



**ST. MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES**

**THE IMPACT OF ASSET STRUCTURE
ON FINANCIAL PERFORMANCE OF
PRIVATE COMMERCIAL BANKS IN ETHIOPIA**

**BY:
EYERUSALEM TEREFE HAILU**

**JUNE 2019
ADDIS ABABA, ETHIOPIA**

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**A THESIS SUBMITTED TO ST. MARY'S UNIVERSITY
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DECLARATION

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

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ENDORSEMENT

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

Zenegnaw Abiy (PhD)

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June 2019

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List of Abbreviations and Acronyms

AbB - Abay Bank
AB - Awash Bank
AIB - Addis International Bank
ATM - Automated Teller Machine
BIB - Bunna International Bank
BOA - Bank of Abyssinia
BrIB- Birhan International Bank
CBO - Cooperative Bank of Oromia
CH - Cash on hand
DB - Dashen Bank
DGB - Dehub Global Bank
EB - Enat Bank
FA - Fixed asset
FD – Deposit with foreign banks
ICT-Information and Communication Technology
L/C- Letter of Credit
LA - Loans and advances
LIB - Lion International Bank
NBE - National Bank of Ethiopia
NBEB- National Bank of Ethiopia Bills
NI- Net Income
NIB - Nib International Bank
ODB – Other Debit Balance
OE - Owners' Equity
OIB - Oromia International Bank
OINV - Other Investment
PRO- Provision (CR)
RR- Reserve account with NBE /Reserve Requirement
SIZE – Size in TA
TA - Total Asset
UB - United Bank
WB - Wegagen Bank
ZB - Zemen Bank

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Abstract

The main goal of every banking institution is to be profitable in order to maintain stability and sustainable growth. Asset structure is viewed as the relative proportion of vital economic resources owned by the company which is expected to provide benefits. The main purpose of this study was to examine the impact of asset structure on the financial performance of selected private commercial banks in Ethiopia. This study adopted explanatory research design to understand cause and effect relation between components of asset and its financial performance. In the mean time, quantitative approach was used to construct empirical model. Secondary data was collected from thirteen private commercial banks for the period of 2011-2017. Out of sixteen, thirteen private commercial banks and seven years period were purposely selected in order to create constant panel and the availability of complete data for those banks with specific period. Return on asset was used as a measure of banks' financial performance which was dependent variable and four components of asset including cash holding, fixed asset, foreign bank deposit and NBE Bills were used as independent variables. Size of the bank was used as control variable. Pooled panel regression model was applied to analyze the data. The result indicated that cash holding has a positive but marginally insignificant effect on financial performance, fixed asset and foreign banks deposit have positive and significant effect on financial performance and NBE Bills has negative and significant effect on banks financial performance. Asset structure has a significant effect on the financial performance in the banking sector. Therefore, the banks need to optimize their asset structure so as to realize maximum profit and minimize cost of fund based on the result of the study.

Keywords: *Asset Structure, Financial Performance and Commercial Banks.*

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Chapter One

1. Introduction

1.1 Background of the Study

Financial institutions play critical role in economic resource distribution. One of the main objectives of financial institutions is to mobilize resources and channel them to investors continuously. This will only be realized when these institutions generate enough income which covers all their operational cost. In short, banks need to be profitable and have sustainable financial performance. To fulfill this sustainability and profitability, banks' asset structure plays a significant role and it is also the major contributor to the banks' income.

Banks have three financial structures in their financial statement: asset, liability and capital. An asset structure shows the composition of the bank's asset categories which are critical to its operation and profit making. Schmidt (2014) stated that asset structure is a collection of current assets; long term investments and funds; property, plant and equipment; intangible assets; and other assets. Likewise, Koralun-Bereznicka (2013) described asset structure as a combination of various asset components such as fixed assets, tangible assets, current assets and cash in hand and at bank. Maintaining optimum asset components lead the banks to become profitable.

The profit of a bank is primarily obtained in the form of interest on its income-earning assets (loans and investments). Hence, it is logical to expect banks to have a significant proportion of loans and investments in their portfolio since they carry the highest rate of return in the banking business. (Uremade, 2002)

Different researchers such as Gladys and Job (2017) from Kenya, Hanran and Wenshou, (2014) from Hong Kong, Olatunji and Adegbite (2014) and Yahaya et al, (2015) from Nigeria and other researchers have conducted studies to determine the impact of asset structure on the banks' financial performance. Based on their studies, there are various components of asset that affect banks' performance. As the result, some variables have significant while others have insignificant effect on banks' financial performance in the sector. The findings of empirical studies confirm that the asset structure determines the banks' value to a high extent.

In Ethiopian context: asset structure of commercial banks in Ethiopia constitutes of cash on hand and at bank, reserve account with NBE/ reserve requirement, deposit with foreign banks, other investment, other debit balance, net loans and advances and fixed assets (NBE, 2018).

There are some studies that have been conducted to examine effect of part of components of asset on banks financial performance in Ethiopia. Yodit (2012); Shibiru (2014); Eden (2014); Mintesnot and Semeneh, (2018) conducted studies on effect of NBE bills purchase on the banks profitability. Eskedar (2016) conducted a study on effect of investment (fixed asset, foreign banks deposit and NBE bills) on bank's financial performance measured by return on equity. Besides, Tewodros (2017) studied the effect of reserve requirement on Ethiopian commercial banks' performance; profitability and lending capacity. These studies are conducted based on components of asset such as reserve requirement, fixed asset, foreign bank deposit and NBE Bills, but do not incorporate cash holding that has impact on financial performance of commercial banks in Ethiopia. Moreover, the study of Eskedar do not measure the financial performance based on return on asset (ROA).

Previous studies are not considered all components of assets. Accordingly, it is very essential to study the impact of asset structure on the financial performance of private commercial banks in Ethiopia by considering cash holding, NBE Bills, fixed asset and foreign banks deposit as components of asset that effect on the bank's financial performance which is measured by return of asset (ROA). Hence, this research seeks to determine and evaluate the extent of which components of asset has an impact on the financial performance of selected private commercial banks in Ethiopia.

1.2 Background of Banking in Ethiopia

Over the last 15 years, Ethiopia has seen a sustained economic growth which led to improvements in income and poverty reduction. The country's economy shows 9.3% average annual growth during 2013/14 - 2017/18 fiscal years but this growth is reduced to 7.7% in 2017/18 fiscal year (NBE, 2018).

As per the annual report of NBE (2018), Banks, insurance companies and microfinance institutions are major financial firms operating in Ethiopia. They are contributing significantly to micro and macro economic growth of the country. The number of banks operating in the country is 18, of which 16 are private and 2 are state-owned.

During the fiscal year 2017/18, total capital of the banking industry increased by 10% and reached Birr 85.8 billion. Moreover, total resources mobilized in a form of deposit, borrowing and loan collection reached Birr 298.2 billion in the same fiscal year and private banks constitute 35.5%. The banks' loan collection only reached Birr 111.6 billion, of which 58% was collected by private banks while disbursed Birr 115.4 billion in fresh loans about 58.2% was provided by private banks and 41.8% by the two public banks. Total outstanding credit of the banking industry including to the central government reached Birr 449 billion, the share of private sector in outstanding credit was Birr 284.5 billion. Thus, banking sector has played a valuable role in sustaining growth in the economy. (NBE, 2018)

The National Bank of Ethiopia (NBE) is the only regulatory government body that has a mandate to provide a direction to all financial institutions in Ethiopia. The NBE has issued different directives to financial institutions as risk management system and controlling modalities.

Regarding the NBE directive on limitation on loans and advances that stated aggregate sum of loans and advances extended to any one person who is not related to commercial bank shall not exceed 25% of total capital of the bank. On the contrary, aggregate sum of loan and advances extended to anyone who is related party (shareholders of the commercial bank with holdings of 2% or more of bank's subscribed capital shall treated as related party) at one time shall not exceed 15% of the total capital of the bank. Moreover, the aggregate sum of loan and advances extended to all related parties at any one time shall not exceed 35% of the total capital of the commercial banks (NBE, 2012).

Any bank operating in Ethiopia shall at all times maintain in its reserve account shall exclusively be used to maintain the reserve balance of 5% of all Birr and foreign currency deposit liabilities held in the form of demand/current deposits, saving deposits and time deposits. No bank shall withdraw any money from its reserve account without prior approval of the bank Supervision Directorate of NBE (NBE, 2013).

Moreover, liquid assets include cash in foreign and local currency, deposit with NBE/reserves, deposit with other local and foreign banks and treasury bills. Total liquid assets should be 15% or more of net current liabilities (NBE, 2014).

The amended directive to set out a limitation on fixed asset investment on the banks asset shall not invest more than 10% of its net worth or total paid up capital in real estate acquisition and development. Likewise, banks are permitted to invest in other business (non-banking) 10% of the banks' capital. Besides, on investment on other firms and limit the scope of allowable economic activities to be carried out by the banks are investment limitations (NBE, 2015). In addition, since 2011, the NBE has enforced banks to purchase of bills 27% of every loan they disburse with 3% interest rate and later amended to 5%, shall have a maturity period of five years (NBE, 2018).

The most important rationale for regulation in banking industry is to address concern over the safety and stability of financial institutions and the financial sector as a whole. (Bonn 2005) Stable banking system benefits a nation, institution as well as to shareholders. The regulatory agencies to maintain control over the standardized practices of government regulation and supervision of banks promotes the safety and soundness in order to protect payment system on deposit threatening, fear banks' solvency and reduce liquidity risk. (Barth et. la, 2006)

This study focuses on the asset side of Banks' balance sheet: specific variables such as cash holding, fixed asset, foreign banks deposit and NBE bills that impact on the banks financial performance of listed private commercial banks in Ethiopia. In line with these factors, there are directives enforced to act accordingly and these are imperative tools for risk management. Hence, the standardized practices of government regulation govern the banks to hold sufficient and diversifies assets components so as to secure credit efficient, profitability, competitive financial system, monitoring and financial stability.

1.3 Statement of the Problem

Banks have organized their portfolio assets in a way that influence its profitability. Wherever there is space to improve profitability, banks will surely exploit that area for increasing their profit. Assets of bank are divided into two categories earning assets and non-earning assets: earning assets are assets on which the banks earn some sort of profit and contribute directly to the banks' income. Whereas, non-earning assets are not earn profit but indirectly contribute to the banks income. Optimization of banks' asset structure is difficult to manage because of the

interest of different stakeholders such as creditors, depositors, shareholders and regulatory body especially using capital and liquidity constraints on the banking industry.

According to Gladys and Job (2017), and Hanran and Wenzhou (2014) in commercial banking industry; property, plant and equipment, long term investments, current assets and intangible funds are considered as independent variables while financial performance is dependent variable. Result of their studies concluded that property, plant and equipment, and long term investments have positive and significant effect on financial performance while current assets and intangible assets do not have significant effect on financial performance. Another study conducted by Olatunji and Adegbite (2014) carried out the study on the effect of fixed asset investment on banks' performance and the result of the study verified that fixed asset has positive and significant impact on the banks profitability.

In Ethiopia, there are some studies that have been conducted by different researchers to examine effect of components of asset on banks financial performance in Ethiopia. Eskedar (2016) studied on effect of investment on bank's financial performance (based on return on equity). Tewodros (2017) conducted on effect of reserve requirement on Ethiopian commercial banks' performance, profitability and lending capacity. Mintesnot and Semeneh (2018) studied on impact of NBE bills purchase on credit performance and profitability of private banks. Other researchers Yodit (2012); Shibiru (2014); and Eden (2014) also conducted studies on impact of NBE Bills on the private commercial banks' financial performance. The result of these prior studies indicated that fixed asset investment and foreign banks deposit have positive and significant effect on financial performance of the banks. On the other hand, purchase of NBE bills has negative and significant effect on the financial performance of commercial banks in Ethiopia.

More often asset generates the major share of the banks income even if the quality of loan portfolio determines the profitability of banks (Dang, 2011). To the best knowledge of the researcher, these prior studies are not inclusive all components of assets. None of the studies above considered cash holding as an asset component that effect on the financial performance of private banks in Ethiopia. In addition, financial performance was not measured by return on asset.

In view of the research gap identified above, the objective of this study is to determine the components of asset that have impact on banks' profitability and seek to evaluate the extent of which components of asset have effect on the financial performance of private commercial banks in Ethiopia. The researcher focuses on four components of asset such as cash holding, foreign banks deposit, NBE bills, and fixed asset considered as independent variables that have impact on the bank's financial performance (return on asset) considered as dependent variable in line with the restriction/limitation of the regulatory body. Hence, this study seeks to fill the gap by addressing the impact of asset structure on the banks' financial performance in Ethiopia.

1.4 Research Questions

This study attempts to address the following questions:

- ✓ What is the impact of cash holding on the financial performance of private commercial banks?
- ✓ What is the impact of fixed asset on the financial performance of private commercial banks?
- ✓ What is the impact of foreign banks deposit on financial performance of private commercial banks?
- ✓ What is the impact of NBE bills on the financial performance of private commercial banks?

1.5 Objectives of the Study

1.5.1 General Objective

The overall objective of the study is to examine the impact of asset structure on the financial performance of selected private commercial banks in Ethiopia.

1.5.2 Specific Objectives

The specific objectives of this research are:-

- ✓ To determine the effect of cash holding on the banks financial performance.
- ✓ To analyze the impact of fixed asset on the banks financial performance.
- ✓ To examine the impact of foreign bank deposit on the banks financial performance.
- ✓ To determine the impact of NBE Bills on the banks financial performance.

1.6 Hypotheses of the Study

In order to achieve the objective of the study, a number of hypotheses are developed concerning the impact of asset structure on financial performance of Ethiopian private commercial banks based on different theoretical and empirical research review made.

Cash Holding

Cash and bank balances constitute the amount of cash available to the bank for daily operations. Cash equivalents are short term liquid investments that are ready to convert into cash and subject to an insignificant risk of changes in value.

The banks have to possess enough funds to meet its financial obligations and not profitable when keeping excessive amount of cash for unexpected circumstances as this idle money could have been invested elsewhere to generate returns. This reduces the growth of business and it has impact on profitability. Even investing cash for a short period of time could add to the profits of the business (Watson and Head, 2007).

The amount and quality of cash and bank balances could improve the income of a bank and increase the bank's financial performance. This cash and bank balances have a positive impact on the financial performance of deposit money banks in Nigeria (Yahaya et al., 2015).

- ✓ H1: cash holding has positive and significant effect on financial performance of private commercial banks in Ethiopia.

Fixed Asset

According to Gladys and Job (2017), components of asset such as property, plants and equipment, and long-term investments and funds have a statistically significant effect on bank's financial performance. Based on the study's finding, they recommended that all financial and services firms should increase their allocation of resources towards long term investments and funds so as to improve their financial performance in Kenya. The regression result verified that fixed asset investment has a positive and significant effect on performance of the banks.

A study by Olatunji and Adegbite (2014) examined the effect of investment in fixed assets on profitability of selected banks in Nigeria. The relationship between this variables indicated that

there is a significant relationship between them. The study findings have indicated that investment in fixed assets have positive and significant effect to the performance of the selected banks: the higher the level of investment in fixed assets, the higher the profit of banks.

NBE has allowed banks with limited percentage of amount to invest on fixed assets up to 10% of bank's paid up capital, this refers to the business of buying and developing properties consistence of building for facilitating their own operation or for resale. As per the study of Eskedar (2016), the regression result verified that fixed asset investment has a positive and significant effect on banks performance in Ethiopia.

- ✓ H2: Investment in fixed asset has positive and significant effect on financial performance of private commercial banks in Ethiopia.

Foreign Bank Deposit

Banks are authorized to deposit their excess cash in other foreign banks in order to facilitate their services and also to generate an additional interest income. Foreign deposit is measured by the total amount of money that the banks' deposit in foreign banks in a given time. The empirical result indicated that foreign bank deposit has a positive and significant effect on banks performance in Ethiopia, (Eskedar 2016).

- ✓ H3: Foreign bank deposit has positive and significant effect on the financial performance of private commercial banks in Ethiopia.

NBE Bills Purchase

NBE has issued directive of NBE Bills to private commercial banks to allocate assets is equal to 27% of their total disbursement to finance on priority sector. The banks are forced to redirect their disbursement to the purchase of NBE bills which earns 5% interest (Yodit, 2012).

Eden (2014) studied on impact of NBE-Bills purchase on the banks performance. The study indicated that NBE-Bills purchase has negative impact due to the lesser amount of interest rate earn compared to operational cost spent.

Shibiru (2014) concluded in his study that implications of bills purchase directive of NBE is negatively impacted on almost all private commercial banks' performances. The study revealed

that the negative implication of bills purchase directive on the profitability, liquidity, capital and reserve of private commercial banks.

Eskedar (2016) concluded that NBE Bills purchase has a negative and significant effect on the performance of commercial banks in Ethiopia. Thus, these variables are interrelated and it has negative and significant impact on banks' performance in the banking industry.

According Mintesnot and Semeneh, (2018), the impact of NBE bills on profitability of private banks in Ethiopia, found that strong and negative correlation is observed between NBE Bills and profitability of private commercial banks in Ethiopia.

- ✓ H4: NBE Bills has negative and significant effect on the financial performance of private commercial banks in Ethiopia.

1.7 Significance of the Study

This study seeks to create some insight about the impact of asset structure on the financial performance of selected private commercial banks in Ethiopia. It is also verified the impact of each components of asset on the performance of the listed banks.

Therefore, this study is expected to provide empirical evidence on components of asset structure that affect banks performance and contributes as an indicator to management of NBE who are policy makers to pursue amending the directives and issue to the commercial banks for implementing so as to improve banks' operations. Moreover, it may also use the banks' managements how to make a decision to optimize asset structure that improves the bank's profitability. Finally, lack of research on this topic in the country's framework thus, this study is enough to give academic insight to further studies in this area.

1.8 Scope of the Study

The research basically focused on examining each component of asset structure and their impact on the financial performance of commercial banking in Ethiopia. It also determined the components of asset and to what extent they affect the banks financial performance. Return on asset is used to measure the banks financial performance.

The study considered secondary data of all private banks' audited financial statements and related directive from National Bank of Ethiopia (NBE). The study used cross sectional data of thirteen private commercial banks which are established before 2010 and also used time series data that cover a period from year 2011 to 2017 due to the availability of complete audited financial statements.

1.9 Limitation of the Study

According to Gladys and Job (2017), the study of asset structure is not that much popular compared to capital structure, thus difficult to conduct a study with limited theoretical review. But there are some empirical studies which support to conduct this study. The period of review has been limited to seven years from 2011 to 2017 due to the data availability. In addition, the research consists of thirteen private commercial banks that operate in Ethiopia more than ten years. The study has excluded three private banks that have started operation after 2010 or operation less than ten years in the banking industry. Besides, these three banks' total asset, profitability and amount of each component are very small or far beyond with the amount of the selected thirteen private banks.

Moreover, all of the audited financial statements used for the study are collected from NBE and the statements are consolidated by the NBE itself by their own template. Recent financial statements of the selected banks at the end of June 2018 are not included in the study because NBE does not consolidated until the study of the data analyzed. Thus, the study was not included financial statements as of June 2018.

The researcher conducted this study including all components of asset such as cash holding (CA), reserve account with NBE/ reserve requirement (RR), foreign banks deposit (FD), other investment (OINV), other debit balance (ODB), net loans and advances (LA) and fixed assets (FA); however, during multiple regression analysis was developed to identify the joint effect of independents variables on dependent variable, expect cash holding, NBE bills, fixed asset and foreign bank deposit, other components like reserve requirement, loans and advances, other investment and other debit balance were insignificant effect on banks' financial performance in Ethiopia. In addition, limited number of observation also reduced the degree of freedom for

hypothesis testing. Thus, this study is concluded the result of four asset components that have impact on banks' financial performance in Ethiopia.

1.10 Organization of the Study

The study is structured in five chapters. The first chapter covers an introduction of the study. Chapter two has contained a review of related literature. The research design and methods include in chapter three. In chapter four, the result and finding of the study discuss. Finally, the last chapter has enclosed the conclusion and recommendation.

Chapter Two

2. Literature Review

This chapter explores the theoretical foundation of the impact of asset structure on the financial performance of commercial banks in Ethiopia. The review has theoretical aspects related to assets components and its financial performance, an examination of previous research studies on the subject matter in empirical review, a conclusion from the literature review indicates the gaps the research is addressing. Finally, it shows the conceptual framework of the study.

2.1. Theoretical Literature

This section reviews the basic theoretical issues related to asset structure and financial performance of private commercial banks. Asset structure has been defined by different scholars based on the method of the study is used. According to ZhengSheng and NuoZhi, (2013), asset structure shows the allocation of the resources and has different components such as: turnover assets, production assets and wasting assets. The components are regulated by a government body to maintain control and standardized practices. In addition, the government regulations and supervisions over banks are aimed at promoting safety and keep soundness of financial institutions and the financial sector at large. Creating stable banking system benefit the nation, institution as well as to shareholders. Hence, the main objective of regulation and supervision in the banking industry is to overcome the moral hazard problem in the banking sector and creates sufficient and diversifies assets components.

Portfolios are constructed from a basis of selected assets that maximize for investors wealth and minimizes their risks. Determining the universe of stocks that seems interesting to get in a portfolio is done by financial analyst. That is what is about portfolio theory that a good theory should produce well diversified portfolio, to decrease risks and volatility of the portfolio. (Simon 2010).

2.1.1 Asset Structure

✓ Traditional Portfolio Theory

Theory requires basic knowledge and understanding in the field of the financial investments in order to manage a portfolio in a manner that it is profitable and valuable. It has to know how to consider and exploit different variables that affect the investment. Prior to Markowitz work, investors focused on assessing the risk and return of individual securities in constructing their

portfolios. In order to mitigate the risk associated with any single stock, the idea was to diversify the portfolio by selecting a number of low risks with high return stocks (Darok, 2012).

Management of investment portfolio is what an investment portfolio is and what the different financial factors that affects it. In order to succeed in managing the portfolio in a wise manner, shouldn't invest the entire amount in one course. It is recommended to scatter the investment in a number of different courses to decreases the risks while increase return. Traditional portfolio planning emphasizes on the character and the risk bearing capacity of the investor. To investment decision first investors are willing to make a foundation of tradeoff between expected return and risk. Asset allocation methods that extend the traditional approach are good references of Scherer (2004) and Brandt (2004) in the study of Peñaranda, (2007).

✓ **Markowitz Theory**

Modern portfolio theory is based on several key concepts, some of which have been recognized with the Noble prize in economics. According to Darko, (2012) Markowitz's breaking research on portfolio optimization in March 1952 in an article titled, "portfolio selection" in the journal of finance afforded him to be called the father of modern portfolio theory.

As per Girishina, (2012) Harry M. Markowitz has introduced a modern portfolio theory on risk averse investors can construct portfolios to optimize expected return based on a given level of market risk. Markowitz model is a theoretical framework for analysis of risk and return and their relationships by selection the proportions of various assets in the portfolio so as to maximize an expected return with the least risk. It indicates that an investor will take more risk only if he or she is expecting more reward. He came up with on his model two types of assets: risky asset and risk free assets.

Darok, (2012) determined that one of the principal objectives of investors is to diversify their portfolio based on risk diversification in addition to maximize their returns. The investors select assets in such a way that the risk of their portfolio matches with their risk preferences. An investor then chooses how much risk to take on by investing less in risky assets in order to maximize its profit. In order to select combination of asset with maximize expected earnings, initially, standard deviation measures and it computes with expected return on portfolio of assets. In theory, the higher the risk take, the higher the return would be earn; thus, investors are

compensated for bearing risk. It shows that an investor can construct multiple assets portfolio that will maximize returns for given level of risk.

One of the Markowitz biggest contributions to the financial theory is the concept of diversification as a way to reduce risk. The optimal portfolio can be chosen in accordance with the investors' preferences and their attitude towards risk and return. Both scientific thoughts from previous years and his followers have encouraged Markowitz to conceptualize the framework of portfolio selection and led to the solution of the portfolio optimization problem (Girishina, 2012).

✓ **Balanced Portfolio Theory**

There is a theoretical explanation about asset structure that is the most relevant and plays an important role in bank performance (Nzongang and Atemnkeng, 2006). Based on the portfolio balance model of asset diversification, holding optimum of each asset in the portfolio is a function of policy decisions determined by a number of factors such as risks associated with the ownership of each financial asset, the size of the portfolio and rates of return on all assets held in the portfolio. It becomes clear that risk minimization is at least as important as profit maximization.

The main contribution of portfolio theory to bank management of asset structure is maintaining optimal asset structure of the bank depends on the profitability of assets adjusted by the levels of risk. The banks managements make a decision on portfolio diversification and the desired portfolio composition of commercial banks. Besides, obtaining maximum profits is determined by the bank's management to set assets and liabilities structure; and incurred the unit costs to produce each component of assets (Nzongang and Atemnkeng, 2006).

According to Weston and Brigham within Husnan (2005) assets structure is balance between fixed assets and total assets. Meanwhile, Syamsudin (2007) stated that the structure of assets is determination of how much the allocation of funds for each component of assets, both in current assets and in fixed assets. Titman and Wessels (1988) in Kesuma (2009) defined as assets structure is economic resources that consist of fixed assets, intangible assets and current assets owned by the company which is expected to provide benefits in the future.

To concluded, the Markowitz's idea of minimizing risks for a given level of return is still widely accepted. Asset allocation is today a topic of real significance and all investors want to invest in the winning combination of assets. This combination should give them the maximum level of return for the level of risk they are able to take.

2.1.2 Components of Asset Structure

In line with Koralun-Bereznicka (2013) study, asset structure is a combination of various asset components such as fixed assets, tangible fixed assets, current assets and cash in hand and at bank. Similarly, Schmidt (2014), described asset structure in terms of current assets, long term investments and funds, property, plant and equipment, intangible assets and other assets. Mawih (2014) on the other hand defined assets structure theoretically as a component of fixed assets and current assets. As the result, some assets are earning assets which mean they are major contribution to the banks income and others are non-earning assets.

In Ethiopian context, asset structure is components of cash on hand and at bank, reserve account with NBE, deposit with foreign banks, NBE bills, other investment, other debit balance, net loans and advances and fixed assets, NBE (2018). Bank's asset attracted both theoretical and empirical interest and several studies attempt to examine how the asset structure framework influences the financial performance of commercial banks. From the definitions given by previous researchers, asset structure of firms describes in which a mixture of various types of components of asset that increase profit in different level. Hence, proportionate relation among components of assets and its impact of banks' financial performance have been examined.

✓ Cash Holding

Cash and bank balances constitute the amount of cash available to the bank for daily operations. It is generally accepted as cash on hand and cash equivalent such as bank drafts, demand deposits, cheques, treasury bill, bond and cash balances including cash and restricted and non restricted deposits with the central bank. Cash equivalents are short term liquid investments that are readily convertible to cash with original maturity of three months or less (Yahaya et la., 2015).

The banks have to possess enough funds to meet its financial obligations. When keeping excessive amount of cash for unexpected circumstances as this idle money could leads to incur

loss because of cost of fund while keeping lower amount of cash face a shortage of operating cash. These excess amounts of cash have to invest elsewhere to generate returns. Management of cash is important to optimize the amount of cash available, obtain maximum benefit from return on idle funds and minimizing losses caused by delays in the transmission of funds. This reduces the growth of the business and it has impact on profitability. Even investing cash for a short period of time can add to the profits of the business (Watson and Head, 2007).

✓ **Fixed Assets (FA)**

Profits can be generated by investing in fixed assets like land, building, plant and machinery, fixtures, fittings and motor vehicle enhances the productive capacity of firms to ensure long term profitability. This category of assets does not change frequently and they are purchased to produce and sell more. Assets have significant role in determining the efficiency and the profit ratio of a firm. Since a firm acquires plant and machinery and other productive fixed assets for the purpose of generating sales. Therefore, efficiency in the use of fixed assets should be judged in relation to sales (Olatunji and Adegbite, 2014).

Pandey, (1999) used fixed asset turnover ratio to evaluate utilization of fixed assets investment and he also identified which firm is utilizing its investment in fixed assets efficiently or not. High fixed assets turnover ratio indicates efficient utilization of fixed assets in generating sales, while a low ratio indicates inefficient management on utilization of fixed assets. Likewise, Ibam (2007) also stated that fixed asset turnover ratio show asset turnover trend of the firm and used as comparison of the competitors in the industry. This gives the investor an idea of how effectively a company's management is using fixed asset. It is a rough measure of the productivity of a company's fixed assets with respect to generating sales.

National Bank of Ethiopia has allowed banks with limited percentage to invest on fixed assets (10% of the total paid up capital), this included buying and developing properties to facilitate their own operation or for resale. It is measured by the total amount of investment on fixed asset.

Banks have the opportunity to invest in fixed asset that relate to their objective to generate profit. Banks can invest on fixed asset such as building to expand its business, information communication technology in order to facilitate their service in advanced and reliable way, and invest on machines like automated teller machine (ATM) is electronic telecommunications

device that enables customers to perform financial transaction at any time and increase market share which contribute to increase the banks' profitability (Eskedar, 2016).

✓ **NBE-Bills/Investment**

National Bank of Ethiopia has introduced NBE bills in April 2011. The bills require private commercial banks to purchase 27% of their total disbursement for priority sector financing. The banks are forced to redirect their disbursement to the purchase of NBE bills which earns 5% interest (Yodit, 2012). This represents amount of forced bills purchase by a bank is measured as total amount of investment in NBE-bills. Eden (2014) studied on impact of NBE regulation on the banks performance; one of her objective was to determine the impact of NBE bills on banks performance as measured through both return on asset and net interest margin.

Yodit (2012), studied on the implication of NBE directive of bills purchase on performance of private commercial banks in Ethiopia. Based on her study, the government intervened in the financial sector in which directive affects the performance of the banks. The government issued the directive to increase the private banks participate in priority sector financing and also to control the inflation challenge.

Another study was conducted by Shibiru, (2014), the objective of his study was to examine the implications of NBE bills purchase directive on the development of private commercial banks in Ethiopia. The study revealed that negative implication of bills purchase directive on the profitability, liquidity, capital and reserve of private commercial banks.

✓ **Foreign Bank Deposit**

Banks are allowed to deposit their cash in other foreign banks in order to facilitate their services and also to generate an additional interest income. No restriction on the banks on amount of money that they can deposit on foreign banks. But they should report there amount of deposit on their liquidity position weekly basis to NBE, (NBE directive No SBB/57/2014). The banks have more foreign deposit might have earning much more interest and easily facilitate the operation with correspondent banks. Foreign bank deposit is measured by the total amount of money that the bank's deposit in foreign banks in a given time (Eskedar, 2016).

✓ **Loans and Advances**

It means any financial assets of a bank arising from a direct or indirect advance or commitment to advance funds by a bank to a person that are conditioned on the obligation of the person to repay the funds, either on a specified date or dates on demand with the interest (NBE, 2018).

Loans and advances to customers consist of overdraft, term loans, advances and commercial papers. The general creditworthiness of a corporate customer tends to be the most relevant indicator of credit quality of a loan extended to it. However, collateral provides as a security and banks generally request to the borrowers provide it. The bank may take collateral in the form of a first charge over real estate and other form of guarantees. Loans and advances to customers are net of charges for impairment. The amount and quality of loans and advances to customers can improve the interest income of a bank and thus increase the bank's financial performance (Yahaya et la., 2015)

✓ **Reserve Requirement**

Any bank operating in Ethiopia shall at all times maintain in its reserve account shall exclusively be used to maintain the reserve balance of 5% of all Birr and foreign currency deposit liabilities held in the form of demand/current deposits, saving deposits and time deposits (NBE directive No.SBB/55/2013). The main purpose of the reserve requirement is to control growth in the money supply.

Reserve requirement is regulatory tool that control liquidity position of banking institutions. It is normally held at the central bank in the form of cash or highly liquid document. When there is a deposit, the regulation usually specifies the size of the requirement determined by the type of deposit (current, saving or time deposit) and its currency denomination (domestic or foreign currency) (Jembere, 2014).

Commercial banks have to open a reserve account in NBE and shall deposit money as per the regulation. The reserve account does not have interest income and the NBE also penalize the banks if the reserve account is in deficit (Eskedar, 2016).

2.1.3 Financial Performance

✓ The Efficiency Theory

The efficiency hypothesis, considers that banks earn high profits because they are more efficient than others. There are also two distinct approaches within this theory; the X-efficiency and Scale–efficiency hypothesis. According to the X-efficiency approach, more efficient firms are more profitable because of their lower costs. Such firms tend to gain larger market shares, which may manifest in higher levels on market concentration, but without any causal relationship from concentration to profitability. The scale efficiency approach emphasizes economies of scale rather than differences in management or production technology. Larger firms can obtain lower unit cost and higher profits through economies of scale. This enables large firms to acquire market shares, which may manifest in higher concentration and then profitability (Athanasoglou et al., 2006).

Most literature on bank's profitability agrees that profitability is expected to increase as its portfolio of loans grows in relation to other more secure assets increase by considering relationship between risk and return (García-Herrero et al., 2009).

Profits are a necessity and a goal for many firms. Finance managers mostly direct their efforts towards this goal in order to grow and fulfill shareholders' expectations. The role of commercial banks has remained mediator in financing economic activities in various segments of the markets (Munyambonera, 2010). To do so, the banks must be profitable (Ongore and Kusa, 2013). Hence, profits are not only a result but also necessity for successful banking in any financial markets.

According to Warren (2005) financial performance of banks is expressed in terms of profitability which has no meaning except in the sense of an increase of net asset. Profitability is a company's ability to earn a reasonable profit on the owner's investment. Most organizations exist is to earn profit and profitability ratios show a company's overall efficiency and performance. We can divide profitability ratios into parts: profit margin and returns. Ratios that show margins represent the firm's ability to translate into profits at various stages of measurement. Ratios that show returns represent the firm's ability to measure the overall efficiency of the firm in

generating returns for its shareholders (Bessis, 2005). The most popular profitability measurements are: profit margin on sale, return on asset and return on equity.

Financial performance refers to the act of performing financial activity. The financial performance measures in this study uses return on assets (ROA) (Ganesan, 2007) and (Kavita, 2009). The profit of a bank is primarily obtaining in the form of interest on its income-earning assets. Hence, it is logical to expect banks to have a significant proportion of loans and investments in their portfolio since they carry the highest rate of return in the banking business (Uremade, 2002).

The most popular profitability measurement formula is: $\text{Return on asset} = (\text{Net Income} / \text{Total Assets}) * 100$

A profitable business has the ability to reward its owners with a large return on their investment. Increasing profitability is one of the most important tasks of the business managers; these ones look for the way to improve profitability (Yahaya et la., 2015).

Return on Assets (ROA) shows the percentage of profit that a company earns in relation to its overall resources (total assets). The ROA reflects the ability of banks' management to generate profits from the banks' assets and is expressed in percent. The best formula to measure the bank profitability is ROA, because it represents the ability of a firm to generate returns on its portfolio assets (Kosmidou, Naceur and Goaid, 2008). ROA indicates the profit earned per unit asset and which is most important, it shows the management's ability to utilize the bank's financial and real investment resources to generate profits (Blerta, 2014).

Golin (2001) pointed out that the ROA has emerged as a key ratio for the evaluation of bank profitability and has become the most common measure of bank profitability in the literature. Therefore, ROA is considered as more significant and a better profitability measure (Blerta, 2014).

2.2 Empirical Review

Most empirical studies on the relationship between asset structure and financial performance of commercial banks have carried out across countries and some studies are also conducted in Ethiopia.

2.2.1 Cross Country Studies

An asset structure is important to determine the allocation of each asset that must owned. Empirical evidence has concluded that the study of asset structure is significant to the business organizations. ZhengSheng and NuoZhi (2013) contended that the research of assets structure has more practical value and universal significance than capital structure as they are the main source of creating corporate value and avoid risks. In line with the results of this study, on the optimal allocation of asset structure and business performance with an objective to evaluate relationship between them, the study concluded that asset structures' research have more application value and significant meaning in China. Gladys and Job (2017) also concluded that asset structure has a significant impact on the financial performance in the banking sector in Kenya.

Titman and Wessels (1988) in Kesuma (2009) revealed that asset structure is the wealth or economic resources owned by the company which is expected to provide benefits in the future consisting of fixed assets, intangible assets, current assets and non-current assets. It had concluded that asset structure influenced positive and significant impact on earnings in Indonesia.

The amount and quality of cash and bank balances can improve the banks' profitability and increase the bank's financial performance. Cash and bank balance, financial assets held for trading, loans and advances to the customers, and derivate asset have positive impact on the banks performance (ROA), (Yahaya et la., 2015).

A study by Olatunji and Adegbite (2014) examined the effect of investment in fixed assets on profitability of selected banks in Nigeria, the relationship between this variables indicated that there is a significant relationship between them. The findings of the study indicated that investment in fixed assets has positive and significant impact on the performance of the selected banks: the higher the level of investment in fixed assets lead the higher the profits of banks are. Hence, in order to improve bank profitability there should be efficient management of fixed assets. The study finally concluded that Nigerian banks should improve the level of fixed assets investments in terms of building, ICT and machine in order to boost their profitability.

The components of asset such as property, plants and equipment, and long-term investments and funds have a statistically significant and positive effect on financial performance, whereas current assets and intangible assets do not have statistically significance effect on financial performance. In light of the study findings, it recommended that all financial and services firms should increase their allocation of resources towards long term investments and funds so as to improve their financial performance in Kenya (Gladys and Job, 2017). The result of current asset is consistence with the findings of Mawih (2014) that is current assets do not have statistically significance effect on financial performance.

2.2.2 Review of Previous Studies in Ethiopia

In Ethiopia, some related studies have been conducted to examine the impact of asset components on profitability of commercial banks in Ethiopia. Different researchers such as Yodit (2012); Shibiru (2014); Eden (2014); Eskedar (2016); Tewodros (2017); and Mintesnot and Semeneh (2018) conducted exploratory studies to examine the impact of components of asset on the banks performance.

Yodit (2012) studied on the implication of NBE directive of bills purchase on performance of private commercial banks in Ethiopian. The government has intervened in the financial sector in which directive affects the performance of the banks. The result of her study indicated that directive of NBE bills purchase has negative implication to the banking sector.

In line with Shibiru (2014), study on the implications of NBE bills purchase directive on the development of private commercial banks in Ethiopia. He concluded that the implications of bills purchase's directive of NBE is negatively reflected on almost all private commercial banks' performances. The directive of NBE bills purchase has negative effect on the potential growth of rate of assets and asset portfolio of the banks.

Eden (2014) studied on the impact of NBE regulation of the bank performance: evidence from the private banks of Ethiopia. Her study focused on impact of NBE-Bills purchase on the banks performance and it indicated that NBE-Bills purchase has negative impact on private banks performance due to the lesser amount of interest rate earned compared to operational cost spent.

Eskedar (2016) studied on the impact of investment on performance of commercial banks in Ethiopia. Her study overall tried to cover different investment areas that Ethiopian banks are allowed investing to generate income. The regression result verified that fixed asset investment and foreign bank deposit has a positive and significant effect on performance of the banks. On the other side, NBE Bill purchase has a negative and significant effect on the performance of commercial banks in Ethiopia. Thus, these variables of asset are interrelated and have significant impact on banks' performance in the industry.

Tewodros (2017) studied a research on effect of reserve requirement on Ethiopian commercial banks' performance; profitability and lending capacity. He concluded that reserve requirement has negative and significant effect on banks profitability.

According to Mintesnot and Semeneh (2018), the impact of NBE bills on profitability of private banks in Ethiopia, the study found that negative correlation was observed between NBE Bills and profitability of private commercial banks in Ethiopia. This implied that the current government bond purchase directive has negative effect on the credit performance and profitability of private banks in Ethiopia.

In general, empirical review verified that the studies of the components of assets influencing the banks financial performance are not inclusive all the components of asset structure. In addition, financial performance is measured by return on equity when the study has conducted on the impact of investment (fixed asset and foreign banks deposit) on financial performance of private banks in Ethiopia. Therefore, based on these studies, the researcher included cash holding as additional variable that affect the banks performance in Ethiopia. Moreover, in this study, the financial performance is measured by return on asset.

2.3 Control Variables

One of the variables that influence the banks' profitability is bank size which considered as control variable.

2.3.1 Bank Size

According to Smirlock, (1985) bank size is one of the control variables used in analyzing bank performance in the bank system. It helps to control for the possibility that large banks are likely

to have greater product and loan diversification. In large size banks increase diversification which implies less risk and bank size takes an advantage of economies of scale.

Bank size is specific determinant of bank profitability and it is measured by the ‘logarithm of’ total assets. Bank size is generally found to relate positively to bank profitability (Kosmidou, 2008). Most of the previous studies have many evidences of which bank size is one of the main determinants of bank profitability and has positive impact on the banks performance.

The Bank size is introduced to account for existing economies of scale in the banking industry. The relationship between size and profitability is an important part of the firm’s theory. Since larger banks are more capable to realize economies of scale and reduce the cost and processing information (Dietrich and Wanzenried, 2011).

The studies of Pasiouras and Kosmidou (2007) indicated that positive and significant relationship between size and bank profitability. Large banks might have a higher degree of production and loans diversification than smaller ones. According to Khrawish et al., (2011), there is significant and positive relationship between ROE and bank size.

In most studies in context of Ethiopian respect of determinants of banks performance, researchers used banks size as a control variable. Bank size is usually recognized potential economies of scale in the banking sector. Size might be an important determinant of the banks’ performance (Eden, 2014) and (Samuel, 2015).

2.4 Summary and Knowledge Gap

The previous studies have provided a platform to examine the objectives of the study. As per the above literature most of the empirical studies that have been conducted based on some factors of asset structure that affect banks financial performance.

Based on the result of the studies on relationship between the asset structure and financial performance, the components such as current asset, derivative asset, loans and advances to the customer, cash and cash equivalent, treasury bills and government bonds, intangible asset, fixed asset and long term investments were considered in the studies of the researchers from different countries outside Ethiopia such as in Kenya, Nigeria, China, Jordan, etc.

The result revealed that: current asset (cash and bank balance) do not have significant effect on financial performance (Gladys and Job, 2017). This result is consistence with the findings of Mawih (2014). On the other hand, Yahaya et al. (2015) recommended that some current assets such as cash and bank balance, financial assets held for trading, loans and advances to the customers and derivate assets have positive impact on the banks performance (ROA). Moreover, financial assets held such as treasury bills and bonds have positive impact; and fixed assets and long term investment have positive and significant effect on banks financial performance.

In the case of Ethiopia, the literature review also revealed that the researchers conducted on limited studies on NBE bills purchase, reserve requirement and investment. The research conducted by Yodit (2012); Eden (2014); Shibiru (2014); and Mintesnot and Semeneh. (2018) were focused on NBE bills whereas Eskedar (2016) studied on foreign bank deposit and fixed asset investment in addition to NBE-Bills. Tewodros (2017) studied on reserve requirement.

The results of the studies have concluded that the effect of NBE bills has negative and significant effect on financial performance of banks in Ethiopia Yodit (2012); Eden (2014); Shibiru (2014); Eskedar (2016); Mintesnot and Semeneh (2018).

Foreign bank deposit and fixed asset investment have positive and significant effect on the banks performance (ROE) (Eskedar, 2016). In addition, reserve requirement has negative effect on the banks performance.

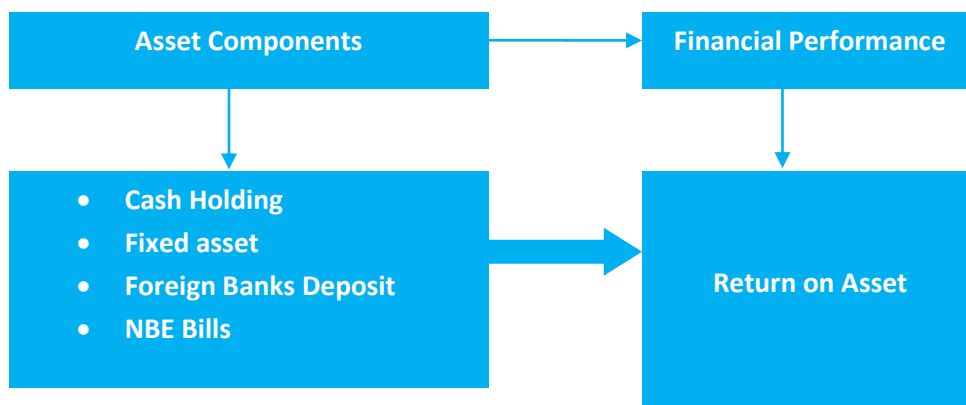
So far as the review of the literature disclosed prior studies are not inclusive all asset components. Hence, to fill the knowledge gap this study has included cash holding as one of the components of asset that affect financial performance of private commercial banks in Ethiopia.

2.5 Conceptual Framework

The conceptual framework depicts the relationship between asset structure and financial performance of private commercial banks. The study considered asset structure of the commercial banks as independent variables, to determine how they affect the dependent variable, which in this case is financial performance. The component of asset structure form independent variables namely cash at bank and on hand, fixed asset, deposit with foreign banks and NBE bills. These variables are measured by getting the ratio of each independent variable to the total

asset. On the other hand, dependent variable, financial performance is measured by various indicators such as ROA and ROE; however, the study used one dependent variable ROA as a measurement of financial performance. The effect of each component of asset structure on the financial performance is established independently and relationship determined. The study has tried to find an evidence to establish any relationship between bank financial performance and components of asset structure; support the theory and result of previous related studies.

Figure 2.1 Conceptual framework of the study



Chapter Three

3. Research Methodology

This chapter clarifies how the study is carried out, designed and implemented in order to achieve the research objective. The specific purpose of this chapter explained how to empirically examine the quantitative effect of asset structure on the banks performance, to present essential research methodology, choose appropriate research method and develop research hypothesis with its objectives. The methodology was conducted based on general and specific objective of the study.

3.1 Research Design

Research design is a comprehensive plan of sequence of actions that a researcher intends to carry out to achieve the research objectives. This study adopted explanatory research design, which was used to understand the cause and effect relation of asset structure and its financial performance. The study was conducted based on quantitative research approach to construct an empirical model to measure the impact of asset structure on the bank performance. Data was analyzed by using multiple regression model for predicting associative relationship between components of asset structure were held as independent variables and financial performance was dependent variable.

3.2 Research Approach

Research method can be based on quantitative approach, which employs deductive theory and hypotheses to test. Quantitative research is a means for testing objective theories by examining the relationship among variables, Creswell, (2009). Quantitative approach can be used to construct an empirical model so as to measure the effect of determinants of asset structure on the performance of private commercial banks in Ethiopia. It also used regression to determine relationships between independent and dependent variable.

3.3 Data Collection

In order to analyze the effect of asset structure on financial performance of the banks, secondary data (audited financial statements) were collected from of NBE for seven consecutive years from 2011-2017. Moreover, NBE directives were collected from National Bank of Ethiopia. The data was collected through document reviewed mainly records from NBE and the selected banks.

3.4 Population and Sample of the study

For the study, the population was the entire private commercial banks in Ethiopia, which is sixteen and for the sample size thirteen private commercial banks which have been operational since and before 2010 were purposely selected. The sample with a purpose in mind predefined banks that have data which is completed data available owing to the years. The study covered the period from 2011 to 2017, which means seven years of data was used with the sample size of thirteen banks; and the total number of observation would be 91.

Selected private commercial banks were Awash Bank (AB), Dashen Bank (DB), Bank of Abyssinia (BoA), Wegagen Bank (WB), United Bank (UB), Lion International Bank (LIB), Cooperative Bank of Oromia (CBO), Nib International Bank (NIB), Zemen Bank (ZB), Oromia International Bank (OIB), Bunna International Bank (BIB), Birhan International Bank (BrIB) and Abay Bank (AbB). However, the remaining three private banks are Addis International Bank (AIB), Dehub Global Bank (DGB) and Enat Bank (EB) which are not included in the study because their total asset, profit margin and amount of each component are far beyond the selected private banks in Ethiopia and it is not comparable with them.

Table 3.1 List of private commercial banks with their opening years before 2010

Sr no.	Commercial banks	Establishment year
1	Abay Bank	2010
2	Awash Bank	1994
3	Bank of Abyssina	1996
4	Birhan International Bank	2009
5	Bunna International Bank	2009
6	Cooperative Bank of Oromia S.C	2004
7	Dashen Bank	1995
8	Lion International Bank	2006
9	Nib International Bank	1999
10	Oromia International Bank	2008
11	United bank	1998
12	Wegagen Bank	1997
13	Zemen Bank	2008

Source: Banks annual report

3.5 Model Specification and Variable Description

To evaluate the effect of asset structure on banks performance, regression model was developed by considering four components of asset structure.

The researcher developed multiple regression model in the following form.

$$Y = \beta_0 + \beta_1CH + \beta_2FA + \beta_3NBEB + \beta_4FAD + \varepsilon$$

Where explanatory variables are:-

Y= Profitability measured by financial performance (ROA)

ROA=return on asset

β_0 = constant term

$\beta_1, \beta_2, \beta_3, \beta_4$ =represent estimated coefficient for specific bank

CHA=cash holding/ cash on hand and at bank

FAA= fixed asset investment

FDA= foreign banks deposit

NBEBA= NBE bills purchase

ε = Error term

$$ROA_{it} = \beta_0 + \beta_1CH_{it} + \beta_2FA_{it} + \beta_3NBEB_{it} + \beta_4FAD_{it} + \varepsilon$$

3.6 Measurements

Return on Asset = (Net Income / Total Assets) * 100

CHA = Cash holding / total asset * 100

FAA = fixed asset/total asset * 100

FDA = Foreign deposit/total asset * 100

NBEBA = NBE-bills/total asset * 100

3.7 Data Analysis

Data analysis is a systematic process which applies statistical techniques to evaluate data through inspecting and transforming using different models to draw useful information. The independent variables are NBE bills, foreign banks investment, fixed asset and cash holding in commercial banks, which were assumed to have an impact on the dependent variables of profitability of the private commercial banks in Ethiopia. Different ratios are calculated all variables of thirteen banks over the period from 2011 to 2011. These data were analyzed using descriptive statistics, correlations coefficient and regression analysis to see the relationship between independent and dependent variables.

This study has employed correlation analysis of data, based on the time series and has converted the raw data into a more meaningful information. In addition, multiple regression analysis is used to determine the impact of independent variables on dependent variables.

To conduct the analysis, the researcher used E-views econometric software version 8 to test the casual relationship between the independent and dependent variables. Before running a regression analysis, diagnostic tests (Normality, Homoscedasticity, Multicollinearity, autocorrelation) were carried out to ensure the assumptions of the Classical Linear Model (CLRM) were not violated.

Normality

The graph of normality test indicated that normal distribution as each data was fairly distributed around the mean. One of the most commonly applied tests for normality is the **Bera-Jarque** formalizing tests that examining if the coefficient of skewness greater than 5% and the coefficient of excess kurtosis is 3. Based on Brooks (2008), normal distribution is not skewed

and has a coefficient of kurtosis of 3. He also stated that, if the residuals are normally distributed, the histogram should be bell-shaped and the Bera Jarque statistic would not be significant at 5%.

Heteroscedasticity

This study employed white test in order to investigate whether the variance of the errors is constant or equal. Gujarati, (2004) noted that if the variance of the errors is not constant, this would be known as heteroscedasticity.

Multicollinearity

The study used correlation matrix of independent variables to detect any multicollinearity problem or to test independent variables in regression model. Hair et al. (2006) indicated correlation coefficient below 0.9 may not cause serious multicollinearity problem. On the other hand, Kennedy (2008) stated that multicollinearity problem exists when the correlation coefficient among the variables is greater than 0.70. The problem of multicollinearity arises when certain independent variables are highly correlated.

Autocorrelation

There is an assumption that the errors are linearly independent on one another (uncorrelated with one another). If the errors are correlated with one another, it would be stated that they are autocorrelated. Breusch-Godfrey test also applied to test for the existence of autocorrelation or not, the popular **DurbinWatson test** was employed.

Errors have zero mean

If a constant term is included in the regression equation, the assumption will never be violated. Brooks, (2008)

3.8 Operational Definitions

3.8.1 Dependent Variable

Dependent variable is return on asset (ROA) which is measured as net income as the percentage of total asset. Another common measurement of financial performance is ROE. For this study ROA is considered as a better measurement since the objective of the study is the impact of asset structure on financial performance in commercial banks in Ethiopia.

$$\text{ROA} = \frac{\text{Net profit after tax}}{\text{Total Asset}}$$

3.8.2 Independent Variables

Independent variables are CHA, FAA, FDA and NBEB

Cash holding is measured by comparing cash and cash equivalents /most liquid assets with current liabilities.

$$\text{Cash ratio} = \frac{\text{cash and cash equivalents}}{\text{Current liabilities}}$$

Fixed Asset is measured by fixed asset turnover ratio which is an efficient ratio that measures a banks return on their investment in fixed asset by comparing net sales with fixed assets. It calculates how efficiently the banks are producing sales with its fixed assets. It is also measured by the total amount of investment on fixed asset.

$$\text{FA ratio} = \frac{\text{Net sale}}{\text{Total fixed asset}}$$

Foreign Banks Deposit is measured as total deposits of the system as the percentage of the volume of foreign currency deposits in a banking system.

$$\text{FBD} = \frac{\text{Foreign currency deposit}}{\text{Total deposit of the system}}$$

NBE Bills is measured by the total amount of NBE Bills purchased by banks divided by total loans and advances.

$$\text{NBE Ratio} = \frac{\text{Amount of Bills purchased by private banks}}{\text{Total loans \& advances of private banks}}$$

3.8.3 Control Variable

Size is measured as natural logarithm of total asset. Logarithm is taken to reduce the value so as to it can be comparable to the value the other variables.

Chapter Four

4. Results and Discussions

The main objective of the study was to determine the relationship between the asset structure and financial performance of private commercial banks in Ethiopia. To reach the possible outcome descriptive statistics, correlation analysis and multiple regression analysis models were developed to create a relationship between independent variables and dependent variable. The study has cross section segment which considered thirteen banks (AB, AIB, BoA, BrIB, BIB, CBO, DB, LIB, NIB, OIB, WB, ZB) with time series segment (seven years) a period from 2011 to 2017. Regression analysis on the effect of all independent variables; CH, RR, FD, NBEB, ODB, OINV, LA and FA on the financial performance was conducted. However, regression result was only developed the variables (CH, FD, NBEB and FA) that have relationship found to be significant.

4.1 Descriptive Statistics

Descriptive statistics of dependent and independent variables for 13 private commercial banks of Ethiopia for 7 years with a total of 91 observations are reported in Table 4.1. The distribution of dataset for dependent and independent variables used in the study is explained by descriptive statistics.

Table 4.1 Descriptive statistics

Variables	CHA	FAA	FDA	NBEB	ROA	SIZE
Mean	11.02801	2.263005	7.216226	7.374042	2.665352	8.887777
Median	10.75182	1.959943	6.344490	7.211147	2.567215	9.062329
Maximum	27.51496	6.418104	19.77145	15.69962	5.267796	10.64483
Minimum	2.540356	1.259830	0.605107	1.456031	-0.875705	6.124191
Std. Dev.	5.043352	1.252921	4.622513	2.324366	0.859093	0.932966
Observations	91	91	91	91	90	90

Source: E-Views v.8 output

The average value of cash holding (CH) was 11% of the total asset of the commercial banks with standard deviation of 5%. This implies for the selected Ethiopian private commercial banks hold 11% from the total asset. The standard deviation shows there is variation of cash holding among the banks. It has a range statistic value of 27.5% with minimum statistic value of 2.5%. For non-financial institutions 11% of total asset being held as cash may seem excess. Commercial banks are supposed to maintain enough liquidity so as they do not face bank run. So the amount held is

high enough when the reserve requirement at the NBE and other short term assets are considered. The banks' cash holding ratio verified that the existence high level of variation in among the selected commercial banks. The high variability in cash holding may imply information asymmetry on the borrower's side.

Fixed asset (FAA) has the mean value of 2.26 with the standard deviation of 1.25, the total fixed asset holdings of the commercial banks, as expected is only 2.26% of their total asset. Banks, by the mere nature of their operation, maintain much of their asset in the form of liquid assets. The central banks puts a limit on how much fixed asset commercial banks should hold that is about 10% their paid up capital. Since there is excess demand for loan, commercial banks tend to lend out their asset instead of investing in fixed asset. For a mean of 2.26%, standard deviation of 1.25% is high. This implies that there is a big variation of about half among commercial banks in fixed asset investment. Most commercial banks are turning their face to fixed asset investment recently. Some, like Awash Bank, has been investing in building for quite a time.

The mean value of foreign account deposit (FDA) was 7.22% of total asset with the standard deviation of 4.62%. The mean value implied that banks have big deposit in foreign banks. Since there is huge unmet demand for foreign currency in Ethiopia, commercial banks maintain deposit in order to honor Letter of Credit (L/C) opened in the name of their clients. The amount they keep is constrained by the regulation that requires commercial banks to keep foreign asset no more than 15% of their open position. The comparison between minimum 0.61% and maximum 19.77%, there was high level of variation among the banks deposit at foreign bank account. The foreign currency holding of banks vary hugely. Cooperative bank of Oromia, for instance, tends to have high deposit in foreign currency by working with coffee exporters. Dashen Bank too has high deposit of foreign currency by working with Midrco Corporation, which has companies that involve in export of gold.

The average value of NBE Bills (NBEBA) was 7.37% of total assets of commercial banks with the standard deviation of 0.85%. The mean value implied that banks have purchased NBE Bills 7.37% from total asset. The minimum 1.45% and maximum 15.7%, there was high level of variation among the banks to purchase NBE Bills. Relatively new banks may not have invested much in the earlier period of the study. This compulsory purchase of a 5-years maturity bond

pays less than the saving deposit rate. The NBE collects the fund and transfers it to Development Bank of Ethiopia so as it can lend it out to big private projects. Committing 7.37% of their total asset in a long term bond is supposed to affect the profitability and maturity mismatch of commercial banks.

Size (SIZE) of the commercial banks, as measured in logarithm of the total asset is 8.89 (taking the exponent it is equivalent to Br. 7.26 billion) on average. The size of commercial banks, in terms of total asset, is very small in Ethiopia. This is confirmed by a study on Sub Saharan Africa (European Investment Bank, 2016). The variation among the commercial banks' total asset is not that significant, Br. 2.54. Awash bank is the biggest bank in the country with total asset of Br. 41.97 billion and the smallest bank has a total asset of Br. 454 million. The relatively newer banks have small size compared to the relatively old banks.

In general, the total observation from variables of asset side, CHA, FDA, NBEBA high level of mean they have with high proportion of variations between maximum and minimum levels. It indicated the banks mean of CHA, FDA and NBEBA were 11%, 7.22% and 7.37%, respectively. On the other hand, FAA has lower level of mean 2.26%, which implied lower level of share from total asset with high level variation.

The mean value of ROA is 2.66% with standard deviation of 0.86%. This verified for the selected Ethiopian private commercial banks have earned 2.66 % profit from total asset. The standard deviation shows there is variation of profitability of the selected banks. It has maximum statistic value of 5.27% with minimum statistic value of -0.85%. Even though standard deviation shows that there is lower level of variation in banks profitability, maximum and minimum values verified the existence of variation in profit among the selected commercial banks. The proportion of variation indicated that some of the banks earned profit with the maximum level of 5.27% profit margin and others incurred loss up to -0.85%. Thus, the banks need to optimize their asset structure so as to increase their return on asset. On the other hand, the mean value of the control variable of size was 8.89% with the standard deviation of 0.93%. The minimum 6.12% and maximum 10.64%, there was lower level of variation among in the banks size. Overall, commercial banks in Ethiopia are very profitable due to the oligopoly nature of the industry.

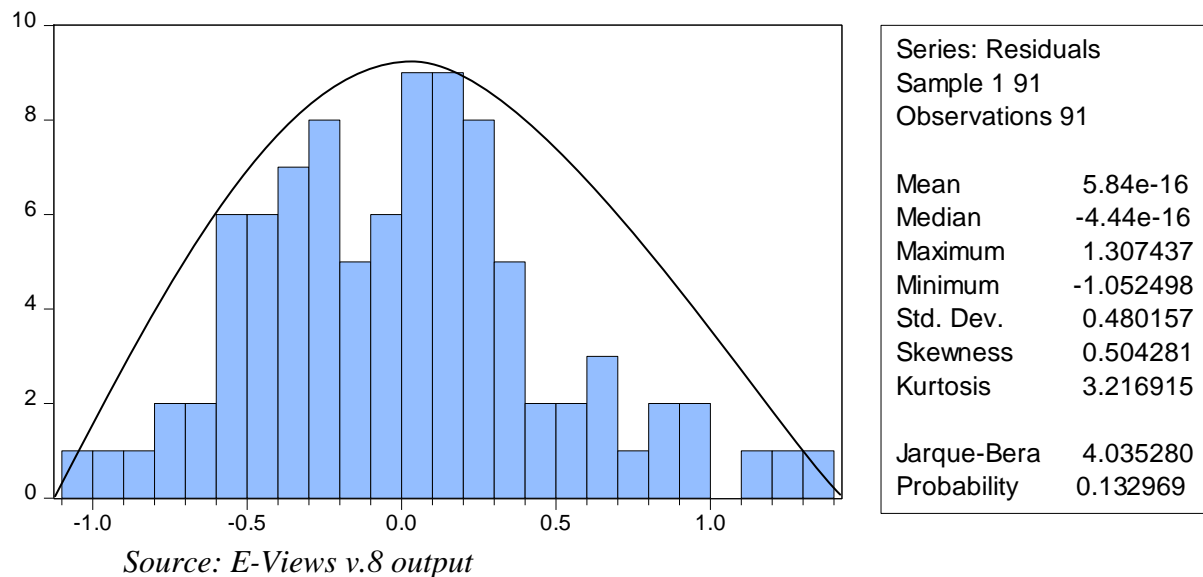
4.2 Tests on Assumption of Classical Linear Regression Model (CLRM)

In this study as mentioned in chapter three diagnostic tests is carried out to ensure that the data fits with the basic assumptions of classical linear regression model. Accordingly, the results for the model tests are presented below.

4.2.1 Test for Normality

The normality assumption is a diagnostic test of normally distributed errors. Brooks (2008) stated that the normality assumption is required in order to conduct single or joint hypothesis tests about the model parameters. One of the most commonly applied tests for normality is through the use of Histogram. When normality test is examined, the coefficient of kurtosis is 3 and skewness is zero. In addition, the histogram should be bell-shaped and the Bera Jarque statistic would be at insignificant level means not greater than 0.05.

Figure 4.1 Normality test for residuals



Based on the result obtained (Figure 4.1), normality test is conducted to examine the coefficient of kurtosis is 3.2 which not far beyond 3. The skewness of the error too is 0.5, which is not far from the zero value for a perfectly normally distributed error. Thus, the graph of normality test indicated that normal distribution of the residual of the regression is fairly distributed around the mean. Since the histogram is bell shaped, the normality assumption is not violated. A more objective test for normality is the Bera Jarque statistic. The result indicates that even at 4% significance level, normality is not violated.

4.2.2 Test for Heteroscedasticity

The other assumption of classical regression models is homoscedasticity. This assumption states that the errors have constant variance for all values of the independent variables. In this study as shown in table 4.2; since the p-values is in excess of 5%, both the F-statistic and Chi-Square versions of the test statistic indicate that the null hypothesis of homoscedasticity is not rejected. This leads to the conclusion that there is no evidence for the presence of heteroscedasticity. The scaled explains SS which is based on a normalized version of the explained sum of squares from the auxiliary regression and it gives the same conclusion that there is no evidence for the presence of heteroscedasticity problem, since the p-value is considerably in excess of 5%.

Table 4.2 Heteroscedasticity Test: White

F-statistic	0.491454	Prob. F(6,83)	0.8130
Obs*R-squared	3.087713	Prob. Chi-Square(6)	0.7978
Scaled explained SS	6.191309	Prob. Chi-Square(6)	0.4021

Source: E-Views v.8 output

4.2.3 Test for Multicollinearity

Correlation matrix between independent variables is presented in table 4.3. When the explanatory variables are very highly correlated with each other, this problem is known as multicollinearity. As shown in the table, there are low correlation coefficients indicated that there is no problem of multicollinearity in this study. Moreover, Kennedy (2008) stated that multicollinearity problem exists when the correlation coefficient among the variables are greater than 70%; however, no correlation coefficient that exceeds 70%. The maximum correlation coefficient in absolute value, among independent variables for this model is -0.4096. Accordingly, in this study there is no problem of multicollinearity which enhances the reliability for regression analysis.

Table 4.3: Correlations Matrix

Variables	CHA	FAA	FDA	NBEBA	SIZE
CHA	1.0000				
FAA	-0.2839	1.0000			
FDA	-0.0869	-0.1674	1.0000		
NBEBA	-0.1049	-0.1792	0.0555	1.0000	
SIZE	-0.4096	0.3794	-0.3759	-0.1995	1.0000

Source: E-Views v.8 output

4.2.4 Test for Autocorrelation

This is an assumption that the errors are linearly independent of one another (uncorrelated with one another). Since the data is panel, there is a possibility that the errors can be correlated over time. In order to detect the Breusch-Godfrey, Serial Correlation Linear Multiple test is used. If the errors are correlated with one another, it is assumed they are autocorrelation. It can be seen below (Table 4.4) the P-value of both the F – test and Chi-square tests for autocorrelation is greater than 5% values; the null hypothesis of no autocorrelation is not rejected, and no significant residual autocorrelation is presumed if the P-value is greater than 5%. The test is done for the 5th order autocorrelation. Therefore, there is no autocorrelation hence the results are valid from this perspective.

Table 4.4 Autocorrelation Test: Durbin Watson

Breusch-Godfrey Serial Correlation LM Test:
Null hypothesis: No serial correlation at up to 5 lags

F-statistic	1.446545	Prob. F(5,78)	0.2171
Obs*R-squared	7.637267	Prob. Chi-Square(5)	0.1774

Source: E-Views v.8 output

The Durbin – Watson statistics of the final regression output (Table 4.5) is 1.91. This value is very close to the two values which imply that there is no autocorrelation. The absence of autocorrelation is confirmed using two tests.

4.3 Results of the Regression Analysis

Panel data can be analyzed using three different approaches: pooled panel, fixed effect, and random effect. The fixed and random effect estimates help one to appreciate the cross-section and time dimensions of the panel data. However, when the number of observation is limited, pooled panel is the best approach. The results of the regression analysis was examined based on pooled panel regression analysis that gives reliable estimation to this study due to few numbers of observations the study has.

The objective of the study is to examine the relationship between the asset structure and financial performance of private commercial banks in Ethiopia and present the empirical findings from the econometric results. Multiple regression analysis was developed to identify the joint effect of

independent variables (CH, FA, FDA and NBEB) on dependent variable (the financial performance/ROA). Regression models were only developed in the areas where the relationship was found to be significant.

$$ROA = \beta_0 + \beta_1CH + \beta_2FA + \beta_3NBEB + \beta_4FAD + \varepsilon$$

Table 4.5 Regression result

Dependent Variable: ROA
 Method: Least Squares
 Date: 05/16/19 Time: 11:13
 Sample (adjusted): 2 91
 Included observations: 91 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.750926	1.228753	-1.424961	0.1579
CHA	0.032466	0.016623	1.953042	0.0542
FAA	0.500457	0.155183	3.224947	0.0079
FDA	0.071716	0.018743	3.826189	0.0003
NBEB	-0.075059	0.032051	-2.341866	0.0216
SIZE	0.222078	0.103274	2.150387	0.0344
R-squared	0.362284	Mean dependent var		2.704697
Adjusted R-squared	0.316184	S.D. dependent var		0.777097
S.E. of regression	0.642606	Akaike info criterion		2.028016
Sum squared resid	34.27422	Schwarz criterion		2.222446
Log likelihood	-84.26074	Hannan-Quinn criter.		2.106422
F-statistic	7.858673	Durbin-Watson stat		1.926730
Prob(F-statistic)	0.000001			

Source: E-Views v.8 output

4.3.1 Model Summary

The goodness-of-fit of the model (Adjusted R²) is 0.316. This indicates that about 32% of the variability on profitability among commercial banks in Ethiopia is explained by the four independent variables and the control variable (size). Profitability of commercial banks is a complex matter that can be explained by many bank-specific, industry-wide and macroeconomic factors. Taking only firm specific factors in the model, for that matter only 5 factors are explaining 32% of the variability in profitability can be considered as a good fit model. Another summery worth noting is the regressions F-statistics. The p-value of the F-test is way below 0.01; hence, all the independent variables considered in the model are jointly significant at 1% significance level. Overall, the model is statistically adequate.

4.3.2 Cash Holding (CHA)

Cash holding is the first independent variable that establishes the effects of cash holding on financial performance of private commercial banks in Ethiopia. The result of regression analysis indicated that cash holding has a positive but marginally insignificant effect on financial performance at 5% significance level but significant at 10% significance level. The result indicated that when the cash holding increase, financial performance of the banks may increase or decrease that is determined by the level of liquidity position of the banks. Accordingly, when cash holding increase leads to increase of liquid asset, assume other variables affecting liquidity position remain constant. If the volume of liquidity increases, the banks capacity to lend the money to the customers also increase and get high amount of interest leads to earn high profit. In contrary, if cash holding extremely increase, the banks have excess liquid asset which leads the banks have idle money which have excess cost of fund, as the result performance of the bank decrease. The cash holding of the banks has improve the income of a bank and thus increase the banks' financial performance. This leads to reject the hypothesis which stated that cash holding has a positive and significant effect on the financial performance of commercial banks in Ethiopia.

Cash holding is important for liquidity position that the NBE set; the banks extend any loan if the liquidity position is greater than 15% of its net current liability. As per the NBE directives any licensed commercial bank shall maintain liquid assets not less than fifteen percent (15%) of its net current liabilities. Cash holding determined the banks' capacity to lend money and help to take investment opportunity available. Currently, the banks are facing the problem to find deposit to meet their liquidity position and to lend money in order to get income through interest. Thus, cash holding is vital for banking business and it has positive but marginally insignificant effect to the banks' profitability.

The study result is partially differ with the result of the study done by Yahaya et al., (2015) stated that relationship between cash and bank balances has positive and significant effect on return on total assets. It is expected that the cash and bank balances are available to the bank to take on investment opportunities on hand.

4.3.3 Fixed Asset (FAA)

Fixed asset, second independent variable which is established the effects of fixed asset on financial performance of private commercial banks in Ethiopia. From the regression result, fixed asset has a positive and significant effect on financial performance at 1% significance level. When the ratio of fixed asset to total asset increases by 1% holding the other factors constant, ROA on average will increase by 0.5%. The result indicates that increase the value of fixed asset would start to increase the banks financial performance. This directs fail to reject the hypothesis which stated that fixed assets have a positive and significant impact on the financial performance of commercial banks in Ethiopia.

In Ethiopia, profitability increases when investment in fixed asset increases. However, there is restriction on fixed asset investment on financial institutions. National Bank of Ethiopia has a directive on investment on fixed asset, no bank shall invest more than 10% of paid up capital in real estate acquisition and development other than own premises without approval of NBE.

Fixed asset is not an earning asset, but it minimizes the administration expense. During branch expansion, there is high expense for renting buildings to open branches. If the banks have their own properties/fixed asset, they can minimize their expenses. In one way or another, the banks minimize its operation expense which leads to increase the banks profit. In addition, fixed assets can be used to pledge as collateral to reduce the potential of distress costs. In a highly inflationary economy like Ethiopia, investment in fixed asset is profitable. That can also explain the significant relationship between investment in fixed asset and profitability.

The result of this study is consistent with the study by Gladys and Job (2017), the regression analysis result indicated that the property, plants and equipment and long term investments and funds have significant effect on financial performance of commercial and service sector in Kenya. According to Olatunji and Adegbite (2014), investments in fixed assets have strong and statistically positive impact on the profitability of banking sector in Nigeria. In order to improve banks' profitability, there should be efficient management of fixed assets. Nigerian banks should improve the level of fixed assets investments in terms of building, ICT and machine. In order to improve bank profitability, there should be efficient management of fixed assets. Nigerian banks should improve the level of fixed assets investments in terms of building, ICT and machine.

Fixed assets should be utilized effectively and productively in order to boost their profitability. Another study also identified that fixed asset has a positive relationship with profitability of commercial banks in Ethiopia; it revealed that it has positive and statistically significant effect on the banks profitability at 5% significance level (Eskedar, 2016).

4.3.4 Foreign Bank Deposit (FDA)

Another component of total asset that is considered in this study is deposit with foreign banks. Based on the regression result foreign bank deposit has positive and significant effect on banks financial performance at 1% significance level. When deposit in foreign banks as a proportion of total assets of banks increases by 1%, profitability as measured by ROA also increases by 0.07%. Though the magnitude is small, the relationship is statistically significant. This leads fail to reject the hypothesis which stated that foreign bank deposit has a positive and significant effect on the financial performance of commercial banks in Ethiopia.

In Ethiopia, foreign currency is very scarce. Commercial banks strive to increase their foreign currency holding even much more than to increase their deposit. Ethiopia is a net importer of goods and services. Importers would like to work more with banks that can provide them with foreign currency. Hence, increasing foreign deposit affects commercial banks profitability in two ways. On the one hand, businesses are dealing in local currency would like to do business with banks that can avail forex. That actually supports of the profit of commercial banks through the domestic banking channel by helping them to mobilize more deposit. The other mechanism against which foreign currency can affect profitability of commercial banks is through the exchange rate. The local currency has been depreciating over last many years. If a commercial bank maintains deposit in foreign currency, the value appreciates in local currency as birr depreciates.

The result of the study is consistent with the study by Ghassan, (2015), the result of the regression implied that foreign deposit has a significant effect on banks profitability in Jordan. In addition, based on the study of Eskedar, (2016) regression analysis of foreign deposit has a significant effect on commercial banks profitability in Ethiopia.

4.3.5 NBE Bills (NBEBA)

NBE bills are the fourth independent variable which is established the effects of NBE Bills on financial performance of private commercial banks in Ethiopia. Based on the findings of the regression analysis; NBE bills have negative and significant effect at 5% significant level on banks performance. As the NBE bills holding of commercial banks increase by 1%, their profitability decreases by 0.075%. This implies that the purchase of NBE bills increase while the banks performance decreases. Fail to reject the hypothesis which stated that NBE bills have a negative and significant effect on the financial performance of commercial banks in Ethiopia.

Even if, the main goal of every banking institution is to generate income and to earn profit, there is restriction by government regulation. NBE bills directive which forced all banks to purchase a 5 years bond from NBE equivalent to 27% of each loan the banks disburse. The banks have to lend money in order to make profit from accrued interest but the income is limited due to purchasing of bond. Though the government implements this regulation to support other prior sector, it limits the banks capacity to lend a loan and earn profit. Moreover, to make an operation income from NBE bills' interest 5% is much lesser than cost of fund 7% the banks spend. Hence, NBE bills have negative and significant effect on the banks profitability in Ethiopia.

The result is consistent with the result of previous studies in Ethiopia: the impact of NBE-bills purchase on the banks performance indicated that NBE bills purchase has negative impact due to the lesser amount of interest rate earned than the operational cost spent (Eden, 2014). The result of the study by Shibiru, (2014) indicated that NBE bills purchase directive on the development of private commercial banks in Ethiopia has negatively implication on almost all private commercial banks' performances. The study verified that negative implication of bills purchase directive on the profitability, liquidity, capital and reserve of private commercial banks. In addition, the regression result verified that NBE bills purchase has negative and significant effect on the performance of commercial banks in Ethiopia (Eskedar, 2016).

In general, the result of the regression analysis indicated that those four independent variables (CHA, FAA, FDA and NBEBA) and the control variable size have positive or negative impact on financial performance of private commercial bank in Ethiopia. Cash holding has a positive but marginally insignificant effect on financial performance at 5% significance level. Fixed asset

has a positive and significant effect on financial performance at 1% significance level, foreign deposit has positive and significant effect on banks financial performance at 1% significance level and NBE Bills has negative and significant effect at 5% on commercial banks performance in Ethiopia.

4.3.6 Size (SIZE)

The control variable, size as measured by the logarithm of total assets of commercial banks is found to have positive and significant effect on profitability of commercial banks in Ethiopia 95% confidence level. Bigger banks enjoy economies of scale hence their profit is expected to be higher. Again, bigger banks in terms of total asset can possibly imply more loans and advances since the main asset of commercial banks is loans and advances. That would positively contribute their profitability.

Chapter Five

5. Conclusion and Recommendation

The study intended to analyze the main factors affecting on financial performance of commercial bank in Ethiopia through adopting multiple regression analysis. In this section conclusion and recommendations of the study is presented.

5.1 Conclusion

The aim of the study is to identify the main components of asset that impact on private banks financial performance in Ethiopia and find out to what extent these determinants affect the banks' profitability. Four variables including cash holding, fixed asset, foreign bank deposit and NBE Bills were used as independent variables and return on asset was used as dependent variable which was a measurement of banks financial performance. Size is considered as control variable. Multiple correlation and regression model were applied seven years (2011 to 2017) of data collected from thirteen private commercial banks in Ethiopia. The choice of this seven years period and thirteen private banks were based the availability of complete data for those banks with specific period.

Based on previous studies conducted outside the country, the studies have been employed most of asset components that affect banks financial performance. However, in Ethiopia, few researchers have conducted base on some components of asset that impact on banks financial performance and those studies are not inclusive all factors of asset structure in the banking industry. Even though, the researcher conduct this study based on the whole components of asset that have impact on the banks financial performance in Ethiopia, the result of regression analysis indicated that only four components such as CH, FA, FD and NBEBA have positive or negative impact on banks financial performance in Ethiopia.

As per the result of descriptive statistics; the total observation from variables of asset side, the banks mean of CHA, FDA and NBEBA were 11%, 7.22% and 7.37%, respectively. It implies that the mean value of CHA, FDA, NBEBA have high level share from total asset with high proportion of variations between maximum and minimum levels. On the other hand, FAA has mean value of 2.26%, which implies lower level share with high level variation.

The result of the study based on the assumption carried out to ensure the data fit with the basic assumptions of CLRM.

- ✓ The graph of normality test indicated that normal distribution of the residual of the regression is fairly distributed around the mean. Since the histogram is bell shaped, the normality assumption is not violated.
- ✓ Homoscedasticity is used white test to find that the errors have constant variance for all values of the independent variables, since the p-values is in excess of 0.05, both the F-statistic and Chi-Square versions of the test statistic indicate no evidence for the presence of heteroscedasticity.
- ✓ Multicollinearity is used to test independent variables are highly correlated with each other or not. There are low correlation coefficients find in the study indicate that no problem of multicollinearity.
- ✓ Autocorrelation is used Breusch-Godfrey Serial Correlation to test the errors are linearly independent of one another. However, the result verified that there is no variable correlate each other which indicate that no problem of autocorrelation.

The result of the regression analysis is examined based on pooled panel regression analysis that gives reliable estimation to this study due to few numbers of observations the study has. It determines the relationship between the asset structure and financial performance of private commercial banks in Ethiopia and presents empirical findings from the econometric results. Multiple regression analysis is used to identify the joint effect of independent variables (CH, FA, FDA and NBE Bill) on dependent variable (the financial performance/ROA). Regression models were developed in the areas where the relationship is found to be significant.

The goodness-of-fit of the model (Adjusted R²) is 0.316 or 32% of the variability on profitability among commercial banks in Ethiopia is explained by the four independent variables and the control variable (size). Profitability of commercial banks is a complex matter that can be explained by many bank-specific, industry-wide and macroeconomic factors that explaining 32% of the variability in profitability can be considered as a good fit model. Hence, all independent variables consider in the model are jointly significant at 1% significance level. Overall, the model is statistically adequate.

✓ **Cash holding (CHA)**

Based on the regression analysis cash holding has a positive but marginally insignificant effect on financial performance at 5% significance level but significant at 10% significance level. It implies that when the cash holding increase, financial performance of the banks may increase or decrease that is determined by the level of liquidity position of the banks have. Accordingly, increase of cash holding leads increase liquidity position. If the volume of liquidity increase, the banks capacity to lend the money to the customers also increase and get high amount of interest lead to earn high profit. In contrary, if cash holding extremely increase, the banks have excess liquid asset which leads the banks have excess cost of fund, as the result performance of the bank decrease. Hence, the cash holding of the banks has an impact on performance of the banks in Ethiopia.

✓ **Fixed asset (FAA)**

Fixed asset has a positive and significant effect on financial performance at 1% significance level. When the ratio of fixed asset to total asset increases by 1%, holding the other factors constant, ROA on average will be increase by 0.5%. The result indicated that increase the value of fixed asset would start to increase the banks financial performance.

✓ **Foreign Bank Deposit (FDA)**

Foreign bank deposit has positive and significant effect on banks financial performance at 1% significance level. When deposit in foreign banks as a proportion of total assets of banks increases by 1%, profitability is measured by ROA also increases by 0.07%. Though the magnitude is small, the relationship is statistically significant.

✓ **NBE Bills (NBEBA)**

NBE Bills has negative and significant effect at 5% significant level on banks financial performance. As the NBE bills holding of commercial banks increase by 1%, their profitability decreases by 0.075. This implies that the purchase of NBE Bills increase while the banks financial performance decrease.

✓ **Size (SIZE)**

The banks size has a positive impact on ROA with significant coefficient. This indicated that increase the size leads to increase banks financial performance. The large banks of the country have experience more significantly increases in profitability through economies of scale.

Generally, the results provide some important new insights adds value to the knowledge for a better understanding of the components of asset that affect the financial performance of commercial banks in Ethiopia.

5.2 Recommendation

Based on the study findings, this study recommends that:-

- ✓ Cash holding has positive but marginally insignificant effect on the banks financial performance. When cash holding increase beyond the limit, profitability increases or vice versa. If cash holding increases highly and kept idle, there will be excess fund which leads to undue expense or cost of fund. In contrary, if cash holding decreases (decrease in the volume of banks liquidity), there will be working capital deficit or shortage of liquid asset to run the day to day operation including unexpected gaps in discharging customers need for deposit withdrawal. Hence, managers of banking industry should increase their allocation of cash holding through cash budgeting (estimated projection of cash position in the future) to maintain optimum cash position level in order to improve their financial performance. Moreover, the treasurers have to also plan to invest the idle cash in the short term investments including treasury bills and interbank lending which in turn increase profitability and curbs cost of fund.
- ✓ Fixed asset has positive and significant effect on the banks' financial performance. When the volume of fixed asset increase, banks profitability also increases. Thus, banks should also increase investment on fixed asset so as to increase the banks' profitability through the income derived from rent services. Banks should improve the level of fixed asset investments in terms of building and investing in other companies in order to boost their profitability through rent and shares divided. All banks increase their operation through new branches opening. Most of the time banks are leasing offices for branches which increase operational expenses and get income through rent. If banks invest on fixed asset such as buildings, then, they are going to use the buildings for branch offices which will

enable them minimize rent expenses. Besides, banks have to also invest on the art of modern technology/Information Communication Technology (ICT) in order to facilities their jobs with the help of technology which helps them increase operational efficiency. The higher the level of investment on fixed assets leads the banks having higher profit. In order to improve the bank profitability, there should be investment and efficient management of fixed assets. Therefore, NBE has to increase 10% regulatory limit on fixed asset investment from the paid up capital that will enable the banks to derive better profit and reinvest in other ends which will help them compete globally. But, NBE shall increase the limitation of 10% with due attention. Because most of the banks held the buildings as collateral when the banks extend the loan; and if the banks will be highly invest on fixed asset may lead the liquidity problem. In the bank side, in order to improve banks' profitability, there should be able to manage fixed assets efficiently.

- ✓ Foreign currency deposit has positive and significant effect on the banks financial performance. Growth in currency deposit helps to boost banking profitability derived from the income through interest from export and commission on import letter of credit and sales of foreign currency. The banks should set strategy to encourage exporter by reducing lending interest rate. Moreover, to encourage exporters, more banks have to also provide additional comparable privilege facilitate them to involve in import business. In addition, to keep encouraging diaspora community to open foreign currency accounts by providing different benefit packages such as lending personal loan or housing loan with lower lending interest rate or increasing interest rate of foreign currency deposit. In recent years, income from remittance exceeds an income derived from export business. In light of this, banks should maintain encourage the diaspora community by providing different privileges in order to attract them to transfer their fund through banking system which will enable banks increase the level of their foreign currency deposit.
- ✓ NBE bills have negative and significant effect on the banks financial performance. When the NBE bills increase, financial performance of the bank decrease. Since April 2011, NBE issued NBE-bills directive to private commercial banks to purchase NBE-bills with 5% interest rate equal to 27% of their total disbursement to use financing on priority

sector. Even though, the banks have to participate in the financing of priority sector project to bring sustainable economic development, the NBE has to;

- Increase the bill interest rate from 5% to the minimum deposit rate and/or
- Reduce the 27% of the new loan disbursement and/or
- Devise mechanisms to capacitate commercial banks to involve in projects financing through strict project analysis and appraisal or
- Arrange co-financing of project loans together with state owned banks and minimize the bill rate.

5.3 Areas for Further Studies

The result of this study indicates that only 32% of the variation in financial performance of private commercial banks can be explained by the asset structure. This indicates that 68% of their financial performance cannot be explained by the model. The researcher recommends further studies on the banking industry to explain the unexplained part of the variations, based on the result of this study.

On top of that, the researcher recommends further studies on asset structure by increasing a period of review to raise the number of observation that maximize the degree of freedom for hypothesis testing.

In addition, the researcher also recommends that further studies require for components of asset such as loan and advance, and reserve requirement. Because there are inconsistent with the findings of this study with the prior studies result. The result of this research indicated that loan and advance to the customer do not have significant effect on financial performance of private commercial banks in Ethiopia. This result is not consistent with the finding of Yahaya et al., (2015) concluded that loan and advance to the customer has positive impact on the banks financial performance. Moreover, the researcher concluded that reserve requirement also does not have significant effect on the financial performance on the banks in Ethiopia. However, the result of Tewodros (2017) concluded that reserve requirement has negative and significant effect on banks profitability. Hence, it needs further studies to be done.

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APPENDICES

Appendix 1- List of Private Commercial Bank in Ethiopia

Sr. no.	Commercial banks	Establishment year
1	Awash Bank	1994
2	Dashen Bank	1995
3	Bank of Abyssina	1996
4	Wegagen Bank	1997
5	United bank	1998
6	Nib International Bank	1999
7	Cooperative Bank of Oromia S.C	2004
8	Lion International Bank	2006
9	Oromia International Bank	2008
10	Zemen Bank	2008
11	Birhan International Bank	2009
12	Bunna International Bank	2009
13	Abay Bank	2010
14	Addis International Bank	2011
15	Dehub Global Bank	2012
16	Enat Bank	2013

Appendix 2- Descriptive Statistics

Variables	CHA	FAA	FDA	NBEBA	ROA	SIZE
Mean	11.02801	2.263005	7.216226	7.374042	2.665352	8.887777
Median	10.75182	1.959943	6.344490	7.211147	2.567215	9.062329
Maximum	27.51496	6.418104	19.77145	15.69962	5.267796	10.64483
Minimum	2.540356	0.000000	0.605107	1.456031	-0.875705	6.124191
Std. Dev.	5.043352	1.252921	4.622513	2.324366	0.859093	0.932966
Skewness	0.761836	1.155249	0.536031	0.779615	-0.251773	-0.627297
Kurtosis	3.676286	4.404004	2.471548	5.113221	6.239958	2.938111
Jarque-Bera	10.53681	27.71568	5.416689	26.15074	40.76378	5.982621
Probability	0.005152	0.000001	0.066647	0.000002	0.000000	0.050222
Sum	1003.549	205.9335	656.6766	671.0379	242.5470	808.7877
Sum Sq. Dev.	2289.186	141.2830	1923.086	486.2410	66.42370	78.33825
Observations	91	91	91	91	91	91

Appendix 3- Heteroskedasticity Test

Heteroskedasticity Test: White
 Null hypothesis: Homoskedasticity

F-statistic	0.491454	Prob. F(6,83)	0.8130
Obs*R-squared	3.087713	Prob. Chi-Square(6)	0.7978
Scaled explained SS	6.191309	Prob. Chi-Square(6)	0.4021

Test Equation:
 Dependent Variable: RESID^2
 Method: Least Squares
 Date: 05/16/19 Time: 11:14
 Sample: 2 91
 Included observations: 90

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.784655	0.809146	0.969733	0.3350
CHA^2	7.20E-05	0.000796	0.090476	0.9281
FAA^2	-0.000199	0.000725	-0.275054	0.7840
FDA^2	0.000609	0.001341	0.454479	0.6507
NBEB A^2	0.001546	0.002568	0.602140	0.5487
SIZE^2	-0.007073	0.007605	-0.930131	0.3550

R-squared	0.034308	Mean dependent var	0.380825
Adjusted R-squared	-0.035501	S.D. dependent var	0.831579
S.E. of regression	0.846211	Akaike info criterion	2.578491
Sum squared resid	59.43410	Schwarz criterion	2.772921
Log likelihood	-109.0321	Hannan-Quinn criter.	2.656897
F-statistic	0.491454	Durbin-Watson stat	2.081700
Prob(F-statistic)	0.813024		

Appendix 4 - Autocorrelation Test

Breusch-Godfrey Serial Correlation LM Test:
 Null hypothesis: No serial correlation at up to 5 lags

F-statistic	1.446545	Prob. F(5,78)	0.2171
Obs*R-squared	7.637267	Prob. Chi-Square(5)	0.1774

Test Equation:
 Dependent Variable: RESID
 Method: Least Squares
 Date: 05/16/19 Time: 11:16
 Sample: 2 91
 Included observations: 90
 Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.720819	1.282622	0.561989	0.5757
CHA	-0.013099	0.017919	-0.731007	0.4670
FAA	-0.002706	0.015628	-0.173169	0.8630
FDA	-0.006834	0.018924	-0.361112	0.7190
NBEB A	0.000311	0.032226	0.009641	0.9923
SIZE	-0.081272	0.110795	-0.733531	0.4654
ROA(-1)	0.082505	0.131851	0.625742	0.5333
RESID(-1)	-0.074325	0.172561	-0.430715	0.6679
RESID(-2)	-0.304121	0.129098	-2.355744	0.0210
RESID(-3)	-0.055791	0.120183	-0.464219	0.6438
RESID(-4)	-0.134778	0.123646	-1.090036	0.2791
RESID(-5)	0.077850	0.122905	0.633414	0.5283

R-squared	0.084859	Mean dependent var	-6.59E-16
Adjusted R-squared	-0.044200	S.D. dependent var	0.620567
S.E. of regression	0.634133	Akaike info criterion	2.050451
Sum squared resid	31.36576	Schwarz criterion	2.383759
Log likelihood	-80.27029	Hannan-Quinn criter.	2.184860
F-statistic	0.657520	Durbin-Watson stat	1.975217
Prob(F-statistic)	0.773652		

Appendix 5 - Multicollinearity Test

	CHA	FAA	FDA	NBEBA	ROA	SIZE
CHA	1.0000					
FAA	-0.2839	1.0000				
FDA	-0.0869	-0.1674	1.0000			
NBEBA	-0.1049	-0.1792	0.0555	1.0000		
SIZE	-0.4096	0.3794	-0.3759	-0.1995		1.0000
ROA	-0.0183	0.1531	0.3264	0.0297	1.0000	0.1190

Appendix 6 - Regression Result

Dependent Variable: ROA
 Method: Least Squares
 Date: 05/16/19 Time: 11:13
 Sample (adjusted): 2 91
 Included observations: 91 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.750926	1.228753	-1.424961	0.1579
CHA	0.032466	0.016623	1.953042	0.0542
FAA	0.500457	0.155183	3.224947	0.0079
FDA	0.071716	0.018743	3.826189	0.0003
NBEBA	-0.075059	0.032051	-2.341866	0.0216
SIZE	0.222078	0.103274	2.150387	0.0344
R-squared	0.362284	Mean dependent var		2.704697
Adjusted R-squared	0.316184	S.D. dependent var		0.777097
S.E. of regression	0.642606	Akaike info criterion		2.028016
Sum squared resid	34.27422	Schwarz criterion		2.222446
Log likelihood	-84.26074	Hannan-Quinn criter.		2.106422
F-statistic	7.858673	Durbin-Watson stat		1.926730
Prob(F-statistic)	0.000001			