jie Liu (2011) examines the impact of independent variables from CAMEL model on bank performance in China's banking sector. The independent variables from CAMEL model include: capital adequacy, asset quality, management, earning and liquidity. The sample size for the research was the 13 Chinese banks listed in Shanghai Stock Exchange and Shenzhen Stock Exchange from 2008 to 2011. Jie Liu adopted fixed effects multiple linear regression model in his study to measure the relationship between internal determinants from CAMEL model and bank performance. The findings of this research show that return on assets can be influenced by shareholders' riskweightedcapital adequacy ratio, NPL to total loans ratio, costs to income ratio, net interest rate margins, and loans to deposits ratio. Meanwhile, this study indicates that return on equity can be influenced by costs to income ratio, operating expenses to assets ratio, and Loans to deposits ratio.

Maryam Azizi and YusefAhadiSarkani (2014) review the financial performance ofMellat Bank using CAMEL model and each of the model dimensions examined using trend analysis method and both mean and standard deviation statistics. In the process they determined all the model criteria had an ascending trend in the period understudy. In the inferential statistics section, again the relationship between model variables and the financial performance of Mellat Bank was studied and examined using two linear and multiple regressions as well as OLS method. Results of the study indicate that there is a positive significant relationship between the indices of liquidity, quality of management and earnings with financial performance. Yet, no relationship was seen between capital adequacy and assets quality with bank financial performance and multiple regression test showed only a positive significant relationship with financial performance in management quality section. As a result, Mellat Bank has better financial performance in management quality section.

Olweny and Shipho (2011) have tried to conduct to determine the effects of bank specific factors: capital adequacy, Asset quality, operational cost efficiency, and income diversification on the profitability of commercial banks in Kenya. Moreover, they have tried to analyze and evaluated the effects of market structure factors such as foreign ownership and market concentration in the profitability of commercial banks in Kenya. They have adopted an explanatory approach by using panel data research design and annual financial statements of 38 Kenyan commercial banks from 2002 to 2008 were obtained for the purpose of the study from CBK and Banking survey 2009. The data was analyzed using multiple linear regression method.

Hence, they have found that all the bank specific factors had a statistically significant impact on profitability, while none of the market factors had a significant impact. Their study recommends policies that would encourage revenue diversification, reduce operational costs, minimize credit risk and encourage banks to minimize their liquidity holdings.

The effects of bank capital, bank size, expense management, interest income and the economic condition of on bank's profitability in Nigeria has been investigated by Obamuyi (2013). The fixed effects regression model was employed on a panel data obtained from the financial statements of 20 banks from 2006 to 2012. The results indicate that improved bank capital and interest income, as well as efficient expense management and favorable economic condition, contribute to higher banks' performance and growth in Nigeria.

2.8.2Review of Empirical Evidences in Ethiopia

In the Ethiopian case, the numbers of researches conducted to examine the determinants of profitability in Ethiopian commercial banks are very limited and scanty. However, the researcher has found it worthy to mention some from the very few and more recently conducted studies:

Mulalem(2015) has studied the financial performance of 14 commercial banks using CAMEL approach for the period 2010 -2014. The finding of his study showed that Wegagen bank stood at first position followed by Bunna International Bank and Lion International Bank while Construction and Business Bank secured the least position. In addition to descriptive he has used fixed effect regression model to investigate the impact of CAMELS factors on financial performance i.e ROA and ROE, were the result shows that capital adequacy, Asset Quality and Management efficiency have negative relation whereas earning and liquidity shows positive relationship with both profitability measures with strong statistically significance except Capital Adequacy which is insignificant for ROA whereas Asset quality for ROE.

Hamduetal (2015) assessed the soundness of selected commercial banks by referring audited annual reports from the year 2003-2013. The study result shows CAMEL framework is the best fit measurement for Ethiopian Banks and it give a comprehensive result which is very helpful for the governor to set a well determined policy and procedure.

Dakito (2015) investigated the performance of 8 commercial banks for the period of 2000-13 using CAMEL approach by descriptive and econometric analyses. The finding showed that NIB's overall performance was good. Furthermore, he has measured the relationship between capital adequacy and financial performance using GLS regression model. The regression results exhibited the existence of positive relationship between capital adequacy and bank performance.

Minyahil (2013) measured the Performance of seven Commercial Banks of Ethiopia over the period 2004/5-2010/11. The result of the study showed that, during the study period, the performance of Commercial banks in Ethiopia mainly changes in accordance with NBE directives.

Therefore as can be seen from the reviewed literature above internationally as well as country level ,the application of the CAMEL components to ROA, ROE and NIM for evaluating the

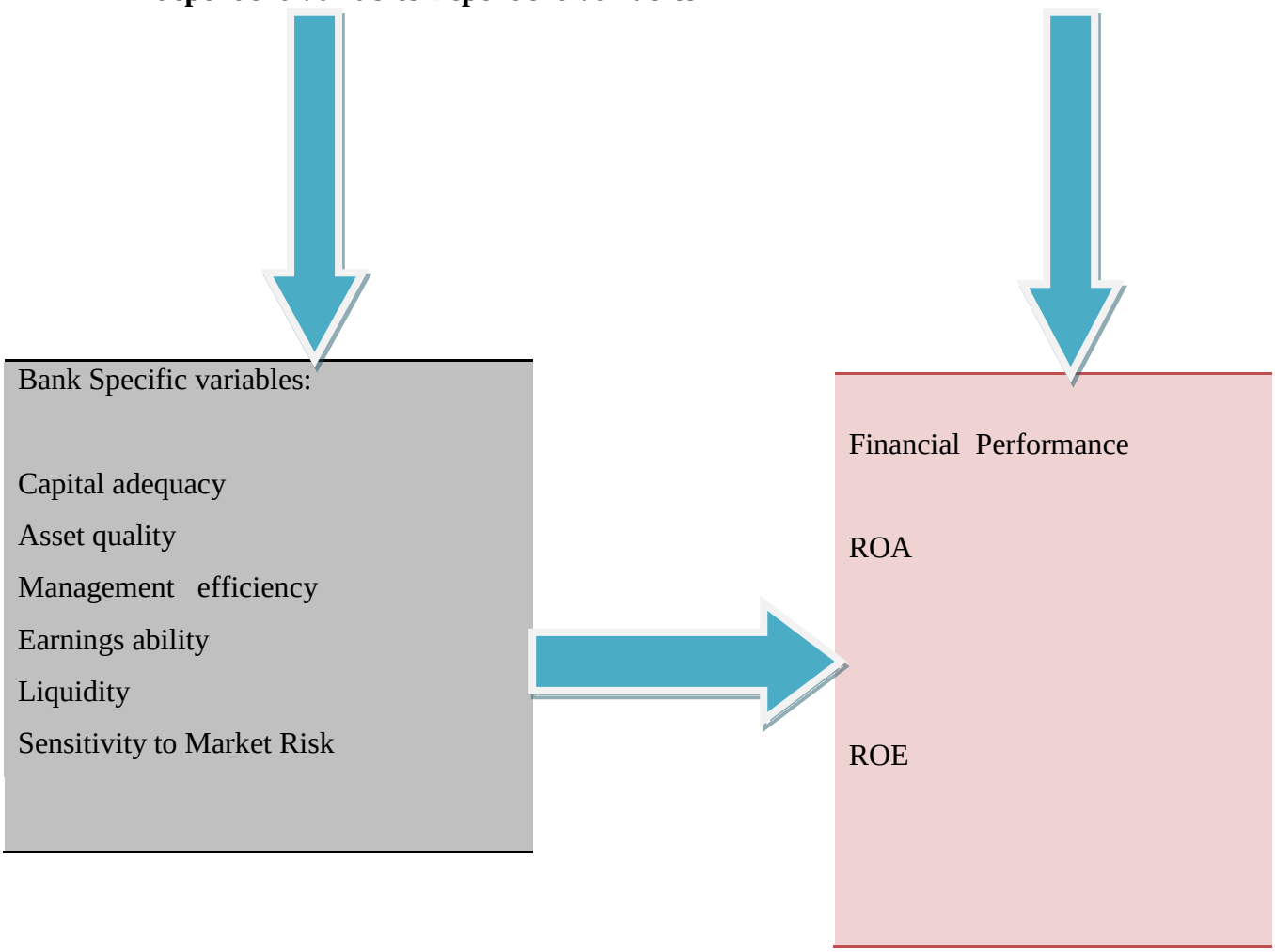
financial condition and performance of commercial banks portrayed inconsistent results. However, Muhammad (2009) claims that the composite CAMEL rating has been used as a precursor for reflecting accurate and consistent evaluations of commercial bank's inner strength and exposure to market risks. Dang (2011:27) states that this rating was used by the American government during the financial crisis of 2008 for identifying which banks need special help.

Therefore, this study was carried out periodic financial measures and evaluates the financial performance of the Ethiopian Private commercial banks by employing the composite CAMELS ratings for a period of 8 years (i.e. 2009 – 2017). It helps examine how strong or weak they are and generate a composite index to stakeholders such as management, owners, regulators and supervisors for the timely warning to minimize adverse effects on banks.

2.8. Conceptual Framework

The relationship between dependent variable (bank performance) and independent variables (bank specific) variables are here as follows

Independent Variables Dependent Variables



CHAPTER THREE:

METHEDOLOGY

Methodology describes the research way or path to be followed, the instrument to be used, universe and sample of the study for the data to be collected, the tools of analysis used and pattern of deducing conclusions. For the purpose of the present study, the research instrument used was the CAMELS model which is the current innovation in the area of financial performance evaluation of banks.

3.1. Research Design

In this particular study, a sort of explanatory research design was used to explain the relationship between bank's performance and components of CAMELS by deriving the quantitative data from the annual report of banks. The study uses a descriptive financial analysis to express, measure, compare and classify the financial performance of Ethiopian private Commercial Banks and also uses explanatory research design to explain the cause and effect relationship between independent variables and dependent variables.

3.2 Target Population and Sample Design.

The Target population of the study were all private commercial banks which was registered by NBE and operating banking businesses in Ethiopia. The researcher uses non probability purposive sampling toselect nine banks based on the years of their establishment (i.e. banks started the operation before 2009) and easily accessible to the annual report. The banks which were established after the year 2009 are excluded from the study because of the study covered a 8 years data starting from 2010 up to 2017 and also reliable for this study in connection with their financial reports, and those banks that does not fulfill the needed requirement are excluded from this study .The banks which have negative ROA and ROE on their financial statement reports were excluded from this study due to the outlier effect on normality of this study since some banks has negative or smallest amount of Net Income After Tax on their income statement. This indicates that reasonable time is necessary to look the dynamics of banking business.

3.3 Data Sources

Since the study was to conduct the performance of private commercial banks of Ethiopia byusingthe CAMELS approach, which is highly depend on the data from audited financial reports. The study wasonlyrelied on the secondary sources of data. The data from the sample banks was collected from published financial statements of the respective private commercial banks &respective websites of the banks to be investigated, and different bulletins and publications of the NBE. In addition to annual report; different documents and literatures, records, was also summarized and reviewed in order to achieve the objective of the study conducted.

3.4 Method of Data Analysis:

The collected data was analyzed by using both descriptive and inferential statistics tools. The study was implemented descriptive statistical tools like mean, percentage, median and ratios. Besidespanel regressions of OLS method was used to estimate the relationship between profitability and its determinants, correlations and normality of the variables have also being estimated to look the relationship among dependent and independent variables. The financial data's was also be analyzed by using of the stata 14 software.

3.5Model Specifications

The performance indicators exploited for this study are Return on Assets (ROA) and Return on Equity (ROE);while, the major determinants (independent variables) considered were Capital Adequacy, Asset Quality, Management Efficiency, Earnings Ability, Liquidity and sensitivity to market risks.This study was alsouseda sort of panel data regression model to analyze the collected data. Panel data is a cluster of cross section and time series observations.

Therefore, the following equations indicate the OLS model of the study with respect to two profitability indicators of ROA and ROE.

Model 1 is used to test the relationship between independent variable and ROA:

$$ROA_{it}=\beta_o+\beta_1 CAR_{it}+\beta_2 AQ_{it}+\beta_3 MGT_{it}+\beta_4 ERN_{it}+\beta_5 LIQ_{it}+\beta_6 SEN_{it}+\epsilon$$

Model 2 is used to test the relationship between independent variable and ROE

$$ROE_{it}=\beta_o+\beta_1 CAR_{it}+\beta_2 AQ_{it}+\beta_3 MGT_{it}+\beta_4 ERN_{it}+\beta_5 LIQ_{it}+\beta_6 SEN_{it}+\epsilon$$

Subscript i refers to firm i, and subscript t refers to year t.

Where

ROA=Return on Asset

ROE=Return on Equity

CAR=Capital Adequacy ratio

AQ=Asset Quality Ratio

MGT=Management efficiency ratio

ERN=Earnings ratio

LIQ=Liquidity ratio

SEN=Sensitivity to market ratio

3.6 Model Assumptions:

As stated in Brooks (2008) there are basic assumptions required to show that the estimation technique; OLS, had a number of needed properties, to this end diagnostic tests were performed to ensure whether the assumptions of the CLRM are violated or not in the model.

The following diagnostic tests were carried out in order to assure the data is in convention with the basic assumptions of classical linear regression model. Normality test: (To check for normality of the data used) i.e., Shapiro Wilk test was employed in the study analysis.

Multicollinearity

To test the independence of the explanatory variables the study used a correlation matrix of independent variables. The problem of multicollinearity usually arises when certain explanatory variables are highly correlated. Usually, as noted by Hair et al. (2006) correlation coefficient below 0.9 may not cause serious muticollinearity problem. In the contrary to this, Kennedy (2008) argued that as any correlation coefficient above 0.7 could cause a serious multicollinearity problem leading to inefficient estimation and less consistent result.

Considering that Hair et al. (2006) is the most popular reference in multivariate analysis, this study uses their guideline for purpose of multicollinearity.

Auto correlation(To check whether there exists a serial relationship in the error terms)

Heteroscedasticity(To detect the problem of heteroscedasticity of disturbance terms)

3.7 Description and Measurement of Variables

3.7.1 Dependent Variable

In the literature, there are two major alternatives measures of profitability, namely ROAand ROE.ROA reflects the ability of banks management to generate profits from thebank's assets, although it may be biased due to off-balance-sheet activities. ROE showsthe return to shareholders on equity. All profitability measures which were included in the study are mentioned below;

Return on Asset (ROA)

The ROA reflects the ability of a bank's management to generate profits from the bank's assets. It shows the profits earned per birr of assets and indicates how effectively the bank's assets are managed to generate revenues, although it might be biased due to off-balance-sheet activities. Average assets were used in this study, in order to capture any differences that occurred in assets during the fiscal year. ROA can be calculated as:

$$\text{ROA}=\frac{Netprofitaftertax}{TotalAsset}$$

This is probably the most important single ratio in comparing the efficiency andoperating performance of banks as it indicates the returns generated from the assetsthat bank owns.

Return on Equity (ROE)

The Return on Equity measures the Profitability of equity funds invested in the bank. Itshows the profit earned per birr of capital invested. It regarded as a very important measure because it reflects the productivity of the ownership (or risk) capital employed in the bank. ROE can be computed by:

$$\text{ROE}=\frac{Netprofitaftertax}{TotalEquityCapital}$$

3.7.2 Independent Variable

The major independent variables (determinants) or factors of the CAMELS model were capital adequacy, asset quality, Management efficiency and liquidity status which shall be proxies by bank specific factors in relation to performance.

These variables can be measured by the following formulas:

Capital Adequacy: Availability of capital affects every aspect of banking either directly or indirectly. We can find a lot of ways to determine capital Adequacy ratio in the literature. Hence, total capital to total asset ratio (CAR) will be used for this particular study. (Dang, 2011)

$$= CapitalAdequacy\ (CA)\ = \frac{TotalCapital}{TotalAsset}$$

The ratio reflects the ability of a bank to withstand the un anticipated losses.

Asset quality: The asset side of a bank's balance sheet is another bank specific variable that affects the profitability of a bank. Moreover, the quality of assets is an important parameter to examine the degree of financial strength. Thus, Fixed Asset to Total Asset is considered.(Nazir, 2010; Dang, 2011; Ongore&Melaku, 2016) .

Asset Quality=$\frac{FixedAsset}{TotalAsset}$

Management Efficiency: It is one of the key factors that determine the bank profitability and it is also one of the complex subjects to capture the financial ratios. The ratio of Non-interest expense to Gross Expense was used.

Managerial Efficiency=$\frac{Non-InterestExpense}{GrossExpense}$

Earning Quality: It determines the profitability of a bank and explains its sustainability and growth. Interest income to total income ratio was applied to check the earning quality. (Misra&Aspal, 2013).

Earnings Ratio=$\frac{NetInterestIncome}{TotallAssets}$

Liquidity Management: Liquidity indicates the ability of the bank to meet its financial obligation. A lot of approaches are there in the literature to address liquidity ratio in banks, however, the ratio of Liquid Asset to total Deposits was applied in this particular study.

Liquidity Ratio= $\frac{LiquidAsset}{TotalDeposit}$

Sensitivity to Market Risks:

Although sensitivity to market risk is typically measured by rate sensitive assets divided by rate sensitive liabilities or by beta, it will be proxies by the risk weighted assets over total assets (RWTA) due to data unavailability. The riskweighting varies according to each asset's inherent potential for default and what the likely losses would beincaseofdefault(Jackson&Kronman,1979).

Sensitivity to market risk=$\frac{\boldsymbol{RiskWeightedAssets}}{\boldsymbol{TotalAssets}}$

CHAPTER FOUR

FINDINGS AND DISCUSSIONS

This chapter deals with the results and analysis of the findings, presents the result of the descriptive statistics of the variables, fulfillment of the classical linear regression model (CLRM) assumptions, the regression, and discusses the findings of the study.

4.1 Descriptive Analysis

The findings of the study are presented here under the following headings. Capital adequacy analysis, asset quality analysis, Management efficiency, earnings ability, liquidity and sensitivity to market risks

4.1.1 Capital Adequacy Ratings

Under this study Capital Adequacy Ratio was calculated by the use of Total Capital of the banks divided by the Total Assets .Regulatory banks in most countries determine and keep an eye on minimum CAR for Commercial Banks of the country. As per the National Bank of Ethiopia (NBE) directives, the Ethiopian Banks are required to maintain the Minimum CAR 8 percent of their risk weighted Assets.

Table 4.1 Capital Adequacy Ratio

S/N	Year	AIB	BOA	CBO	DB	LIB	NIB	OIB	UB	WB	SUM	AVG.
1	**2010**	11.83576	9.323762	10.68817	9.093438	17.73217	15.35056	18.95357	10.8129	18.31656	122.1069	**13.56743**
2	**2011**	12.93217	9.078864	9.831032	9.525388	19.51873	16.46126	15.0879	11.6672	16.59008	120.6926	**13.41029**
3	**2012**	13.49056	11.00297	11.36598	10.43316	17.93418	18.46306	15.70219	12.5382	19.21772	130.148	**14.46089**
4	**2013**	13.53502	10.93485	10.64412	10.35945	18.41822	18.21773	14.00075	12.0383	17.61073	125.7592	**13.97324**
5	**2014**	12.60909	13.559	14.83274	11.82771	17.37507	18.2777	12.16776	13.2639	19.07226	132.9852	**14.77614**
6	**2015**	12.9469	13.24706	12.30938	11.80708	14.03088	16.42488	10.33293	11.7419	17.60855	120.4496	**13.38329**
7	**2016**	12.88613	12.62428	11.48995	11.75033	13.17683	15.90584	11.68114	12.0006	17.33118	118.8463	**13.20514**
8	**2017**	11.10821	11.47023	8.559158	11.53221	13.20057	14.05376	10.22321	11.4853	16.01871	107.6514	**11.96126**
	Total	**101.3438**	**91.24101**	**89.72054**	**86.32876**	**131.3867**	**133.1548**	**108.1494**	**95.5483**	**141.7658**	**978.6392**	**108.7377**
	Avg.	**11.26043**	**10.13789**	**9.968949**	**9.592085**	**14.59852**	**14.79498**	**12.0166**	**10.61648**	**15.75176**	**108.7377**	**12.08196**
	Rank	5	7	8	9	3	2	4	6	1		

Source: Researcher's own computation

As it was shown in the above table, WB,UB and NIB were held from first up to third with the Average CAR of 15.75,14.79 and 14.6 respectively; while DB was sited on the last position with the Average CAR of 9.6 which is above the regulatory requirements. More over

the average Capital ratio for the study period were above the minimum requirement settled by the regulatory organ. The average Capital adequacy ratio for all banks for the stated period was 13.838 which was also above the regulatory requirement of the 8 percent of risk weighted Asset.

The result shows that WB,UB and NIB were at the better position to withstand the potential losses, whereas DB lacks of internal strength to with stand the potential losses if they suffer when compared to its competitors.

4.1.2 Asset Quality Analysis

Asset quality determines the healthiness of financial institutions against loss of value in asset as asset impairment risks the solvency of financial institutions. Management of the banks are usually concerned with the quality of their assets as they constitute most part of the bank's cost and play an important role in the profitability of a bank. Fixed Asset to Total Asset was used in this study as a proxy to calculate the Asset Quality of the private commercial banks. The ratio reflects the ability of a bank to withstand the unanticipated losses. It indicates how much fixed assets are hold by a company in comparison to total assets .The less the ratio the better the performance of a bank .

Table 4.2 Asset Quality Ratio

S/N	Year	AIB	BOA	CBO	DB	LIB	NIB	OIB	UB	WB	SUM	AVG.
1	**2010**	2.85872	1.219867	1.979281	1.334712	1.442645	1.210182	3.269889	0.723598	1.441467	15.48036	**1.72004**
2	**2011**	2.544806	1.18918	2.531281	1.324214	1.110331	1.055653	2.493403	0.758606	1.438474	14.44595	**1.605105**
3	**2012**	2.74	1.159741	2.360402	1.495762	0.910627	1.154228	2.882949	1.115678	3.702977	17.52236	**1.946929**
4	**2013**	3.205315	0.004423	3.729906	1.6149	0.98626	1.356088	2.653336	1.341826	3.470224	18.36228	**2.040253**
5	**2014**	3.17836	4.319894	1.793261	2.727159	1.341864	2.037641	1.848527	1.901045	0.309707	19.45746	**2.16194**
6	**2015**	3.797394	6.39708	1.719464	2.756167	1.116369	2.302536	1.917252	2.499856	4.675146	27.18126	**3.02014**
7	**2016**	3.92907	6.418106	2.321988	2.797676	1.131795	2.485866	4.487766	2.827873	4.573838	30.97398	**3.441553**
8	**2017**	2.845775	4.898796	2.18493	2.404054	1.016845	2.476866	3.220267	3.336998	4.540783	26.92531	**2.991701**
	Total	**25.09944**	**25.60709**	**18.62051**	**16.45464**	**9.056735**	**14.07906**	**22.77339**	**14.50548**	**24.15261**	**170.349**	**18.92766**
	Avg.	**2.788827**	**2.845232**	**2.068946**	**1.828294**	**1.006304**	**1.56434**	**2.530377**	**1.61172**	**2.683624**	**18.92766**	**2.103074**
	Rank	9	8	5	4	1	2	6	3	7		

Source: Researcher's own computation.

As it was observed from the above table the Lion International Bank was leading all the private commercial banks incorporated in the study with the Average Fixed Asset to Total asset of 1.01 % followed by Nib BankandUnitedBankwith the ratio of 1.56 % and 1.6 % respectively. While Awash International Bank and Bank of Abyssinia were located at the lowest position as indicated above and their asset quality was poor when compared to the others..

4.1.3 Management Efficiency

Management Efficiency is basically the capability of the board of directors and management, to identify, measure and control the risks of an institution's activities andto ensure the safe, sound and efficient operation in compliance with applicable laws and regulations.

The performance of Management capacity is usually qualitative and can be understood through the subjective evaluation of Management systems, organization culture and control mechanisms and so on. However, the capacity of the management of a bank can also be evaluated with the help of certain ratios of off-site evaluation of a bank. Such can include the ability of the management to deploy its resources, aggressively to maximize the income, utilize the facilities in the bank productively and reduce costs etc.

In this research the management efficiency is measured by Non-Interest Expense (Excluding provision loss) to Gross Expense. A bank has two major buckets of expenses: interest and noninterest expenses. Interest expenses are incurred from deposits, short-term and long-term loans and trading account liabilities. For a bank, an expense not associated with attracting and keeping depositor's funds are classified under non-interest expense. The non-interest expenses include almost all operating and overhead expenses such as salaries and employee benefits, unemployment tax, insurance, operation and maintenance of facilities, equipment, furniture, and vehicles.

This parameter is used to measure management's control over expenses. The more the ratio the less efficient the management is to control its expenses. Hence, better rank will be drawn if the ratio is minimal in contrast and worse will be the result if the ratio is higher in contrast. The lower this ratio indicates the management capability to control or minimize cost per unit of revenue generated is relatively better than their competitors.

Table: 4.3 Management Efficiency Ratio

S/N	Year	AIB	BOA	CBO	DB	LIB	NIB	OIB	UB	WB	SUM	AVG.
2	**2010**	53.87384	53.29963	70.4211	50.95826	67.55112	66.92914	74.08126	60.34245	69.4357	566.8925	**62.98806**
3	**2011**	50.41801	54.48196	65.29247	50.13521	65.73798	61.79533	66.23156	52.9762	71.91841	538.9871	**59.88746**
4	**2012**	50.88428	52.0252	63.9221	50.69878	65.07463	58.93829	66.25692	53.26688	64.30735	525.3744	**58.37494**
5	**2013**	56.6554	52.0252	73.39059	51.20033	61.87505	59.75121	73.65553	58.79376	65.40176	552.7488	**61.41654**
6	**2014**	56.47441	52.20658	75.19074	51.73016	65.57924	59.83861	70.17533	59.01374	65.52646	555.7353	**61.74837**
7	**2015**	55.62831	55.48832	81.54791	56.98951	74.22298	60.87088	71.42161	60.45348	66.67144	583.2944	**64.81049**
8	**2016**	57.46646	61.1691	77.92155	58.44337	72.219	58.2282	70.96145	57.75973	67.5153	581.6842	**64.63157**
9	**2017**	62.11918	64.20315	71.77968	62.17122	65.20246	58.09067	70.52568	58.29553	67.47471	579.8623	**64.42914**
	Total	**443.5199**	**444.8991**	**579.4662**	**432.3268**	**537.4625**	**484.4423**	**563.3093**	**460.9018**	**538.2511**	**4484.579**	**498.2866**
	Avg.	**49.27999**	**49.43324**	**64.38513**	**48.03632**	**59.71805**	**53.82693**	**62.58993**	**51.21131**	**59.80568**	**498.2866**	**55.36517**
	Rank	2	3	9	1	6	5	8	4	7		

Source :Researcher's own computation.

As shown in the table above Dashen Bank is located at the first position with the average ratio of 48.04 percent followed by Awash International Bank with the Average Percentage of 49.3; while the CBO &Oromia International Bank is held at the last position reflecting poor management quality when compared to the other Banks with the highest Average ratio of 64.39 & 62.59 percent respectively. Those banks are infant at that time as they are new to the banking industry as a result they incur only the cost of non-interest expense such as employee salary and benefit, operation and maintenance of facilities, equipment and materials.

4.1.4 Earnings Quality

The 'Earnings is a normal Parameter of measuring financial performance. The quality of earning represents the sustainability and growth of future earnings, value of abanks lucrativeness and its competency to maintain quality consistently. The Net Interest Income to Total Assetsare used to measure Earning Quality of the banks under study here under. The higher this ratio, the more the Earnings generated by the commercial banks under taken in this study.

Table 4.4 Earnings Quality Ratio

S/N	Year	AIB	BOA	CBO	DB	LIB	NIB	OIB	UB	WB	SUM	AVG.
2	**2010**	1.867969	2.142945	2.691709	1.898007	2.68318	2.957421	1.354944	2.488353	2.986957	21.07148	**2.341276**
3	**2011**	1.831149	2.862904	2.075109	1.899106	2.689716	3.001313	1.504177	2.511619	2.662905	21.038	**2.337555**
4	**2012**	3.214939	3.507927	3.073069	2.782523	3.068579	3.404404	2.404975	3.641724	3.61539	28.71353	**3.190392**
5	**2013**	3.550322	2.853445	2.615483	2.688421	3.84621	4.216396	3.377917	3.550749	3.974207	30.67315	**3.408128**
6	**2014**	3.063221	3.707677	4.371136	2.584728	3.740425	3.587606	3.660787	3.687113	3.820539	32.22323	**3.580359**
7	**2015**	3.446412	3.531306	4.92264	3.016199	3.759186	4.432526	3.780618	3.915028	4.101993	34.90591	**3.878434**
8	**2016**	3.85274	3.833424	5.597262	2.732405	4.404274	4.729793	4.667741	4.05431	4.210181	38.08213	**4.231348**
9	**2017**	3.98667	3.910839	4.402826	3.318797	4.764022	4.613075	3.572102	4.17411	4.192956	36.93539	**4.103933**
	Total	**24.81342**	**26.35047**	**29.74923**	**20.92018**	**28.95559**	**30.94253**	**24.32326**	**28.02301**	**29.56513**	**243.6428**	**27.07142**
	Avg.	**2.757047**	**2.92783**	**3.30547**	**2.324465**	**3.217288**	**3.438059**	**2.702584**	**3.113667**	**3.285014**	**27.07142**	**3.007936**
	Rank	7	6	2	9	4	1	8	5	3		

Source: Researcher's own computation

As it was presented in the above table, NIB was first in terms of Net Interest Income to Total Assets illustrated in this study with the ratio of 3.44 percent. CBO and WB was placed second and third position with the ratio of 3.3 and 3.29 percent respectively. While, DB and OIB were taken last position with the amount of 2.32 and 2.7 respectively. It shows how much net interest income generated for each birr total asset invested.

4.1.5 Liquidity Management

Liquidity for a bank is a crucial aspect which represents its ability to meet its financial obligations. It is of utmost important for a bank to maintain correct level of liquidity. Hence, Liquid Assets to Total Deposit was used as a proxy to calculate Liquidity of a bank under this particular study. This ratio measures the liquidity available to the depositors of a bank.

The higher theratio, the better the liquidity position of the banks when compared to their rival firms in the banking industry.

Table 4.5 Liquidity Ratio

S/N	Year	AIB	BOA	CBO	DB	LIB	NIB	OIB	UB	WB	SUM	AVG.
2	**2010**	66.20677	57.63938	62.07241	51.80472	72.77201	74.33819	76.5775	69.3089	77.38661	608.1065	**67.56739**
3	**2011**	52.2755	47.66723	61.45664	52.5768	70.3486	70.65907	55.67762	58.67709	69.51068	538.8492	**59.87214**
4	**2012**	34.33572	37.26097	44.18384	41.05488	59.83261	51.05547	52.29536	42.36261	48.46787	410.8493	**45.64992**
5	**2013**	28.47	23.20119	76.09979	38.23627	46.70446	33.88087	39.38454	25.57303	36.75396	348.3041	**38.70046**
6	**2014**	33.64657	30.18972	33.89686	37.00407	42.05103	24.18167	37.25829	38.00495	21.34064	297.5738	**33.06376**
7	**2015**	20.96058	56.42411	33.07508	27.90895	34.44694	18.39231	22.97386	23.07126	24.78683	262.0399	**29.11555**
8	**2016**	25.36924	22.76311	25.39859	30.18932	28.95386	23.97195	22.98054	22.38678	27.95741	229.9708	**25.55231**
9	**2017**	22.88419	16.6143	24.42404	18.91373	30.44283	19.99165	24.74489	19.30622	27.85215	205.174	**22.79711**
	Total	**284.1486**	**291.76**	**360.6072**	**297.6887**	**385.5523**	**316.4712**	**331.8926**	**298.6908**	**334.0561**	**2900.868**	**322.3186**
	Avg.	**31.57206**	**32.41778**	**40.06747**	**33.07653**	**42.83915**	**35.16346**	**36.87696**	**33.18787**	**37.11735**	**322.3186**	**35.81318**
	Rank	9	8	2	7	1	5	4	6	3		

Source: Researcher's own computation

As it was shown in the above table, LIB, OIB and WB were listed from first up to third with the average percentage of 42.84, 36.88 and 37.12 respectively. While, AIB was held at the last position with the average percentage of 38.7 followed by BOA whose average percentage of 39 percent during the study period .Therefore, AIB and BOA are less liquidity position when compared to the other banks which included in the study here.

4.1.6 Sensitivity to Market Risk

Sensitivity to Market risk is the risk which occurs due to alteration in market condition; such changes could adversely impact earnings and/or capital. Market risk includes exposures associated with changes in interest rates, foreign exchange rates, commodity prices, equity prices, etc.

Although sensitivity to market risk is typically measured by rate sensitive assets divided by rate sensitive liabilities or by beta, it will be peroxided by the risk weighted assets over total assets (RWTA) due to data unavailability .The risk weighting varies according to each asset's inherent potential for default and what the likely losses would be in case of default (Jackson &Kronman, 1979).

Table 4.6Sensitivity to Market Risk Ratio

S/N	Year	AIB	BOA	CBO	DB	LIB	NIB	OIB	UB	WB	SUM	AVG.
2	**2010**	64.35265	55.04256	53.82651	61.57268	49.66439	**52.00966**	48.4962	48.58235	52.45912	486.0061	**54.00068**
3	**2011**	65.60119	62.3555	53.61718	60.94238	51.08896	**52.4229**	59.1602	57.87678	52.46105	515.5261	**57.28068**
4	**2012**	72.09269	71.38068	67.94021	70.03983	60.66745	**67.30713**	62.9199	70.313	69.28878	611.9497	**67.99441**
5	**2013**	85.7867	81.28108	51.7436	72.04723	67.73952	**77.32739**	71.0163	80.79788	75.19044	662.9301	**73.6589**
6	**2014**	89.73999	76.52303	75.97817	72.60947	69.13929	**82.3691**	71.2039	74.41647	85.36708	697.3465	**77.48295**
7	**2015**	87.05551	54.77009	79.91011	79.06956	75.51538	**86.66816**	82.7118	82.21125	82.80295	710.7148	**78.96831**
8	**2016**	90.30476	81.97314	80.43719	77.39404	78.44621	**82.29284**	81.5125	84.09367	82.41256	738.8669	**82.09632**
9	**2017**	86.85378	87.00433	81.66956	86.16218	78.25139	**85.62711**	81.4452	86.45141	83.52151	756.9865	**84.10961**
	Total	**641.7873**	**570.3304**	**545.1225**	**579.8374**	**530.5126**	**586.0243**	**558.466**	**584.7428**	**583.5035**	5180.327	**575.5919**
	Avg.	**71.3097**	**63.37005**	**60.56917**	**64.42637**	**58.94584**	**65.11381**	**62.05178**	**64.97142**	**64.83372**	575.5919	**63.95465**
	Rank	9	4	2	5	1	**8**	3	7	6		

Source: Researcher's own computation

The higher this ratio means the more the banks are Sensitive to market risk when compared to the other competitors. Therefore, the bank with the big Average ratio was more sensitive to market risks measured by risk weighted Assets to total assets in this study.

As it was shown on the above table AIB was sited on the last position by 71.31 percent of Average Risk weighted Assets to Total Assets followed by Nib Bank, United Bank and Wogagen Bank with the Average rate of 65.11, 64.97 and 64.8percent respectively. But, Lion International Bank and cooperative Bank of Oromia are sited on the first position with the Average of 58.95and 60.57 percent respectively. Additionally, the Average Risk Weighted Assets to Total Assets ratios are increased from year to year 54 percent during the year 2010 and increased to around 82 percent in 2017 indicating the sensitivity to market risks are increasing from year to year dramatically.

Composite Rating

In order to evaluate the overall Ranking of Private Commercial Banks in Ethiopia, the composite rating has been calculated from the individual ranking of the banks for the period of 2010-2017 and results are shown in the table 4.7

On the basis of CAMELS model analysis, Lion International bank stood at first position followed by Nib International Bank while Awash International Bank and BOA settled on the last position. As it was depicted on the table below ranking of private commercial banking by composite rating is difficult since their results are nearest to each other. From this we can say that Ethiopian Private Commercial Banks has not big difference with each other as per the composite ratings of overall rankings of individual banks from Table 4.7 below.

Table 4.7 Composite Rating of CAMELS model

	Banks	C	A	M	E	L	S	Avg	Rank
1	AIB	5	9	2	7	9	9	6.83	9
2	BOA	7	8	3	6	8	4	6	8
3	CBO	8	5	9	2	2	2	4.67	4
4	DB	9	4	1	9	7	5	5.83	7
5	LIN	3	1	6	4	1	1	2.67	1
6	NIB	2	2	5	1	5	8	3.83	2
7	OIB	4	6	8	8	4	3	5.5	6
8	UB	6	3	4	5	6	7	5.17	5
9	WB	1	7	7	3	3	6	4.5	3

Source : Researcher's own computation

In order to assess the overall Ranking of private Commercial Banks in Ethiopia, the composite rating has been calculated from the individual ranking of the banks for the period of 2010-2017 and results shown in are in the table 4.7 above.

As shown from the table LIB was first based on the overall rankings of the individual banks followed by Nib International Bank and Wogagen Bank. While;AIB was the least performer based on the composite ratings'.

4.2 Descriptive statistics of variables

In this section descriptive statistics for the dependent variables; Return on Asset (ROA) and Return on Equity (ROE) and explanatory variables involved in the regression model and CAMELS are presented. Mean, maximum, minimum and standard deviation values are included in the table below. These figures give overall description about data used in the models.

As it can be realized from descriptive statistics table below Return on Equity & Return on Asset have a positive mean with the value of 22.92 and 3.03 respectively. There is greater variation in the data set of Return on Equity as compared to Return on Asset

This is because return per unit of birr capital employed has more difference than return on asset data set. This can be clearer when you see the maximum and minimum values i.e. ROE is 40.44 and 12.01 percent whereas ROA is 4.94 and 1.79 percent respectively.

Table 4.8 Descriptive Statistics for the study Variables

	Dependent Variable		Independent Variable					
	ROA	ROE	CAR	AQ	MGT	ERN	LIQ	SEN
Mean	3.036957	22.92116	13.59221	2.365958	62.28582	3.383928	40.28983	71.94898
Median	2.937251	21.64146	12.90915	2.312262	61.83519	3.540814	35.60045	74.80346
Standard Deviation	0.705573	6.479059	3.013764	1.321712	7.686359	0.868283	17.66137	12.2685
Minimum	1.798368	12.01529	8.559158	0.004423	50.13521	1.354944	16.6143	48.4962
Maximum	4.941177	40.44388	19.51873	6.418106	81.54791	5.597262	77.38661	90.30476
Sum	218.6609	1650.324	978.6392	170.349	4484.579	243.6428	2900.868	5180.327
Count	72	72	72	72	72	72	72	72

Source: Researcher's own computation

The mean (average) return on equity (ROE) per Birr investment in the private commercial banks of Ethiopia is 22.92 Percent whereas the average return per unit of asset employed in the banks is 3.03 percent.

The mean independent variable of Capital adequacy ratio, Asset quality, Management efficiency, Earnings Ability, liquidity and Sensitivity ratios have positive values with the amount of 13.59, 2.36, 62.29, 3.38,40.28 and 71.95 respectively. The mean value of capital adequacy ratio and Liquidity ratios are above the regulatory requirements of 8 percent and 15 percent set by the National Bank of Ethiopia and all private commercial banks are at the better position when we see the overall mean results.

4.3 Correlation Analysis between the Study Variables

The correlation between two variables measures the degree of linear association between them. If it is stated that y and x are correlated, it means that yandx are being treated in a completely symmetrical way. Thus, it is not implied that changes in x cause changes in y, or indeed that changes inycause changes in x.Rather, it is simply stated that there is evidence for a linear relationship between the two variables, and that movements in the two are on average related to an extent given by the correlation coefficient. Under this section the correlation between profitability measures; return on asset and return on equity and explanatory variables; capital adequacy, asset quality, managerial efficiency, earnings ability, liquidity and Sensitivity to Market risk have been presented and analyzed.

4.3.1 Correlation Analysis between Return on Asset and Explanatory variables.

The ROA reflects the ability of a bank's management to generate profits from the bank's assets and this profitability measure is correlated with other explanatory variables either positively or negatively.

The correlation analysis between profitability measures; return on asset and explanatory variables; capital adequacy, asset quality, managerial efficiency, earnings ability, liquidity and sensitivity to market risk was undertaken by the following tables:

Table 4.9 Correlation matrix of ROA

	ROA	CAR	AQT	MGT	ERN	LIQ	SEN
ROA	1.0000						
CAR	0.3298	1.0000					
AQT	-0.2039	-0.0233	1.0000				
MGT	-0.0652	0.2666	0.0434	1.0000			
ERN	-0.1084	0.1198	0.1888	0.3399	1.0000		
LIQ	0.3448	0.1995	-0.2818	0.0753	-0.6923	1.0000	
SEN	-0.2513	-0.1204	0.3067	-0.0528	0.6898	-0.9653	1.0000

Source: Stata results,2019

As it can be shown on the above table the Asset quality, management efficiency, earnings ability and sensitivity to the market risk of the private Ethiopian commercial banks ratio is negatively correlated with return on asset. This correlation indicating that the profitability measure return on asset moves in opposite direction with the predictor variables listed above. On the contrary the return on asset has positive correlation with capital adequacy ratio and Liquidity ratio which means the two variables go in the same direction with ROA.

4.3.2 Correlation Analysis between Return on Equity and Explanatory variables.

Return on Equity (ROE), the net income per birr of equity capital, which is more concerned about how much the bank owners is earning on their equity investment. The correlation analysis was done between profitability measures; return on equity and explanatory variables; capital adequacy, asset quality, managerial efficiency, earning ability, liquidity and sensitivity to market risk.

\

Table 4.10 Correlation Matrix: ROE

	ROE	CAR	AQ	MGT	ERN	LIQ	SEN
ROE	1.0000						
CAR	-0.4604	1.0000					
AQ	-0.1868	-0.0233	1.0000				
MGT	-0.3602	0.2666	0.0434	1.0000			
ERN	-0.2505	0.1198	0.1888	0.3399	1.0000		
LIQ	0.1783	0.1995	-0.2818	0.0753	-0.6923	1.0000	
SEN	-0.1649	-0.1204	0.3067	-0.0528	0.6898	-0.9653	1.0000

Source :Stata output,2019

As it was perceived from the above table the Independent variables capital adequacy ratio, Asset quality, management efficiency, earnings ability ratio and sensitivity has a negative relationship with return on equity ratio of private commercial banks incorporated under the study. Therefore it means that as the ratio of the above independent variables increases the ratio of ROE decreases and vice versa.On the other hand, Liquidity ratio has a direct relationship with ROE.

4.4 Test result for the Classical linear regression model Assumptions.

In this study diagnostic tests were carried out to ensure that the data fits the basic assumptions of classical linear regression model. Consequently, the results for model misspecification tests are presented as follows.

4.4.1 Tests for Hetroskedasticity

This test involves testing the null hypothesis which states the variance of the errors is constant (assumption of homoscedasticity). In other words, it tries to check whether the errors have constant variance or not. If the test fails to assure existence of constant variance in the errors, heteroscedasticity is evident. According to Brooks (2008), there are a number of heteroscedasticity tests, however; the most popular Breusch-Pagan test is selected for the present assumption.

Heteroskedasticity Test for ROA: Breusch-Pagan test/

Cook-Weisberg test for heteroskedasticity

Table 4.12: Heteroscedasticity Test Result

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of ROA

         chi2(1)      =     0.01
         Prob > chi2  =   0.9114
```

.

Source:Stata result,2019

As it can understood from the above stata result we have no evidence to reject a null hypothesis since the p-value of the test statistics was greater than 5% of significance level.Therefore the errors has constant variance and there is no existence of heteroscedasticity problem.

Table 4.13 Heteroskedasticity Test for ROE: Breach-Pagan test

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of ROE

         chi2(1)      =     0.17
         Prob > chi2  =   0.6821
```

Again we have no evidence to reject the null hypothesis of ROE since both the Chi-Square test and p-values are greater than 0.05 as shown above.

4.4.2 Test for Autocorrelation

The Durbin-Watson test statistic tests the null hypothesis that the residuals from an ordinary least-squares regression are not auto correlated against the alternative that the residuals follow an AR1 process. The Durbin-Watson statistic ranges in value from 0 to 4. A value near 2 indicates non-autocorrelation; a value toward 0 indicates positive autocorrelation; a value toward 4 indicates negative autocorrelation. As indicated in table 4.14, the Durbin-Watson test statistic value is 2.069, with the relevant critical lower and upper values for the test are dL=1.4 and dU=1.5respectively. The values of 4 - dU = 4-1.5=2.5. Thus the Durbin- Watson test statistic of 2.069 is between the upper limit (du) which is 1.5 and the critical value of 4- dU i.e.2.5 indicating that there is no evidence of the presence of autocorrelation.

This study used Durbin Watson test and Breusch-Godfrey LM test to check for the existence of autocorrelation among error terms as recommended by Brook (2008).To identify the impact of CAMELS on Ethiopian private commercial banks profitability as measured by ROA and ROE, 72 (8*9) observations were used in the regression model.

The error terms are not serially correlated both by the using of Darbin Watson test and Breusch-Godfrey LM test results shown under. Continuing with Breusch-God frey serial correlation LM test is above the rejection value of 0.05 at the 5 percent significance level both for ROA and ROE as depicted in the Table 4.14 and 4.15 below. Therefore, there is no presence of autocorrelation at both regression for ROA and ROE. The Darbin Watson test value nearest to 2 has no the problem of the autocorrelation.

Table 4.14 Autocorrelation DW result for ROA

```
. qui reg ROA CAR AQ MGT ERN LIQ SEN

. estat dwatson

Durbin-Watson d-statistic(  7,    72) =  2.069128
```

Source: User's computation and Stata result,2019

Table 4.15 Breusch-Godfrey LM test for Autocorrelation with ROA

```
. qui reg ROA CAR AQ MGT ERN LIQ SEN

. estat bgodfrey

Breusch-Godfrey LM test for autocorrelation
```

lags(p)	chi2	df	Prob > chi2
1	0.093	1	0.7606

H0: no serial correlation

Table 4.16 DW result and Breusch-Godfrey LM test for ROE

```
. qui reg ROE CAR AQ MGT ERN LIQ SEN

. estat dwatson

Durbin-Watson d-statistic(  7,    72) =  2.060443

. estat bgodfrey

Breusch-Godfrey LM test for autocorrelation
```

lags(p)	chi2	df	Prob > chi2
1	0.069	1	0.7926

H0: no serial correlation

.

Source: Stata result,2019

4.4.3 Normality Test

The Assumption of Normality claims that the sampling distribution of the mean is normal or that the distribution of means across samples is normal .Test for normality require to check whether the disturbances are normally distributed or not. There are at two approaches to test normality of the error term. The more formal approach is to conduct a statistical test of the Assumption of Normality (as it applies to the shape of the sample). This is most-often done using either the Kolmogorov-Smirnov or the Shapiro-Wilk Test, which are both non-parametric tests that allow you to check the shape of a sample against a variety of known, popular shapes, including the normal. If the resulting p-value is under .05, then we have significant evidence that the sample is not normal, so you're "hoping" for a p-value of .05 or above. Those who always work with large samples, such as those who use surveys, use K-S; while those who often use small samples, use S-W. Therefore, Shapiro Wilk test was applied in this particular study for testing the normality of the data since the small sample is used in this study. Normality of this data was also tested by using of histogram at the end of this paper on the appendix.

Table 4.17 Normality value of ROA

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
r	72	0.96771	2.033	1.546	0.06107

As it was presented on the above table, the p-value of the Shapiro wilk test is greater than the 5 percent of the significance level; so I have no reason to reject the null hypothesis stating the data are normally distributed.

Table 4.18 Normality Value of ROE:

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
r	72	0.98288	1.078	0.165	0.43467

4.4.4 Test for Multicolliniearity

A correlation matrix used to ensure the correlation between explanatory variables. Cooper & Schindler (2009) suggested that a correlation coefficient above 0.8 between explanatory variables should be corrected for because it is a sign for multicolinearity problem. Mashotra (2007) argued that the correlation coefficient can be 0.75. Lastly, Hair et al. (2006) argued that correlation coefficient below 0.9 may not cause serious Multi colliniarity problem.

This indicates that there is no a sole agreed upon measure of Multicollinearity problem. For the purpose of this study, Hair et al. (2006) is preferable and used; but still there is a negative multicollinearity problem between sensitivity to market risk and Liquidity management and not make a big problem with multicollinearity problem in this study.

Table 4.19 Correlation Matrix of Independent Variables

	ROE	CAR	AQ	MGT	ERN	LIQ	SEN
ROE	1.0000						
CAR	-0.4604	1.0000					
AQ	-0.1868	-0.0233	1.0000				
MGT	-0.3602	0.2666	0.0434	1.0000			
ERN	-0.2505	0.1198	0.1888	0.3399	1.0000		
LIQ	0.1783	0.1995	-0.2818	0.0753	-0.6923	1.0000	
SEN	-0.1649	-0.1204	0.3067	-0.0528	0.6898	-0.9653	1.0000

4.5 Results of the regression analysis

Under the following regression outputs the beta coefficient may be negative or positive; beta indicates that each variable's level of influence on the dependent variable. P-value indicates at what percentage or precession level of each variable is significant.

4.5 .1Regression analysis between return on asset (ROA) and explanatory variables.

To examine the relationship between profitability measures and explanatory variables two regression analysis were run. The first regression analysis was undertaken to investigate the relationship between Return on asset and independent variables.

The regression Analysis result (Table 4.20) shows R-squared statistics and adjusted R squared statistics value of 33.51 percent and 27.38 percent respectively. The result indicates thatthe change in the independent variable explains 33.51 percent of the change in the dependent variable. That is capital Adequacy, Asset Quality; Management efficiency, Earnings Ability, liquidity and sensitivity were collectively explains 33.51 percent of ROA. For panel data, R-Squared greater than 20 percent is stilllarge enough for reliable conclusions (Cameron Trivedi, 2009; Hsiao, 2007, cited in Nyamsogoro, 2010).

Table 4.20 : Regression result for ROA

Source	SS	df	MS	Number of obs	=	72
				F(6, 65)	=	5.46
Model	.001184534	6	.000197422	Prob > F	=	0.0001
Residual	.002350082	65	.000036155	R-squared	=	0.3351
				Adj R-squared	=	0.2738
Total	.003534616	71	.000049783	Root MSE	=	.00601

ROA	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
CAR	.0428992	.0269511	1.59	0.116	-.0109258	.0967242
AQ	-.0749733	.0570408	-1.31	0.193	-.1888916	.0389449
MGT	-.0254817	.0111754	-2.28	0.026	-.0478005	-.003163
ERN	.2627465	.1416647	1.85	0.068	-.0201774	.5456705
LIQ	.0611422	.0171182	3.57	0.001	.0269547	.0953296
SEN	.0605916	.0234414	2.58	0.012	.0137759	.1074074
_cons	-.0349363	.0230808	-1.51	0.135	-.0810319	.0111592

The null hypothesis of F- statistics (the Overall test of Significance) that R2 is equal to zero was rejected at 1 percent as the p-value was sufficiently low value of 0.000000; suggesting a strong level of significance, which enhances the reliability and validity of the model.

$$ROA = -0.035 + 0.043CAR - 0.075AQ - 0.025MGT + 0.26ERN + 0.061LIQ + 0.06SEN \text{-----(1)}$$

Based on the result of Table 4.20 above the coefficient of Asset quality and Management efficiency against ROA were negative -0.07 and -0.025 respectively. This indicates that there was an inverse relationship between the aforementioned both independent variables and ROA and statistically significant for management efficiency ratio and not significant for Asset quality of the study variable .On the other hand; capital Adequacy, Earnings Ability, liquidity and sensitivity ratio had a positive relationship with ROA 0.042,0.26,0.061 and 0.060 respectively .This reveals that there is a direct relationship between the above independent variables and ROA and statistically significant for Earnings ability ,Liquidity and sensitivity ratio whereas insignificant for capital adequacy.

4.5.2 Discussion of the regression results of ROA

Capital adequacy and ROA

The regression result of OLS model in the above table 4.20 is inconsistent with the hypothesis developed by the researcher except the positive sign. The study hypothesized that there is a positive and significant association between capital adequacy and performance of banks measured by ROA. Contrary to the hypothesis, the result shows the effect of capital adequacy measured by ROA with a coefficient of 0.043 and a p-value of 0.116. This implies that every one percent change (increase or decrease) in the capital adequacy keeping the other thing constant had a resultant change of 0.043 percent change on the ROA in the similar direction. As shown on the regression result the coefficient of capital adequacy was positive. The direct relationship implies that, the high capital shows the internal strength of the bank to withstand losses during crisis which boost the financial position and image of the bank due this fact the performance the bank is also increased. So when capital adequacy increases ROA also increases. The p –value of capital adequacy show that capital adequacy ratio of banks was not significant even at 10 percent level of significance. These results indicate that the effect of capital adequacy of banks on performance of private commercial bank ROA is lower when we compare with other variable. Based on the result, we can reject the hypothesis or the data did not support the hypotheses and we can conclude that capital adequacy of the bank had positive and insignificant effect on ROA of commercial banks. Therefore, this positive and in significant finding was consistent with the previous finding of (Habtamu, 2012).

The positive and statistically insignificant impact of capital adequacy on ROA is inconsistent with the hypothesis (1) and findings of Dawit (2015), Melaku(2017) and Mulualem (2015).

Asset Quality and ROA

As per the table 4.20 presented the coefficient of Asset Quality (AQ) measured by Fixed Asset to total Asset is -0.0749 and its P-value is 0.193. Holding other things constant, when the Asset Quality (AQ) of private commercial banks increased by onepercent, return on asset (ROA) of sampled private commercial banks would be decreased by -0.075 percent and statistically insignificant even at 10 percent significance level. Therefore, the researcher has an evidence to reject the null hypothesis that states asset quality has a negative significant effect on ROA since the result of the regression shows in significant effect. The relationship is negative as expected and this negative relationship between AQ and ROA could be

attributed to the fact that a bank which has high Fixed Assets in its balance sheet has low financial performance (ROA). This finding is consistent with previous studies and results of (Bourke, 1989), (Yuqi , 2006), and (Tobias &Themba , 2011).

Management Efficiency and ROA

The impact of management quality on ROA of private commercial bank of Ethiopia is negative and statistically, significant at 1 percent level of significance with the coefficient of -0.025 percent. It indicates that all things are citrus paribus changes in management efficiency whether increase or decrease of private commercial banks are negatively affected ROA of commercial banks by the amount of -0.025.Thus the hypothesis that states there is a significant negative relationship between management efficiency and profitability was not rejected .Referring to the previous studies of , the results concerning management efficiency are validated with the results of Melaku (2017) and Mulualem (2015) found negative significant relationship between management efficiency and bank profits.

Earnings ability and ROA

Table 4.20 above shows that the coefficient of Earnings Ability (EA) measured by Net Interest Income to Total Income is 0.26 and its P-value is 0.068. Holding other things constant, when earning Ability (EA) increased by onepercent, return on asset (ROA) of sampled Ethiopian private commercial banks would be increased by 0.26 percent and statistically significant at 10% level of significance. Therefore, the researcher has failed to reject the null hypothesis of study result that states earning Ability has a positive significant effect on ROA. This means that, there is no sufficient evidence to reject the positive relationship between ROA and EA. This result also consistent with the findings of Mulualem(2015) and Habtamu (2012)

Liquidity management and ROA

Table 4.20 above depicted that, the coefficient of liquidity management (LM) measured by liquid assets to total deposits is 0.0611 and its P-value is 0.001. Holding other things constant, when liquidity management (LM) increased by onepercent, return on asset (ROA) of sampled Ethiopian private commercial banks would be increased by 0.061 percent, and statistically significant at 1 percent significance level. In other words, there is significant positive direct relationship between liquidity management (LM) and return on asset (ROA) of sampled Ethiopian private commercial banks. Therefore, the researcher do not rejects the null hypothesis of positive relationship between LM and ROA. This indicates that, there is sufficient evidence to support the positive relationship between liquidity management and ROA.

Sensitivity to market risk and ROA

As shown on the table 4.20 above, the coefficient of sensitivity to market riskis 0.061 and its P-value is 0.012. Holding other independent variables constant, when sensitivity to market risk was increased by one percent, return on asset (ROA) of sampled Ethiopian private commercial banks would also be increased by 0.061 percent, and statistically significant at 1 percent significance level. In other words, there is significant positive relationship between sensitivity to market risk and return on asset (ROA). Therefore, the researcher rejects the null hypothesis that formulated by there is a negative significant relationship between sensitivity to market riskand ROA since the study result shows the positive direct relationship exists between sensitivity to market risk and performance of the banks measured by ROA. This result was contrary to the researcher expectation and the result of (El Khoury, Rim a, Chantal Ghasb Salem,2012).

4.5.3 Regression analysis between return on Equity and explanatory variables'

The second regression analysis was done to know how much the bank is earning on their equity investment, an amount that is measured by the return on equity (ROE) in relation with explanatory variables included in this study.

ROE=0.049-1.18CAR-0.65AQ-0.29MGT+1.89ERN+0.44LIQ+0.41SEN-----(2)

Table 4.21: Regression result for ROE

Source	SS	df	MS	Number of obs	=	72
				F(6, 65)	=	7.96
Model	.126265559	6	.02104426	Prob > F	=	0.0000
Residual	.171779678	65	.002642764	R-squared	=	0.4236
				Adj R-squared	=	0.3704
Total	.298045237	71	.00419782	Root MSE	=	.05141

ROE	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
CAR	-1.178497	.2304202	-5.11	0.000	-1.638678	-.7183162
AQ	-.6475022	.487674	-1.33	0.189	-1.621455	.3264501
MGT	-.2897526	.0955447	-3.03	0.003	-.4805686	-.0989367
ERN	1.886462	1.211173	1.56	0.124	-.5324173	4.30534
LIQ	.4399853	.1463534	3.01	0.004	.1476973	.7322733
SEN	.4092129	.200414	2.04	0.045	.0089585	.8094674
_cons	.0496595	.1973309	0.25	0.802	-.3444375	.4437566

As Table above shows that, the change in independent variables included in the study were explained the value of dependent variable in the study by the ratio of 42.36 percent .Furthermore, the F-statistic was 7.96 and the probability of not rejecting the null hypothesis that there is no statistically significant relationship existing between the dependent variable (ROE) and the independent variables, is 0.000000 indicates that the overall model is highly significant at 1 percent and that all the independent variables are jointly significant in causing variation in ROE.

The coefficients of the variables capital adequacy, asset quality and management efficiency were negative that is -1.18,-0.65 and -0.29 respectively.

The result's, shows that there was an inverse relationship between the above-mentioned three variables and Return on equity where capital adequacy and management efficiency are highly significant at 1 percent levelof significance.

On the contrary to the above findings the coefficients of the variables Earnings Ability, Liquidity and sensitivity to market risks has positive and direct relationship with ROE with the value of 1.89,0.44 and 0.41 respectively. And Liquidity and sensitivity to market risk are significantly influence the dependent variable ROE at the 1 percent and 5 percent significance level respectively.

4.5.4 Discussion of Regression results of ROE

Capital adequacy and ROE

As the above OLS regression result table 4.21 shows that, the coefficient of variable capital adequacy (CA) measured by Total Capital to Total Asset is -1.18 and its P value is 0.000. Holding other independent variables constant, when capital adequacy (CA) of Ethiopian private commercial banks increases by one percent return;return on equity (ROE) of sampled private commercial banks of Ethiopia was decrease by -1.18 percent and statistically significant at 1 percent level of significance. Therefore, the researcher rejects the null hypothesis that capital adequacy has a positive effect on ROE. In other words, the researcher has enough evidence to support the negative relationship between ROE and CA.

The negative sign contrary to the expected positive relationship between ROE and capital adequacy and it implies that, private commercial banks in Ethiopian order to meet the regulatory requirement level of capital; they are forced to increase their equity. And as cost of equity is high it initiatives the cost to increase which in turn leads to a reduction in net profit. Therefore as capital rise return on equity was decreases and vice versa. Based on the result, the null hypothesis was rejected and we can also conclude that capital adequacy had negative and significant effect on performance (ROE) of private commercial banks of Ethiopia .As capital of private commercial banks of Ethiopia increases ROE decreases and vice versa.The finding is also consistent with the study findings of (Bateni, et al., 2014;Khaled&Samer, 2013), Dawit (2015) and Melaku (2017).

Asset quality and ROE

Table 1.21 above previews that, the coefficient of Asset Quality (AQ) measured by fixed asset to total asset is -0.65 and its P-value is 0.189. Keeping the other independent variables constant, when Asset Quality (AQ) increased/decreased by 1 percent, (ROE) of sampled private commercial banks in Ethiopia was decreased by 0.65 percent but statistically insignificant at 10 percent significance level.

Therefore, the researcher rejects the null hypothesis that states there is a significant negative relationship between Asset Quality and return on equity since the result of the study variable is insignificant. The relationship is negative as expected and this negative relationship between AQ and ROE could be attributed to the fact that a bank which has high amount of fixed Asset has low finical performance (ROE).This finding is consistent and in line with the prior study findings of (Bourke, 1989), (Yuqi , 2006), and (Tobias &Themba , 2011) at international level and at the country level with the results of Dawit (2015),Melaku (2017),Mulualem (2015) and Habtamu (2012)

Earnings ability and ROE

As shown on the regression table 4.21 abovethe coefficient of earnings ability measured by Net interest income to total asset was 1.89 with the insignificant p-value of 0.124. Holding other things constant, when Earning Ability (EA) increased by one unit, return on equity (ROE) of sampled private commercial banks of Ethiopia would be increased by 1.89 units and statistically insignificant at 10 percent of significance level. In other words, there is insignificant positive relationship between earnings Ability (EA) and return on equity of sampled private commercial banks in Ethiopia. Therefore, the researcher rejects the null hypothesis hypothesized by there is a positive significant relationship between earnings quality and ROE due to the insignificant result of the regression made.

The possible reason for the positive relationship between earnings ability and ROE could be attributed to the fact that Ethiopian commercial banks ingeneral and private commercial banks in particular mainly depends on income from interest income not diversified to the other sources of income.

Liquidity Management and ROE

The coefficient of Liquidity management (LM) from the above Table 4.21 measured by liquid assets to total deposits is 0.44 and its P-value is 0.004. Keeping other things constant, when Liquidity management (LM) increased by 1 percent, return on equity (ROE) of sampled private commercial banks would also increase by 0.44 percent with the direct relationship between the variables statistically significant at 1 percent significance level. Therefore, the researcher failed to reject the null hypothesis that there is positive significant relationship between Liquidity management and return on equity. This means, liquidity of a bank and return on owners' equity of private commercial banks of Ethiopia was highly related and goes in the same direction in this particular study. This finding is consistent with the study findings of Mulualem(2015).

Sensitivity to market risk and ROE

As shown on the Table 4.21 above the coefficient of sensitivity to market risk measured by RWA to total asset was 0.409 with the significant p-value of 0.045. Holding other things constant, when sensitivity to market was increased by one unit, return on equity (ROE) of sampled private commercial banks of Ethiopia would be increased by 0.409 units and statistically significant at 5 percent of significance level. The null hypothesis which states that sensitivity to market has negative significant relationship with ROE of private commercial banks of Ethiopia was rejected since the coefficient of the variables are positive with each other. This means that as sensitivity to market was increases the ROE of private commercial banks are increases at the same time.

4.6 Choosing between Fixed effects and Random effects

According to (Gujarati, 2004), if T (the number of time series data) is large and N (the number of cross-sectional units) is small, there is likely to be little difference in the values of the parameters estimated by fixed effect model/FEM and random effect model/REM. Hence the choice here is based on computational convenience .To decide between fixed or random effect you can run aHausmantest where the null hypothesis is that the preferred model is random effects vs. the alternative the fixed effects (Green, 2008, chapter 9).Based on the regression results of the study variables Ordinary Least Square (OLS) was adopted in this study. The regression result was attached at the end of the paper in the appendix.

HO: Fixed effect is preferable

HA: Random effect is preferable

Rule: If p-value of the regression result is greater than or equal to 0.05 the fixed effect model is not appropriate and the alternate hypothesis random effect model is appropriate. From the regression result in this study random effect model is appropriate. Then testing for the random effect was followed by the use of Breusch-pagan Lagrange multiplier(LM).The LM helps to decide between a random effect model and a simple OLS regression. The LM test helps to decide between a random effects regression and a simple OLS regression.

HO: Random effect model is appropriate

HA: simple OLS model is appropriate.

Rule: If p-value of the regression result is greater than 0.05, no random effect model is appropriate and simple OLS model is appropriate. As a result in this study since the p-value is greater than 0.05,no random effect model is appropriate and a simple OLS model is appropriate.

Table 4.22Summary of Significant Results from ROA model

Variables	Description	Hypothesis	Regression results	Level of significance
MGT	Management efficiency with bank performance	Negative and sig.	negative	1%
ERN	Earning efficiency with bank performance	Positive and sig	positive	10%
LIQ	Liquidity of banks with ROA	positive and sig	Positive and sig.	1%
SEN	Sensitivity of market risk with ROA of private commercial banks	Negative and sig	Positive and sig.	1%

Source: Summary by author from Stata Results output, 2019

Sig: significance

Table 4.23 Summary of Significant Results from ROE model

Variables	Description	Hypothesis	Regression results	Level of significance
CA	Capital adequacy with bank performance	Positive and sig.	Negative and sig.	1%
MGT	Management efficiency with bank performance	negative and sig	Negative and sig.	1%
LIQ	Liquidity of banks with ROE	positive and sig	Positive and sig.	1%
SEN	Sensitivity of market risk with ROE of private commercial banks	Negative and sig	Positive and sig.	5 %

Source: Summary by author from Stata Results output, 2019

Note : Sig: significance

This summary contains the explanatory variables from the ROA model result indicated in table 4.20, which are found to have statistically significant impact on the profitability of Ethiopian private commercial banks; as measured by return on asset (ROA) at a maximum significance level of 10 percent. As shown in table 4.18, from the bank specific variables, management efficiency are significant at 1 percent and have a negative relationship with performance of Ethiopian Private commercial banks. The negative significant relation of management efficiency ratio with performance is consistent with the findings of Mulualem (2015),Melaku (2017),and but disproved with the findingsofpositive significant by Habtamu (2012) and Lemlem (2017).

Earnings ability and liquidity management are also significant at 10 % and 1 % respectively where they are positively related with ROA which is also consistent with the expectation and the findings ofHabtamu(2012) and Mulualem for earnings ability and but rebuted by Lemlem (2013),Dawit (2015) and Melaku (2017).Whereas Liquidity management was consistent with the findings of Mulualem (2015) and Ermias (2016),butrebutted by the expectation of the researcher and the study findings of Dawit (2015),and Melaku (2017) and Lemlem (2015); whereas CA was significant at 10 % and positive relationship which is also supported by the results of Dawit (2015),Melaku (2016) and Habtamu (2012) but rebutted with the result of Mulualem (2015).

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

In this chapter the major findings of the study are summarized; conclusions are drawn based on the results and findings of the study and recommendations are forwarded for the concerned bodies.

5.1 Summary

The main objective of this study was to examine the internal determinants of the performance of the private commercial banks of Ethiopia based on the CAMELS parameter and rank the banks according to their performance as well as to investigate the relationship between CAMELS variables with profitability measures of Return on Asset (ROA) and return on Equity (ROE).

Specific objectives were to evaluate and rank the banks based on their performance using financial ratio selected from the CAMELS framework. Balanced panel data of Seventy two observations from the year 2010 up to 2017 of nine privately owned commercial banks was analyzed using multiple linear regressions models. Only secondary data collected from audited and provisional financial statement of the banks was used to scrutinize the performance of commercial banks.

The major findings of the study are:

CAMELS rating based on last Eight Years (2010-2017) average performance of private commercial banks is as follows:

In terms of Capital adequacy ratio measured by the ratio of total capital to total asset WegagenBank is rated first i.e. with the average percentage values of 15.75 percent. During the study period 12.08 percent of the private commercial banks asset was financed by capital. Dashen Bank was maintained the last position with the average percentage ratio of 9.59 Percent.

With regard to asset quality ratio as measured by the ratio of fixed asset to total asset Lion International bank is the first with an average value of 1 percent followed by Nib International Bank and United Bank with the average percentage of 1.69 and 1.71 respectively.

Management efficiency as measured by the ratio of Non-Interest Expense (Excluding provision loss) to Gross Expense. DashenBankis first with the average ratio of 48.04 percent. Totally; the Ethiopian private commercial banks spend 55.36percent of their income to cover Noninterest expense costs. With an average value of 64.38 percent Cooperative Bank of Oromia maintained the last position among the private commercial banks.

In terms of earnings ratio as measured by Net Interest Income to totalAssetNIB was on the top with the average ratio of 3.44 percent while Dashen Bank was the last with the average ratio of 2.32 percent. The earnings ratio generated from Net interest Income of the private banks in Ethiopia was on average 3.01percent during the study period.

Liquidity ratio as measured by the ratio of Liquid Asset to totaldepositLionInternational Bank was first with the average ratio of 42.84 percent while Awash International Bank was the last with the average ratio of 31.57 percent .The liquidity position of the Private commercial banks in Ethiopia was 35.81 percent on average.

As per the Sensitivity to Market Risk which is measured by the ratio of Risk Weighted asset to Total Asset LIB was placed on the first place with the ratio of 58.95 percent while AIB was settled on the last position with the average ratio of 71.31 percent.

According to the Composite rating of the individual rankings of the banks, LIB stood on the top followed by NIB while; AIB maintained the last position among the private commercial banks in Ethiopia.

Descriptive analysis result shows the capital adequacy mean value suggests that 13 percent of the total asset of the private commercial banks in Ethiopia were financed byshareholders contribution while the remaining 87% were financed from the customer deposit.

Asset quality ratio as measured by Fixed Asset to total Assetmeanvalue was 2.36 Percent it indicates 2 percent of the bank’s Asset is from the Fixed Asset. Managerial efficiency ratio as measured byNon-Interest Expense to Gross Expensehadmean value of 62.29 Percent which means most oftheprivatecommercial banks in Ethiopia spend62.29 percent of their revenue for operation expense.

Earnings ratio in this particular study measured by net interest income to total assetshad the mean value of 3.38 Percent which has the lowest standard deviation among the CAMELS framework with the amount of 0.87 percent. Itshows the Ethiopian private commercial banks generated net interest income of 0.0338 percent for each total asset.

The Liquidity ratio; measured by liquid Asset to total deposit has the mean value of 40.28 Percent with the standard deviation of 17.66. This indicates that 40.28 percent of the deposit of the private commercial banks maintained in the bank to manage the liquidity risk.

The mean value of the sensitivity to market risk is 71.94 percent showing the large amount among the CAMELS parameter and sensitivity to market risk of private commercial banks are high based on the RWA to total asset.

With regard to the relationship between the selected CAMELS model variable to profitability measures of Return on Asset (ROA), capital adequacy ratio, earnings ability ratio, Liquidity and sensitivity ratio had positive relation with the return on asset of the private commercial banks and negative relation with Asset qualityratioandmanagement efficiency ratio. This indicates that, asset quality ratio and management efficiency ratio had inverse relation with the ROA. Liquidity ratio was significant at 1% whereas sensitivity ratio and management efficiency is significant at 5%. Capital Adequacy ratioand Asset quality was insignificant even at 10 percent.

Capital Adequacy ratio, Asset Quality and management Efficiency ratio had negative relation with Return on Equity whereas there was a positive relationship with Earning ratio, Liquidity and sensitivity ratio. Capital Adequacy, Management efficiency and Liquidity ratio were significant at 1 percent whereas sensitivity to market risk was significant at 5 percent significance level. Asset quality ratioand Earnings ability was insignificant even at 10% significant level.

As to the explanatory power of the regression output 33.25 percent of the change in the return on asset can be explained by the selected CAMELSmodelvariable while 42.36 percent of the change on the Return on Equity was explained by CAMELS.

5.2 Conclusion

CAMELS regulatoryrating model plays' a critical role in the supervisory process and identifying sticky banks. The finding of the CAMELS model rating reveals that the banks under the study had different ranking on the CAMELS model. This is because mainly due to bank specific related factors and different business experience in the Banking industry.

As per theCAMEL rating system all private commercial banks included in the study were above the statutory requirement settled by the National Bank of Ethiopia.

The Empirical CAMELS model findings regarding the elements of the model and profitability as measured by ROA and ROE suggest the following:

The relationship between capital adequacy Ratio and Profitability measured by ROE is negative whereas positive with ROA .As to the level of significance the result shows capital adequacy ratio is insignificant for ROA even at 10 percent significant level while it was significant for ROE at 1 percent significant level.

The relationship between Asset quality ratio and profitability is negative and insignificant for both measurements of ROA and ROE at significance level.

The relationship between Management efficiency ratio and profitability is negative and statistically significant at 5 percent and 1 percent significance level for ROA and ROE respectively. In addition to this the coefficient of the variable was relatively high for both profitability measures.

The result also showed that; positive relationship between Liquidity ratio and profitability of banks for both ROA and ROE. The result shows liquidity ratio was statistically significant at 1 percentsignificance level.

The relationship between sensitivity to market risk and profitability was positive and statistically significant at1 percent and 5 percent significance level for both ROA and ROE respectively.

5.3 Recommendation

Based on the findings of the study the following recommendations were forwarded.

The study revealed thatManagementefficiencyratio, earnings ability, liquidity ratio and sensitivity to market risks are the key drivers of return on asset of the private commercial banks in Ethiopia. Similarly the study also identified that capital adequacy, management efficiency, sensitivity to market risk and Liquidity as the key drivers of return on equity of Ethiopian private commercial banks. Therefore, Bank managers are advised to give due consideration to those variables to improve profitability and boost the performance of their banks.

Since management quality had a negative and significantly affect the profitability of Ethiopian private commercial banks measured by ROA and ROE, it is recommended for management of the banks to give due consideration for the improvement of management quality at all levels of the organization and boost the profitability of the banks.

During the multi-dimensional ratings, CBO had paid highest amount of operating expenses out of gross expense 64.39 percent when compared to the first ranked ashen bank 48 percent; indicating that the management efficiency level of CBO was very deficient. Therefore management of CBO as a whole should follow up the operating expenses they incurred and manage in order to achieve efficiency level of the banks in general.

The regulatory organ national bank of Ethiopia should consider and give due attention to the effect of sensitivity to market risk in the same way with the rest of CAMELS frame work and use as one of the performance measurement technique since this variable is direct relationship with performance of private commercial banks in Ethiopia and adversely affect the performance of the firms.

The regulatory body National Bank of Ethiopia should timely revise the existing directives that govern the banking sectors.

All factors in the CAMELS should be considered as a whole when evaluating financial performance. More factors; market risk should be considered for inclusion and model may further be modified.

The NBE should fully implemented EAGLES (earnings ability, asset quality,growth,liquidity,earnings and strategy) as an additional parameter for bank performance evaluation since many countries' have shifted to EAGLES.

5.4 Future Research

This study has used only eight years data in order to keep the sampled banks representative due to banks recent establishment and outlier problem of the required data in case of the recent established banks since they have negative ROA and ROE in their financial statement at the first year of their establishment. Therefore, future researches could replicate this study by using multiple years‟ data like above 10 years with the inclusion of large government owned bank commercial bank of Ethiopia (CBE).

The current study focused on CAMELS parameter as a performance evaluation on private commercial banks in Ethiopia; future studies may make additional contribution if considered EAGLES (earning ability, asset quality, growth, liquidity, earnings and strategy) as an additional parameter since many countries shifted to EAGLES.

The current study uses only some representative financial ratios from factors of the CAMELS model, the financial ratios included in the research may not comprehensive and enough to evaluate the bank's Capital adequacy, asset quality, management efficiency, earning ability, liquidity management and sensitivity ratio. Therefore future researcher is recommended to consider additional financial ratios especially focusing on sensitivity to market risk since no single research has done on it.

Future research should consider the impact of interest rate risk and exchange rate risk on the performance of commercial banks by including the government owned commercial bank of Ethiopia and sees their differences regarding the effect of ownership.

The CAMELS model is useful rating tools for banking sectors; however, the tool can be equally be applicable to other related financial institutions like micro finance institutions. Thus, future research is recommended to use the CAMELS model for such kind of institution.

The current study fully concentrated on the secondary data and the analysis was made based on the financial data. However, secondary data obtained from financial reports of banks or through National Bank can have potential bias. Thus, future research is recommended to validate secondary data by adding primary data like interview

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APPENDICES

RANDOM EFFECT VS FIXED EFFECT DECISION

```
. xtreg ROA CAR AQ MGT ERN LIQ SEN,fe

Fixed-effects (within) regression               Number of obs      =        72
Group variable: BN                              Number of groups   =         9

R-sq:                                           Obs per group:
     within  = 0.3136                                         min =         8
     between = 0.3412                                         avg =       8.0
     overall = 0.2823                                         max =         8

                                                F(6,57)            =      4.34
corr(u_i, Xb)  = -0.4719                        Prob > F           =    0.0011
```

ROA	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
CAR	.0871303	.0432239	2.02	0.049	.0005758	.1736848
AQ	-.1387467	.0656961	-2.11	0.039	-.2703009	-.0071925
MGT	-.0267848	.0210563	-1.27	0.209	-.0689493	.0153797
ERN	.480004	.1813466	2.65	0.010	.1168636	.8431444
LIQ	.0485811	.0222938	2.18	0.033	.0039385	.0932236
SEN	.0323958	.0320366	1.01	0.316	-.0317563	.096548
_cons	-.0206322	.0300338	-0.69	0.495	-.080774	.0395095
sigma_u	.00374199					
sigma_e	.00568225					
rho	.30249244	(fraction of variance due to u_i)				

```
F test that all u_i=0: F(8, 57) = 1.97                     Prob > F = 0.0665

. estimate store fe
```

```
. xtreg ROA CAR AQ MGT ERN LIQ SEN

Random-effects GLS regression                   Number of obs      =        72
Group variable: BN                              Number of groups   =         9

R-sq:                                           Obs per group:
     within  = 0.3047                                         min =         8
     between = 0.4300                                         avg =       8.0
     overall = 0.3197                                         max =         8

                                                Wald chi2(6)       =     28.69
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0001
```

ROA	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
CAR	.0599069	.0336985	1.78	0.075	-.006141	.1259548
AQ	-.1063406	.0593773	-1.79	0.073	-.222718	.0100367
MGT	-.0292911	.0152199	-1.92	0.054	-.0591216	.0005394
ERN	.3742867	.158469	2.36	0.018	.0636932	.6848802
LIQ	.0536934	.0193293	2.78	0.005	.0158087	.0915781
SEN	.0448592	.0272343	1.65	0.100	-.008519	.0982374
_cons	-.0235872	.0263606	-0.89	0.371	-.0752531	.0280787
sigma_u	.00355479					
sigma_e	.00568225					
rho	.2812836	(fraction of variance due to u_i)				

```
. estimate store re

. hausman fe re
```

	Coefficients (b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
CAR	.0871303	.0599069	.0272234	.0270688
AQ	-.1387467	-.1063406	-.032406	.0281126
MGT	-.0267848	-.0292911	.0025063	.0145507
ERN	.480004	.3742867	.1057173	.0881714
LIQ	.0485811	.0536934	-.0051123	.0111082
SEN	.0323958	.0448592	-.0124634	.0168712

```
                b = consistent under Ho and Ha; obtained from xtreg
     B = inconsistent under Ha, efficient under Ho; obtained from xtreg

  Test:  Ho:  difference in coefficients not systematic

              chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                      =        2.26
            Prob>chi2 =      0.8943
```

Since, p is > 5 % fe is un appropriate and REM is appropriate then run REM regression to choose between REM and OLS

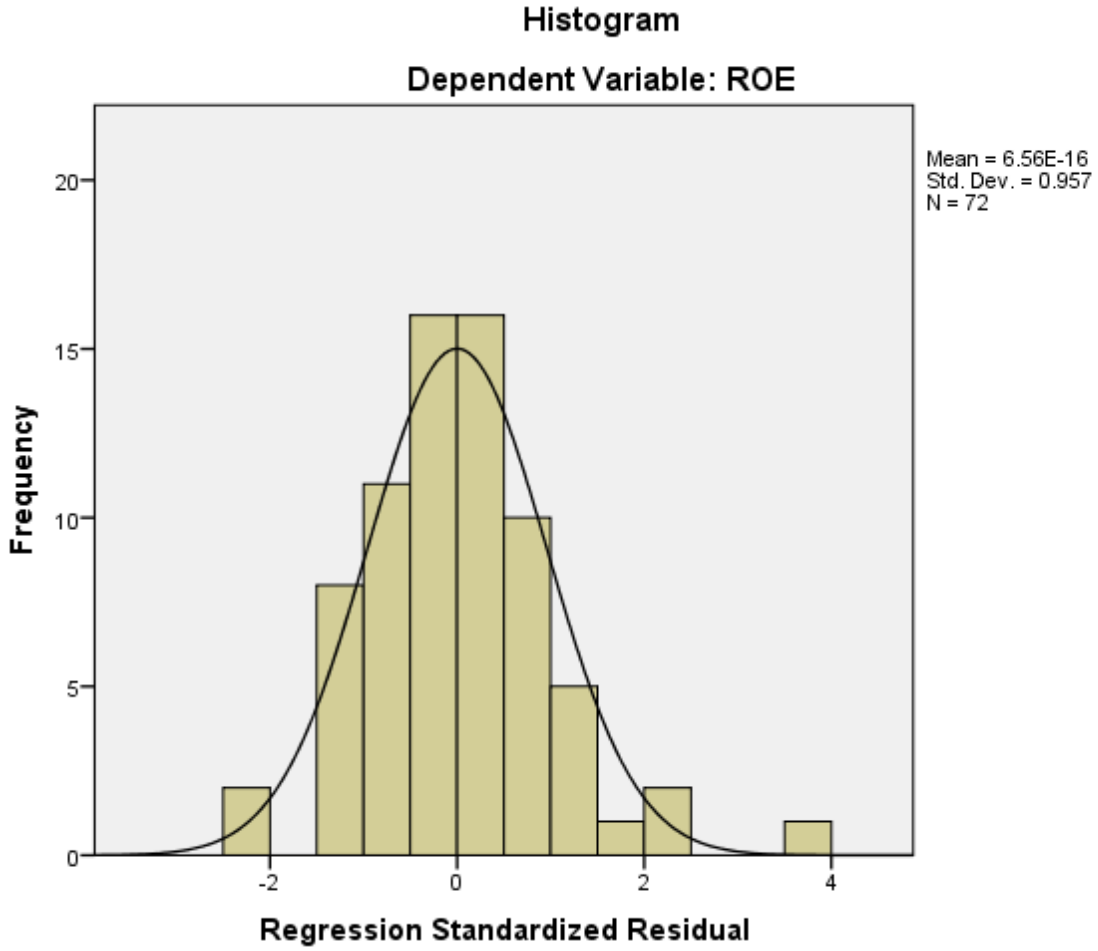
```
. xtreg ROA CAR AQ MGT ERN LIQ SEN,re

Random-effects GLS regression                   Number of obs     =         72
Group variable: BN                              Number of groups  =          9

R-sq:                                           Obs per group:
     within  = 0.3047                                         min =          8
     between = 0.4300                                         avg =        8.0
     overall = 0.3197                                         max =          8

                                                Wald chi2(6)      =      28.69
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0001
```

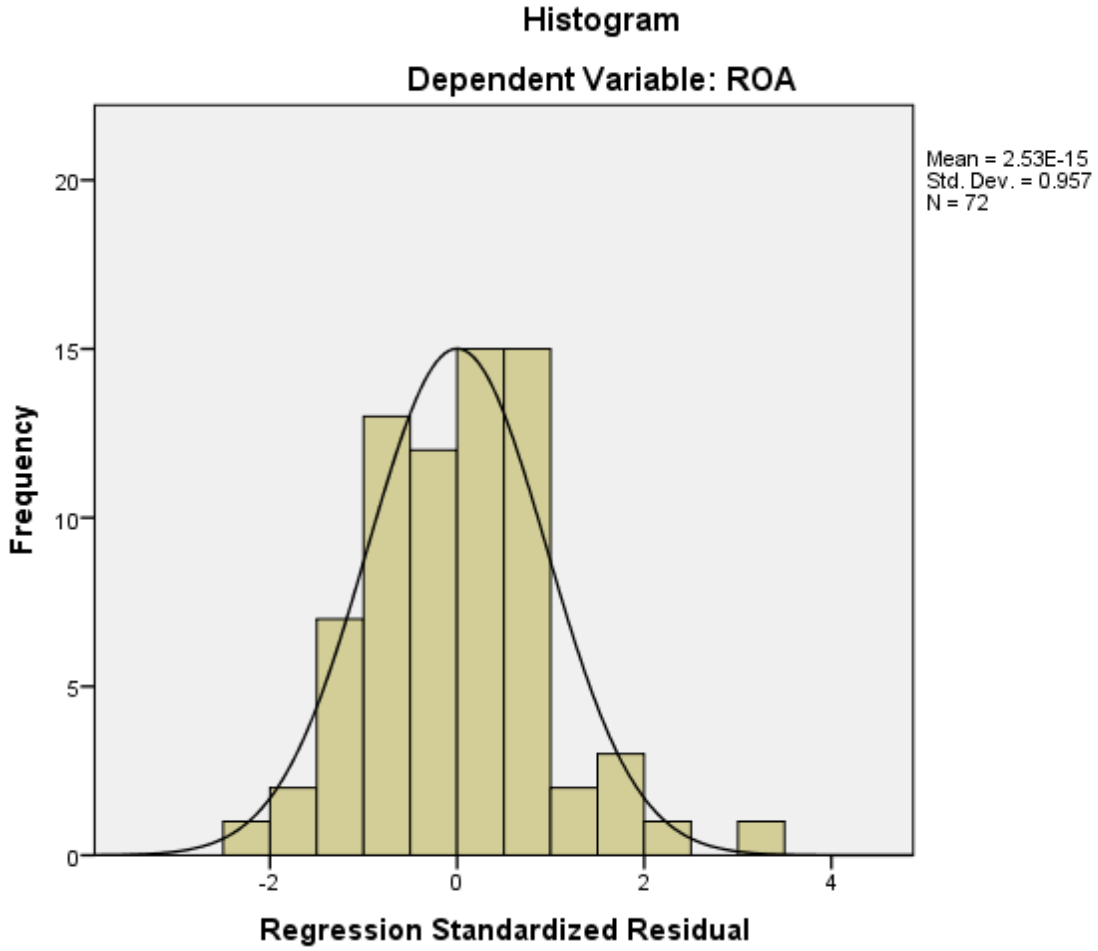
ROA	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
CAR	.0599069	.0336985	1.78	0.075	-.006141	.1259548
AQ	-.1063406	.0593773	-1.79	0.073	-.222718	.0100367
MGT	-.0292911	.0152199	-1.92	0.054	-.0591216	.0005394
ERN	.3742867	.158469	2.36	0.018	.0636932	.6848802
LIQ	.0536934	.0193293	2.78	0.005	.0158087	.0915781
SEN	.0448592	.0272343	1.65	0.100	-.008519	.0982374
_cons	-.0235872	.0263606	-0.89	0.371	-.0752531	.0280787
sigma_u	.00355479					
sigma_e	.00568225					
rho	.2812836	(fraction of variance due to u_i)				

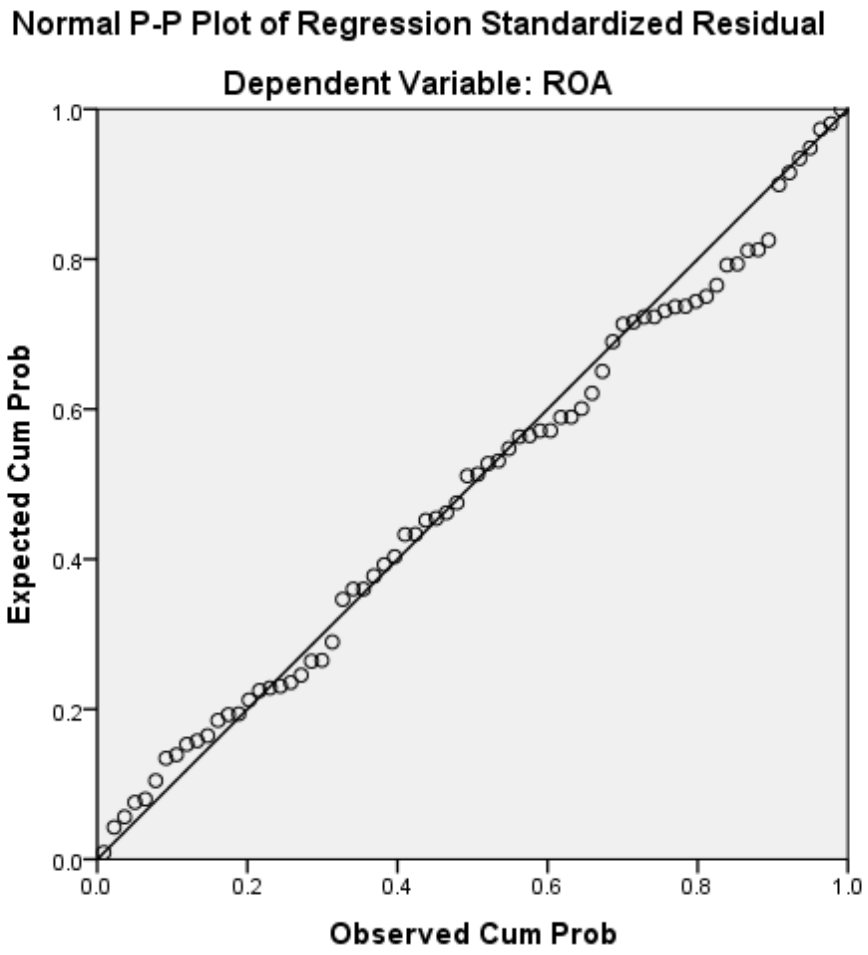
```
                                Prob > chibar2 =   0.1927
```

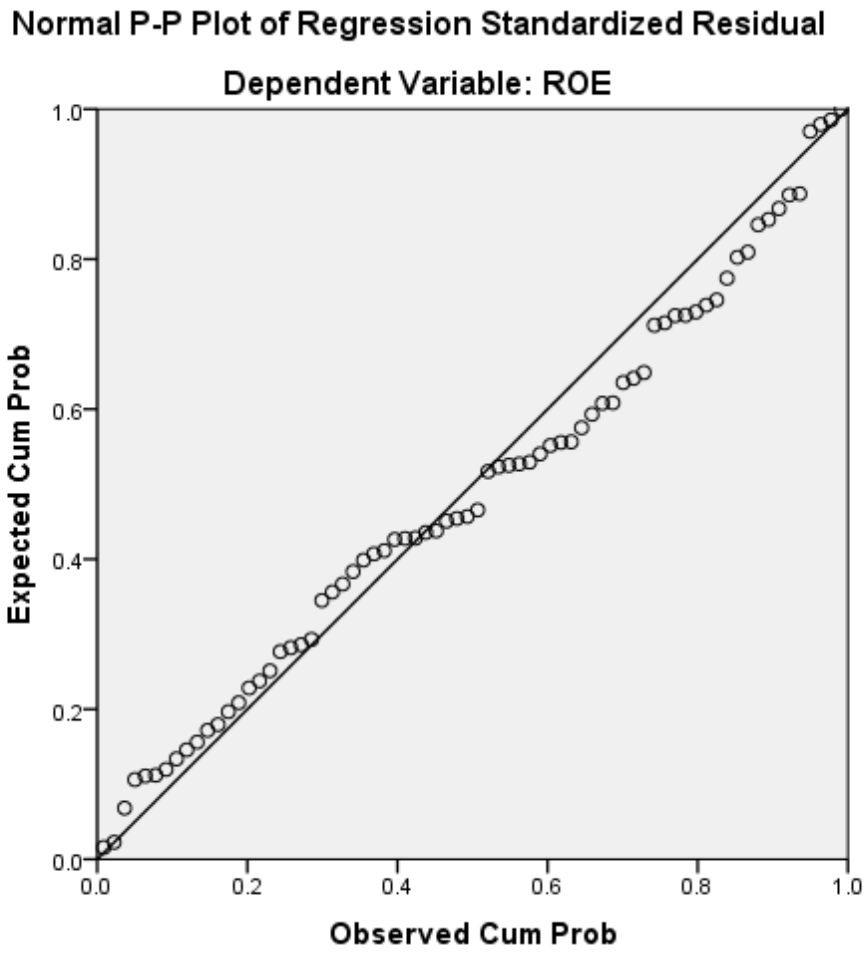
As observed above p-value is greater than 5% and REM is not appropriate and OLS is appropriate.

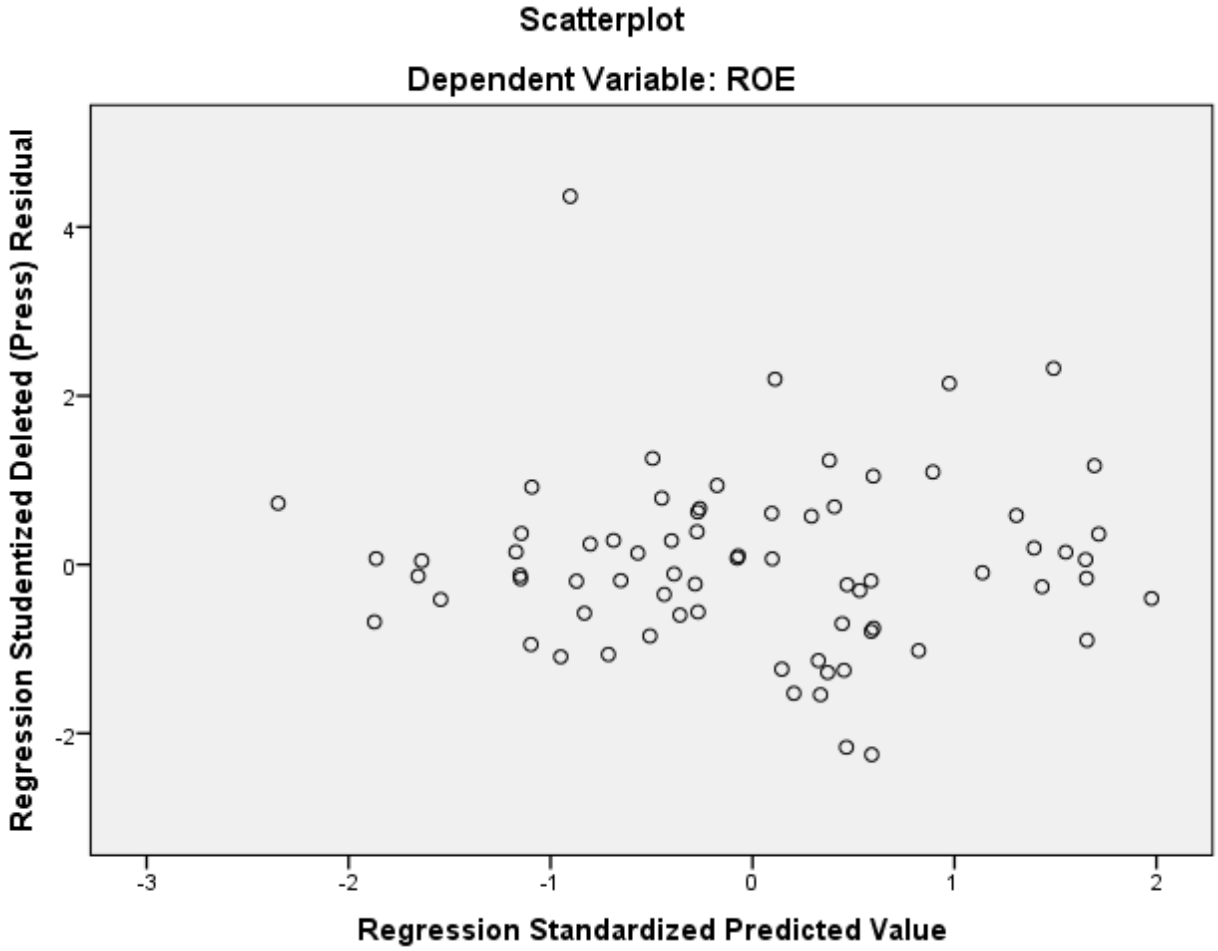
Normality Test of ROE by Histogram

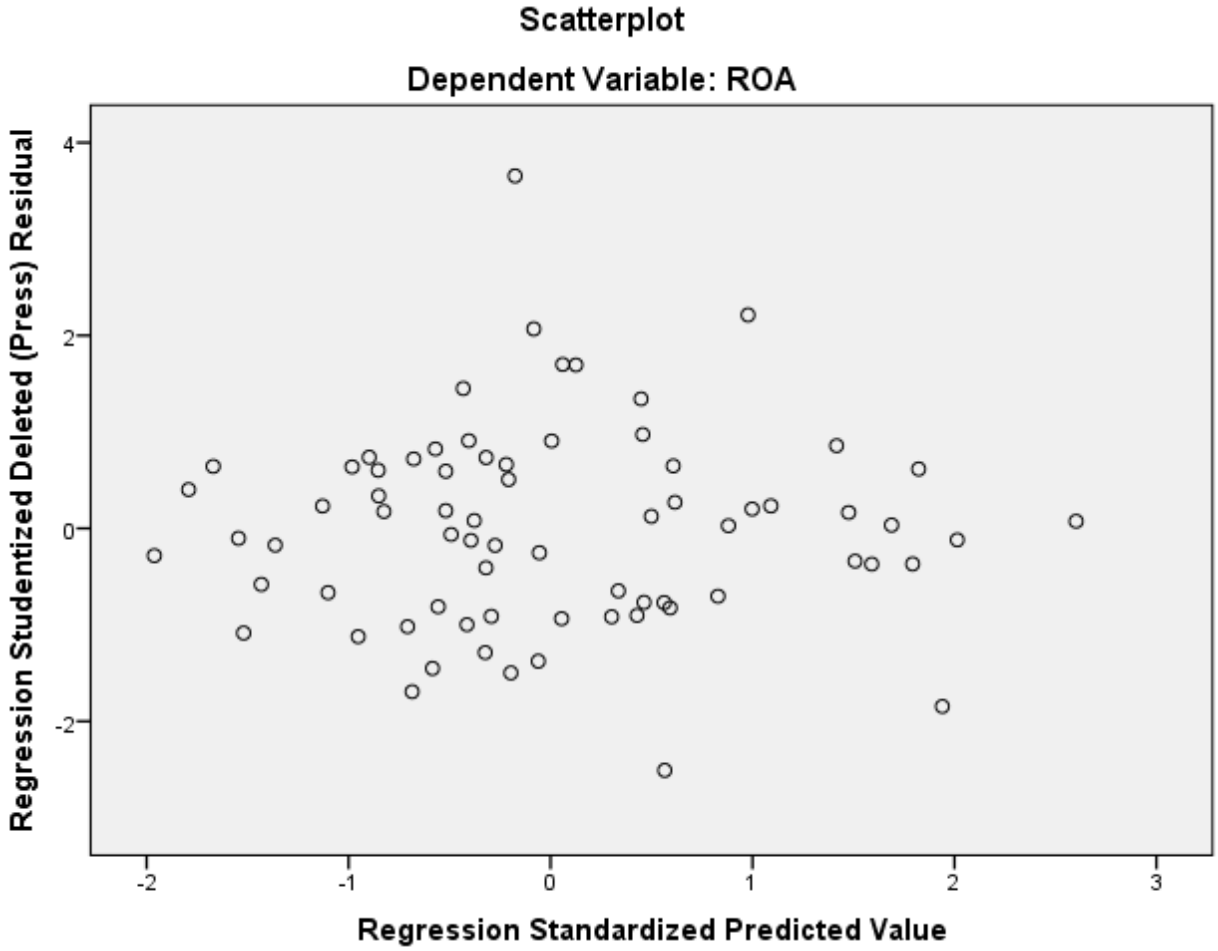

Histogram
Dependent Variable: ROE
Mean = 6.56E-16
Std. Dev. = 0.957
N = 72
Frequency
20
15
10
5
0
-2
0
2
4
Regression Standardized Residual


Histogram
Dependent Variable: ROA
Mean = 2.53E-15
Std. Dev. = 0.957
N = 72
Frequency
20
15
10
5
0
-2
0
2
4
Regression Standardized Residual


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: ROA
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: ROE
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0


Scatterplot
Dependent Variable: ROE
Regression Studentized Deleted (Press) Residual
4
2
0
-2
-3
-2
-1
0
1
2
Regression Standardized Predicted Value


Scatterplot
Dependent Variable: ROA
Regression Studentized Deleted (Press) Residual
4
2
0
-2
-2
-1
0
1
2
3
Regression Standardized Predicted Value

BN	YR	ROA	ROE	CAR	AQ	MGT	ERN	LIQ	SEN
1	2010	0.034461	0.29293	0.118358	0.028587	0.538738	0.01868	0.662068	0.64352647
1	2011	0.039936	0.320773	0.129322	0.025448	0.50418	0.018311	0.522755	0.65601195
1	2012	0.035771	0.27029	0.134906	0.0274	0.508843	0.032149	0.343357	0.72092689
1	2013	0.037884	0.280306	0.13535	0.032053	0.566554	0.035503	0.2847	0.85786696
1	2014	0.035428	0.272453	0.126091	0.031784	0.564744	0.030632	0.336466	0.89739988
1	2015	0.029401	0.229829	0.129469	0.037974	0.556283	0.034464	0.209606	0.87055507
1	2016	0.027815	0.2154	0.128861	0.039291	0.574665	0.038527	0.253692	0.90304759
1	2017	0.028033	0.236695	0.111082	0.028458	0.621192	0.039867	0.228842	0.86853783
2	2010	0.023916	0.254512	0.093238	0.012199	0.532996	0.021429	0.576394	0.55042557
2	2011	0.02669	0.290357	0.090789	0.011892	0.54482	0.028629	0.476672	0.62355501
2	2012	0.02788	0.276028	0.11003	0.011597	0.520252	0.035079	0.37261	0.71380681
2	2013	0.023552	0.214789	0.109348	4.42E-05	0.520252	0.028534	0.232012	0.81281079
2	2014	0.041804	0.339393	0.13559	0.043199	0.522066	0.037077	0.301897	0.7652303
2	2015	0.023392	0.174721	0.132471	0.063971	0.554883	0.035313	0.564241	0.54770092
2	2016	0.023647	0.183264	0.126243	0.064181	0.611691	0.038334	0.227631	0.81973137
2	2017	0.025604	0.214598	0.114702	0.048988	0.642031	0.039108	0.166143	0.87004334
3	2010	0.017984	0.14535	0.106882	0.019793	0.704211	0.026917	0.620724	0.5382651
3	2011	0.022148	0.21743	0.09831	0.025313	0.652925	0.020751	0.614566	0.53617175
3	2012	0.033062	0.307727	0.11366	0.023604	0.639221	0.030731	0.441838	0.67940209
3	2013	0.040055	0.367351	0.106441	0.037299	0.733906	0.026155	0.760998	0.51743604
3	2014	0.049412	0.384201	0.148327	0.017933	0.751907	0.043711	0.338969	0.75978173
3	2015	0.033215	0.249823	0.123094	0.017195	0.815479	0.049226	0.330751	0.79910109
3	2016	0.031668	0.265775	0.1149	0.02322	0.779216	0.055973	0.253986	0.80437193
3	2017	0.018098	0.187397	0.085592	0.021849	0.717797	0.044028	0.24424	0.81669561
4	2010	0.029344	0.318931	0.090934	0.013347	0.509583	0.01898	0.518047	0.61572684
4	2011	0.033366	0.357698	0.095254	0.013242	0.501352	0.018991	0.525768	0.60942376
4	2012	0.040523	0.404439	0.104332	0.014958	0.506988	0.027825	0.410549	0.70039826
4	2013	0.032564	0.313295	0.103594	0.016149	0.512003	0.026884	0.382363	0.72047226
4	2014	0.034164	0.306885	0.118277	0.027272	0.517302	0.025847	0.370041	0.72609474
4	2015	0.031209	0.264106	0.118071	0.027562	0.569895	0.030162	0.27909	0.79069558
4	2016	0.027261	0.231482	0.117503	0.027977	0.584434	0.027324	0.301893	0.77394041
4	2017	0.023927	0.205721	0.115322	0.024041	0.621712	0.033188	0.189137	0.86162179
5	2010	0.034507	0.184338	0.177322	0.014426	0.675511	0.026832	0.72772	0.4966439
5	2011	0.027587	0.147125	0.195187	0.011103	0.65738	0.026897	0.703486	0.51088955
5	2012	0.03531	0.189788	0.179342	0.009106	0.650746	0.030686	0.598326	0.60667446
5	2013	0.041221	0.226516	0.184182	0.009863	0.618751	0.038462	0.467045	0.67739524
5	2014	0.029464	0.165129	0.173751	0.013419	0.655792	0.037404	0.42051	0.69139291
5	2015	0.031791	0.207699	0.140309	0.011164	0.74223	0.037592	0.344469	0.75515376
5	2016	0.028065	0.207355	0.131768	0.011318	0.72219	0.044043	0.289539	0.78446209
5	2017	0.028118	0.213168	0.132006	0.010168	0.652025	0.04764	0.304428	0.7825139
6	2010	0.037281	0.244191	0.153506	0.012102	0.669291	0.029574	0.743382	0.52009664
6	2011	0.037675	0.236144	0.164613	0.010557	0.617953	0.030013	0.706591	0.52422896
6	2012	0.037204	0.212136	0.184631	0.011542	0.589383	0.034044	0.510555	0.6730713
6	2013	0.03437	0.187464	0.182177	0.013561	0.597512	0.042164	0.338809	0.77327394
6	2014	0.029899	0.163827	0.182777	0.020376	0.598386	0.035876	0.241817	0.82369104
6	2015	0.028086	0.162773	0.164249	0.023025	0.608709	0.044325	0.183923	0.86668163
6	2016	0.026802	0.166034	0.159058	0.024859	0.582282	0.047298	0.23972	0.82292842
6	2017	0.037023	0.249324	0.140538	0.024769	0.580907	0.046131	0.199916	0.85627107
7	2010	0.026709	0.120153	0.189536	0.032699	0.740813	0.013549	0.765775	0.484962
7	2011	0.028868	0.175047	0.150879	0.024934	0.662316	0.015042	0.556776	0.591602
7	2012	0.020852	0.134977	0.157022	0.028829	0.662569	0.02405	0.522954	0.629199
7	2013	0.019982	0.135851	0.140007	0.026533	0.736555	0.033779	0.393845	0.710163
7	2014	0.030582	0.237433	0.121678	0.018485	0.701753	0.036608	0.372583	0.712039

6	2014	0.029899	0.163827	0.182777	0.020376	0.598386	0.035876	0.241817	0.82369104
6	2015	0.028086	0.162773	0.164249	0.023025	0.608709	0.044325	0.183923	0.86668163
6	2016	0.026802	0.166034	0.159058	0.024859	0.582282	0.047298	0.23972	0.82292842
6	2017	0.037023	0.249324	0.140538	0.024769	0.580907	0.046131	0.199916	0.85627107
7	2010	0.026709	0.120153	0.189536	0.032699	0.740813	0.013549	0.765775	0.484962
7	2011	0.028868	0.175047	0.150879	0.024934	0.662316	0.015042	0.556776	0.591602
7	2012	0.020852	0.134977	0.157022	0.028829	0.662569	0.02405	0.522954	0.629199
7	2013	0.019982	0.135851	0.140007	0.026533	0.736555	0.033779	0.393845	0.710163
7	2014	0.030582	0.237433	0.121678	0.018485	0.701753	0.036608	0.372583	0.712039
7	2015	0.027485	0.248679	0.103329	0.019173	0.714216	0.037806	0.229739	0.827118
7	2016	0.0213	0.192519	0.116811	0.044878	0.709615	0.046677	0.229805	0.815125
7	2017	0.020916	0.193316	0.102232	0.032203	0.705257	0.035721	0.247449	0.814452
8	2010	0.033078	0.301419	0.108129	0.007236	0.603425	0.024884	0.693089	0.48582346
8	2011	0.034038	0.301293	0.116672	0.007586	0.529762	0.025116	0.586771	0.5787678
8	2012	0.036077	0.297402	0.125382	0.011157	0.532669	0.036417	0.423626	0.70313004
8	2013	0.022781	0.185626	0.120383	0.013418	0.587938	0.035507	0.25573	0.8079788
8	2014	0.018145	0.142824	0.132639	0.01901	0.590137	0.036871	0.38005	0.74416472
8	2015	0.021444	0.172508	0.117419	0.024999	0.604535	0.03915	0.230713	0.82211255
8	2016	0.021436	0.180389	0.120006	0.028279	0.577597	0.040543	0.223868	0.84093674
8	2017	0.019489	0.166393	0.114853	0.03337	0.582955	0.041741	0.193062	0.86451414
9	2010	0.04113	0.236573	0.183166	0.014415	0.694357	0.02987	0.773866	0.52459124
9	2011	0.046842	0.270634	0.165901	0.014385	0.719184	0.026629	0.695107	0.52461047
9	2012	0.040985	0.228627	0.192177	0.03703	0.643073	0.036154	0.484679	0.69288784
9	2013	0.036638	0.199919	0.176107	0.034702	0.654018	0.039742	0.36754	0.75190441
9	2014	0.028184	0.153422	0.190723	0.003097	0.655265	0.038205	0.213406	0.85367083
9	2015	0.028248	0.15463	0.176086	0.046751	0.666714	0.04102	0.247868	0.82802952
9	2016	0.025124	0.143911	0.173312	0.045738	0.675153	0.042102	0.279574	0.82412562
9	2017	0.028658	0.172737	0.160187	0.045408	0.674747	0.04193	0.278521	0.83521505

1 stands for AIB

2 stands for BOA

3 stands for CBO

4 stands for Dashen

5 stands for LIB

6 stands for NIB

7 stands for OIB

8 stands for UB

9 stands for WB