



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

**THE EFFECT OF ASSET STRUCTURE ON FINANCIAL
PERFORMANCE OF INSURANCE COMPANIES IN ETHIOPIA**

BY

**HANNA YESHITLA
(ID No: SGS/0071/2012B)**

**FEBRUARY, 2022
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**A THESIS SUBMITTED TO ST.MARY'S UNIVERSITY SCHOOL OF
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APPROVED BY BOARD OF EXAMINERS

DEAN, GRADUATE STUDIES

SIGNATURE

RESEARCH ADVISOR

SIGNATURE

INTERNAL EXAMINER

SIGNATURE

EXTERNAL EXAMINER

SIGNATURE

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 accordingly 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.

Hanna Yeshitla

Name

St. Mary's University, Addis Ababa

Signature

February, 2022

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)

Advisor

St. Mary's University, Addis Ababa

Signature

February, 2022

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Abbreviations and Acronyms

CLRM: classical linear regression model

HO: Null Hypothesis

ROA: Return on Assets

REI: Reinsurance dependence

FA: Fixed Asset

SD: Statutory Deposit

CCE: Cash and Cash Equivalents

LIQ: Liquidity

AG: company Age

NBE: National Bank of Ethiopia

OLS: Ordinary Least Square

REM: Random Effect Model

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ABSTRACT

The main purpose of this study was to examine the effect of asset structure on the financial performance of selected insurance companies 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 fifteen insurance companies for the period of 2014-2020. Return on asset was used as a measure of companies' financial performance which was dependent variable and five components of asset including cash and cash equivalents, fixed asset, statutory deposit, investment and reinsurance were used as independent variables. Liquidity ratio and age of company were used as control variables. Panel regression model was applied to analyze the collected data. The result indicated that cash and cash equivalents, fixed asset, liquidity ratio and age of firm have a positive and significant effect on financial performance of insurance companies. Reinsurance and statutory deposit have negative and significant effect on financial performance and investment has positive and insignificant effect on Ethiopian insurance companies' financial performance. Asset structure has a significant effect on the financial performance in the insurance industry. Therefore, the insurance companies 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, insurance companies.*

CHAPTER ONE- INTRODUCTION

1.1 BACKGROUND OF THE STUDY

An asset structure displays the composition of the company's asset categories which are critical to its operation and profit making. It is the allocation of the resources diversely (Zheng & Nuo,2013). It is described by various authors based on the direction of the studies. 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. Similarly, 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. On the other hand, Mawih (2014) conceptualized the asset structure as a component of fixed assets and current assets.

Financial performance refers to a firm's ability to generate new resources from day to day operations over a given period of time (Bora, 2008). It involves enhancing shareholders' wealth and profit making which are among the major objectives of a firm (Pandey, 2005). The financial performance of insurance companies is normally expressed in net premium earned, profitability from underwriting activities, annual turnover, return on investment and return on equity(William, 2004).

Previous studies showed that asset structure is important to the business organizations as they are the main source of creating corporate value and avoid risks (Zheng and Nuo, 2013). It also has strong and positive statistical impact on the profitability of firms, specifically financial institutions (Olatunji et al, 2014). These indicate that the study of assets structure has practical value and universal significance. According to Munawir (2007) profitability is the ability of the company to generate profits and it is measured by the success of the company to use assets productively. The asset structure of a given company indicates the allocation of resources made by management to maximize its performance and it also shows the company's management of capital submitted to him (Pandia, 2012). Therefore, by putting resources on profitable elements of assets a quality asset structure which affects the profitability of the companies can be formed.

Ethiopian insurance companies' asset structure composed of property & equipment, investments, statutory deposit, stock, debtors, reinsurance assets, trade & other receivables, due from ceding companies, treasury bills, fixed time deposits and cash and bank balances (EIC, 2019/20). These

companies mobilize significant resources in the form of premiums on insurance policies and these assets covers major investment in income-earning assets in order to maximize profit(NBE, 2019/20). Hence, significant proportion of investment is expected in asset structure of insurance companies for higher profit.

The aim of this study was to examine the relationship between asset structure and financial performance of insurance companies in Ethiopia by considering asset components: cash and bank balance, reinsurance, statutory deposit, fixed asset and investment that can affect the insurance's financial performance, which can be measured by return of asset (ROA). Consequently, the asset structure that has an effect on the financial performance of insurance companies in Ethiopia was determined.

1.2. STATEMENT OF THE PROBLEM

The role of financial institution in stimulating or hindering economy is very important (Ghazi, 2019). Insurance industry is an important and integral component of macro economy and has emerged as a dominant institutional player in the financial market impacting the health of economy through its multidimensional role in saving and capital market (Husain et al, 2016). In Ethiopia insurance is one of the major financial institutions that create financial stability by minimizing losses and promoting trade and commercial activities, which in turn lead to economic growth of the country (ECB, 2009). Thus, improved financial performance of these companies through increased profit is essential for economic growth, which in turn can be achieved through proper management of asset structure (Reshid, 2015).

Although proper management of asset structure requires diverse allocation of resources, there is a concentration of assets of most Ethiopian insurance companies in a particular type of assets particularly on cash and cash equivalents. The data from the financial reports of the companies showed that up to 84% of their total assets for the period of 2014-2020 were invested in cash which is idle resource and has no rate of return (NBE, 2014-2020).

Moreover, previous studies indicated inconsistent results regarding the relationship between asset structure and overall profitability of insurance companies. Mariam (2013) found that investment in real estate & government securities have positive and significant effect on the profitability of insurance company whereas, investments in bank deposit and stock have an inverse relationship. Dorina, (2016) also indicated negative relationship between fixed assets and

profitability. However, Veronica (2013) showed investments in real estate, certificates of deposit, government securities, corporate bonds and stocks have a significant impact on the financial performance of the insurance companies. Similarly, Ehiogu & Namocha (2018) found positive and significant effect of cash holding on profitability. Hence, these contradictions in finding need further investigation for clear understanding.

In Ethiopia, Eskedar (2016) and Binyam (2018) investigated effect of investment on performance of commercial banks and insurance companies respectively. Both researches mainly focused on the long term portion of assets ignoring short term assets which is important and may influence the financial performance of firms. Hence, this study included current assets and examined the effect of overall asset structure on financial performance of insurance companies.

Thus, considering the importance of insurance companies in economic growth of emerging economies (Ghazi, 2019; Husain et al, 2016), concentration of asset Ethiopian insurance companies and lack of empirical studies on Ethiopia insurance companies relating to this topic, the researcher motivated and examined how performance of Ethiopian insurance companies have been affected by their asset structure.

The study filled the gap by incorporating the following components of asset structure; cash and bank balances, statutory deposit, reinsurance, fixed asset and investments. Therefore, the extent to which these components of assets affect the financial performance of insurance company was evaluated.

1.3 Research Questions

In order to address the problem of the study, the following research questions were raised:

- ✓ What is the effect of reinsurance on the financial performance of insurance companies in Ethiopia?
- ✓ What is the effect of fixed asset on the financial performance of insurance companies in Ethiopia?
- ✓ What is the effect of statutory deposit on financial performance of insurance companies in Ethiopia?

- ✓ What is the effect of Cash and cash equivalents on the financial performance of insurance companies in Ethiopia?
- ✓ What is the effect of investments on the financial performance of insurance companies in Ethiopia?

1.4 Objectives of the Study

1.4.1 General Objective

The general objective of the study was to examine the effect of asset structure on the financial performance of insurance companies in Ethiopia.

1.4.2 Specific Objectives

The specific objectives of this study were;

- ✓ To assess the effect of reinsurance on the Ethiopian insurance companies financial performance.
- ✓ To analyze the effect of fixed asset on the financial performance of Ethiopian insurance companies.
- ✓ To examine the effect of statutory deposit on the Ethiopian insurance companies financial performance.
- ✓ To determine the effect of cash and cash equivalents on the financial performance of insurance companies in Ethiopia.
- ✓ To analyze the effect of investment on the financial performance of insurance companies in Ethiopia.

1.5 HYPOTHESES OF THE STUDY

Hypotheses are predictions about the outcome of the results that are capable of being tested by scientific methods that relates independent variables to some dependent variable based on different theoretical and empirical research review made. In order to achieve the objective of the study, a number of hypotheses developed concerning the effect of asset structure on financial performance of Ethiopian insurance companies.

Reinsurance dependence: - It is an indication of the volume of insurance company's dependence on its insurers to settle claims. Choi and Weiss (2005) showed that reinsurance has insignificant effect on the profitability of insurance companies. However, numerous studies concluded that reinsurance has a strong significant influence on the profitability of general insurance companies ((Berger et al, 1992), Cole and McCullough (2006), Garven and Grace (2007), Lee and Lee (2012) and Olufemi, 2019)). Hence, following the findings of majority studies it can be hypothesized as follows;

H1: reinsurance has positive and significant effect on financial performance of insurance companies in Ethiopia.

Fixed Asset: - Fixed assets are represented by the ratio between fixed assets to total assets. Results of various studies on the impact of fixed assets on the profitability of insurance companies indicated positive and significant impact. Hifza Malik(2011) showed that there is a statistically significant relationship between fixed assets and profitability of companies. The study argued that it is due to the fact that the fixed assets weight greater in total assets. Considerable empirical from Ethiopia also showed that fixed asset have positive and significant impact on the financial performance of banks (see, Eskedar (2016), Tewodros (2017), Mintesnot and Semeneh (2018), Yodit (2012), Shibiru (2014) and Eden (2014)). On the other hand, Abate (2012) and Yuvaraj et. Al. (2013) found that tangible (fixed asset) has negative impact on profitability of insurance companies. Therefore, since most studies agreed up on positive and significant effect of fixed asset, it is reasonable to formulate the following hypothesis as follows.

H2: fixed asset has positive and significant effect on financial performance of insurance companies in Ethiopia.

Statutory Deposit: - This represents the deposit that must be kept with the National Bank of Ethiopia in line with the licensing and supervision of insurance business proclamation No. 86/1994. According to this proclamation, such deposit should amount to 15% of the paid up capital and can be kept either in cash or government securities. However, as per the same Proclamation, the deposit or any part thereof shall not be withdrawn except with the written permission of the National Bank of Ethiopia; nor shall such deposit be used as a pledge or security against any loan or overdraft in order to get interest.

According to Ehiogu & Nnamocha (2018) statutory deposit has a positive and significant individual effect on profit of insurance companies.

H3: statutory deposit has positive and significant effect on the financial performance of insurance company in Ethiopia.

Cash and cash equivalents: - Cash is legal tender or coins that can be used to exchange goods, debt or services. Sometimes it also includes the value of assets that can be converted into cash immediately, as reported by a company. Elkinawy & stater (2007) showed that cash has negative effect on profitability of companies. However, most studies reveal that cash and cash holding have a positive and significant effect on financial performance of insurance firms ((Ehiogu & Nnamocha, 2018), (Yahaya et al., 2015)). Consequently, based on the findings of most studies, the following hypothesis is formulated.

H4: cash and cash equivalents has positive and significant effect on the financial performance of insurance company in Ethiopia.

Investments: - includes investment in government securities or investment in other companies' equity. For this particular study total investment is considered which includes all kinds of investments. Binyam (2018) found that investment in stocks and time deposit has negative effect on the performance of insurance companies. However, most studies found that investment have a positive and significant effect on financial performance of insurance firms (Mariam (2013), Veronica (2013) & Husain (2016)). Hence, based on the conclusion of majority of the studies it is reasonable to propose as follows.

H5: investment has positive and significant effect on the financial performance of insurance company in Ethiopia.

1.6 SIGNIFICANCE OF THE STUDY

The research will provide information that will help National Bank of Ethiopia to improve the investment regulation without making the policy highly restrictive. It will also provide some understanding about the effects of asset structure on the financial performance of insurance company in Ethiopia by showing the effects of each components of asset on the performance of insurance company. Hence, it will help the companies to put their resources on more profitable assets by improving their investment policy. This will help them to manage their investment portfolio to increase their profit.

Finally, the study will help other researchers as a source of reference and an initial point for those who want to make further study on the area of insurance companies' asset structure.

1.7 SCOPE OF THE STUDY

The study focused on the effect of asset structure on financial performance of insurance companies in Ethiopia. The data used was delimited to secondary data which was obtained from companies audited financial statements. The study investigated the performance of insurance companies covering from 2014 to 2020. This period was considered as it indicates the recent information about the performance of firms under consideration. Besides, in this period there is concentration of companies' assets in cash and cash equivalent.

In order to get the required data, 15 insurance companies (see appendix A) were included in the study. The other insurance companies were excluded due to lack of complete audited financial statements. Hence, panel data was used to evaluate the effect of components of companies' asset on their financial performance.

The financial performance was measured using ROA and it is dependent variable. The study used only five independent variables i.e. fixed asset, reinsurance, statutory deposit cash and cash equivalents and investment.

1.8 LIMITATIONS OF THE STUDY

The study was conducted by collecting secondary data from audited financial statements of insurance companies under investigation. The period of review has been limited to seven years due to the data availability. In addition, the research has consisted of only fifteen insurance companies that have been operating in Ethiopia for more than seven years. Due to the unique accounting system used by life assurance business and as some insurance companies do not provide life insurance services, the secondary data collected from income statement and balance sheet were limited to general insurance business. Data reveals that in Ethiopia, life insurance premiums constituted only US\$6 million or 6 percent of total premiums, while general insurance premiums totaled US\$99 million or 94 percent of total premiums (Smith and Chamberlain, 2010). This is relatively small and hence their contribution to the industry isn't that much.

1.9 ORGANIZATION OF THE STUDY

The study report is organized in five chapters. Chapter one explains the introduction part which comprises; back ground of the study, statement of problem, research objectives and hypotheses, significance of the study and scope of the study. Chapter two presents reviews of related literature; conceptual and theoretical framework and detailed discussions of empirical studies on asset structure and financial performance.

Chapter three describes the research methodology used to carry out the study. Research approach, research design, target population and data types and sources are included in this section. Chapter four explains about the data analysis and discussion on the findings. Finally, Chapter five brings to an end the research with conclusions, recommendations and further research suggestions.

CHAPTER TWO

LITERATURE REVIEW

2.1. Theoretical Literature

2.1.1. The concept of Asset Structure

Asset structure is the ratio or the balance between current assets and fixed assets which will determine the structure of wealth (asset structure). It shows the allocation of the resources and has different components such as: turnover assets, production assets and wasting assets (Zheng and Nuo, 2013).

Asset structure affects financing sources in several ways. Asset structure is the ratio that describes the proportion of total fixed assets owned by a company with the total assets of the company (tangibility). The purpose of this calculation is to determine how big is the portion of fixed assets that can be used as collateral for the company for its loans. Companies that have high fixed assets will have easier access to external financing and may also have a higher level of debts in their capital structure. If the asset ownership is larger, the company relatively has higher debts on the asset that can be used as collateral (Michaelas, et al, 1999).

Company assets show the decision of fund usage or investment decisions in the past. Weston and Brigham (1994) suggest that companies with assets as loan collateral tends to use loans in larger quantities. Assets that can serve as loan collateral are fixed assets. Brigham and Gapenski (1997) express that in general it is easier for companies that have loan collateral to get a loan than companies that do not have any collateral.

Companies that have a large number of fixed assets can use a large amount of loan because they have great collateral. One of the factors that affect capital structure is asset structure. Hung (2005) and Delcoure (2006) suggest that there is a positive relationship between asset structure and corporate value. If the company is bigger, it will provide a good signal for investors to invest because of the many assets that can be used as collateral for the company's debts (signaling theory).

2.1.2. Components of Asset Structure

Different researchers described asset structure in different way. It is a combination of various asset components such as fixed assets, tangible fixed assets, current assets and cash in hand and at bank (Koralun-Bereznicka, 2013). Schmidt (2014) also designated asset structure in terms of

current assets, long term investments and funds, property, plant and equipment, intangible assets and other assets. On the other hand, Mawih (2014) defined assets structure theoretically as a component of fixed assets and current assets.

The Ethiopia insurance companies asset structure shows the composition of the insurance's asset categories which are critical to its operation and profit making like Property & Equipment, Investments, Statutory Deposit, Stock, Debtors, reinsurance assets, Trade & Other Receivables, Due from ceding companies, Treasury bills, fixed time deposits and Cash and bank balances (EIC, 2019/20). In section below the components of asset considered in the study are discussed.

i) Cash and cash equivalents

Cash is legal tender or coins that can be used to exchange goods, debt or services. Sometimes it also includes the value of assets that can be converted into cash immediately, as reported by a company. The first function of cash management is to secure the short term normal business activities, manage resources and enhance liquidity (Allman-Ward & Sagner, 2003). The essential objective of this practice is to reduce the percentage of liquid assets held by companies in order to fulfill their ongoing activities on one hand, and on the another hand, to achieve a sufficient level of cash holdings to empower the company to obtain trade discounts to achieve acceptable credit rating and to meet unexpected cash requirements (Brigham, Gapenski, & Daves, 2003).

Cash holdings have many advantages related directly to investment activities, especially in flexibility and capitalizing on opportunities. Firms with high cash holdings can take advantage of more investment opportunities without being too restricted by capital, ensure adequate capital for planned or unplanned opportunities (business expansion, market opportunities during the financial crisis, when unexpected news brings a stock price down, real estate deal, business opportunities, and so on) (Ogundipe, Ogundipe, & Ajao, 2012).

Availability of cash holdings allows firms to take advantage of the moment. Firms can make profitable investment deals that have a huge impact on their continuity whether for restructuring purposes or for taking advantage of new opportunities. On the other hand, the cash holdings decision must be sound, thorough and logical in order to avoid the negative impact of holding too much cash (Elkinawy & Stater, 2007).

ii) Reinsurance assets

The reinsurance dependency is measured by the ratio of premiums ceded in reinsurance to gross written premium. It is used to reduce the risk of bankruptcy when the insurers are subject to higher losses (Suyehli, 2015). Insurance companies reinsure a certain amount of the risk underwritten in order to reduce bankruptcy risk in the case of high losses. Although reinsurance improves the stability of the insurance company through risk dispersion, achievement of solvency requirements, risk profile equilibration and growth of the underwriting capacity, it involves a certain cost (Mistre, 2015). Therefore, the lower amount of this ratio is desired.

iii) Investments

In the financial sense investment is the commitment of a person's fund to derive future income in the form of income, dividend premium, pension benefit, or appreciation, in the value of their capital. Examples include purchasing of shares, debentures, post office saving certificates, insurance policies are all investments in the financial sense such investment generates financial assets. Investment in the economic sense means the net addition to the economy's capital stock which consists of goods and services, that are used in the production of other goods and services. Examples include new constructions of plants and machines and inventories (Weebly, 2013).

There are different types of investments that can be made by firms. Both individuals and companies can have investments. This may include stocks, mutual fund distributions, investment in Government securities, interest-bearing bank accounts (Fixed time deposits), bonds, and other debt instruments. A firm may also opt to invest in rental property or real estate or other assets owned for investment purposes (Harvey, 2012).

Stock investment mainly includes common stock and preferred stock and are long term instruments having maturity period of more than a year. The other type of investment is government security mainly Treasury bill which has maturities of less than one year. They have the unique feature of being issued at a discount from their nominal value and the difference between nominal value and discount price is the only sum which is paid at the maturity for these short term securities because the interest is not paid in cash, only accrued. The other important feature of T-bills is that they are treated as risk-free securities ignoring inflation and default of a government, which was rare in developed countries, the T-bill will pay the fixed stated yield with certainty (Kristina , 2010).

Certificate of deposit is another type of investment commonly used in insurance companies. It is a debt instrument issued by bank that indicates a specified sum of money has been deposited at the issuing depository institution. It bears a maturity date and specified interest rate and can be issued in any denomination. Most certificates of deposit cannot be traded and they incur penalties for early withdrawal. For large money-market investors financial institutions allow their large-denomination certificates of deposits to be traded as negotiable certificates of deposits (Kristina , 2010)

iv) Statutory Deposit

Statutory deposit means deposit to be maintained in cash or government securities by insurance companies with National Bank of Ethiopia (SIB/05/2020). It is the component of asset that represents the amount deposited at National Bank of Ethiopia. This deposit must be kept with the National Bank of Ethiopia in line with the licensing and Supervision of insurance business proclamation No. 86/1994. According to this proclamation, such deposit should amount to 15% of the paid up capital and can be kept either in cash or government securities. Therefore, insurance companies with high paid up capital are required to deposit high statutory deposit at National Bank of Ethiopia.

According to the same Proclamation, the deposit or any part thereof shall not be withdrawn except with the written permission of the National Bank of Ethiopia; nor shall such deposit be used as a pledge or security against any loan or overdraft in order to get interest. This indicates that this amount remains idle as it has no return and restricted to withdraw and invest on profitable areas. As a result the deposit will have effect on performance of insurance companies by decreasing their profit.

Studies showed different result regarding the relationship between statutory deposit and insurance companies' performance. According to Babbel and Staking (1983) rising in statutory deposit have resulted in an increase in the real cost in terms of the cash value of insurance products.statutory deposit has a positive and significant individual effect on profit of insurance companies. Outreville (1996), on the other side, indicate that an ambiguous relationship exists between the real interest rate and life insurance. High interest rates are associated with low economic growth in industrialized countries. Ehiogu & Nnamocha (2018) concluded that statutory deposit has significant effect on the performance of insurance companies.

v) **Fixed assets**

Fixed asset refers to any investment within the measurement period in physical assets, such as real estate infrastructure, machinery, etc. that are held for more than one year and it is a measure of capital spending. A company's investment in fixed asset is dependent, to a large degree, on its line of business and some businesses are more capital intensive than others (Ibam, 2007).

Fixed asset turnover ratio looked at asset over time and compares the ratio to that of competitors which gives the investor an idea of how effectively a company's management is using fixed asset (Ibam, 2007). It is a rough measure of the productivity of a company's fixed assets with respect to generating sales. The higher the number of times turned over, the productive it is. However investors look for consistency or increasing fixed assets turnover rates as positive balance sheet investment qualities.

2.1.3 Concept of Financial Performance

Financial Performance is the function of the ability of an organization to gain and manage the resources in several different ways to develop competitive advantage (Iswatia and Anshoria (2007). Company's performance describes how individuals in the company try to achieve a goal (Wellalage, 2012). Before investing their funds, investors should first know about the performance of the company (Tita& Lionel, 2015).

The financial performance of insurance companies can be analyzed at micro and macroeconomic level, being determined both by internal factors represented by specific characteristics of the company and external factors regarding connected institutions and macroeconomic environment. Identifying the factors that contribute to insurance companies' performance is useful for investors, researchers, financial analysts and supervisory authorities (Burca&Batrinca, 2014).

2.1.3.1 Financial Performance of Insurance Companies

In insurance, performance is normally expressed in net premiums earned, profitability from underwriting activities, annual turnover, returns on investment, return on asset and return on equity. The financial performance of a general insurance underwriter would be affected by how much of the available funds are deployed in assets that earn a return and also how big that rate of return is losses incurred or total claims expense to premiums earned denotes the underwriting

results or essentially the quality of business underwritten. The lower loss ratio has the better financial performance.

According to Walker (2001) there are two kinds of performance, financial performance and non-financial performance. Financial performance emphasizes on variables related directly to financial report. Company's performance is evaluated in three dimensions. The first dimension is company's productivity, or processing inputs into outputs efficiently. The second is profitability dimension, or the level of which company's earnings are bigger than its costs. The third dimension is market premium, or the level of which company's market value is exceeding its book value. Most researchers in the field of insurance and their financial performance stated that the key indicator of a firm's financial performance is ROA.

The financial performance of insurance companies was measured using profitability ratios (ROA). Arif & Showket (2015), Catherine (2014) and Hafiz (2011) are among others, who have suggested that there are different ways to measure profitability it is better to use ROA as it helps to measure the overall resource (asset) performance. Profitable means that insurance companies are earning more revenues than being disbursed as expenses.

2.1.4. The effect of asset structure on financial performance

Literatures found that various components of asset structure affect the financial performance of companies, even though, the findings are contradictory. In this section the effects of different components of assets on financial performance of companies are presented.

2.1.4.1. Fixed assets

Fixed assets are represented by the ratio between fixed assets to total assets. Results of various studies on the impact of fixed assets in the profitability of insurance companies showed that fixed assets affect the financial performance of the companies. Hifza Malik (2011) indicated that there is a statistically significant relationship between fixed assets and profitability of companies. He argues that due to the fact that the greater the weight of fixed assets in total assets, the greater is the insurance company, profitability will be even greater.

2.1.4.2. Cash and cash equivalents

Availability of cash holdings allows firms to take advantage of the moment. Firms can make profitable investment deals that have a huge impact on their continuity whether for restructuring

purposes or for taking advantage of new opportunities. On the other hand, the cash holdings decision must be sound, thorough and logical in order to avoid the negative impact of holding too much cash (Elkinawy& Stater, 2007). The performance of any firm not only plays the role to increase the market value of that specific firm but also leads towards the growth of the whole industry which ultimately leads towards the overall prosperity of the economy (Ahmed et al 2011).

2.1.4.3. Reinsurance

Various studies reveal that reinsurance affects the profitability of firms. Lee and Lee (2012) and Cole and McCullough (2006) found that an insurer with higher profits tends to depend less on reinsurance because they have higher capacity to weather financial pressures. The studies further declare that insurance companies that are more profitable are in a better position to absorb large unexpected losses and therefore be less affected by the under investment problem. Iqbal et al. (2014) indicated that increased dependence on reinsurance arrangement will decrease profitability as leverage level has a significant negative impact on the profitability and suggest that for insurance companies to increase their underwriting capacity and stabilize their earnings, they must depend less on reinsurance.

2.1.4.4. Other Determinants of Financial Performance in Insurance Companies

The company age

Company age is defined as the difference of observation year and establishment year of the company. Most previous studies found that firm's age have statistically significant effects on insurance company's performance ((Marjanović&Popović, 2020), (Guendouz&Ouassaf, 2018)). In Ethiopia age of the firms are regarded as the main determinants of financial performance (Abebe & Abera, 2019).

Liquidity

Liquidity for insurance companies shows the ability of insurers to pay current liabilities, which have the nature of operating expenses or payment of compensation in case of damage. For the insurer primary sources of liquidity are cash flow from net premiums, investment returns and liquidation of assets (Chen & Wong, 2004). Most studies in this field treat liquidity as a factor affecting profitability, representing it by the current ratio (current assets / current liabilities). Regarding the relationship between liquidity and profitability of insurance companies, the results

of different studies have been different. Some studies have concluded that there is a statistically insignificant link between liquidity and profitability for insurance companies (Naveed, Zulfqar, & Ahmad, 2011) while other studies suggest that there are statistically significant negative links between liquidity and profitability of the insurer (Chen & Wong, 2004).

2.2.EMPIRICAL REVIEW

The study by Veronica (2013) focused on the relation between investment & financial performance of insurance companies in Kenya to establish the relationship between these variables. The target population of the study was 45 insurance companies out of which 32 insurance firms were selected and used as sample size. The study used secondary data and multivariate regression and correlation analysis was employed. The findings reveals that investments in real estate, certificates of deposit, Government securities, corporate bonds and stocks have a significant impact on the financial performance of the insurance companies.

Olatunji et al. (2014) studied the effect of investment in fixed assets on firm profitability of selected Nigerian banks. Secondary data were collected from annual reports and accounts of the banks under investigation. Correlation and multiple regressions were used to analyze the relationship between the net profit and asset structure which is fixed assets. The results show that investments in fixed assets have strong and positive statistical impact on the profitability of banking sector in Nigeria. In order to improve bank profitability through efficient management of fixed assets, the researchers suggested the banks to increase fixed assets investments in form of ICT and to monitor fixed assets utilization and productivity to boost profitability for shareholders' satisfaction.

The factors affecting the financial performance of Jordanian Insurance Companies Listed at Amman Stock Exchange were examined by Amal et al. (2012). All insurance companies' enlisted at Amman Stock Exchange during the period (2002-2007) was considered as population of the study. T-test and Multiple- regression were used to analyze the collected data. The study found that Leverage, liquidity, Size and Management competence index have a positive statistical effect on the financial performance of Jordanian Insurance Companies. The researcher recommended that a high consideration of increasing the company assets will lead to a good financial performance and there is a significant need to have highly qualified employees in the top managerial staff.

The study by Meaza (2014) examined the effects of firm specific factors and macroeconomic factors on profitability of insurance companies in Ethiopia. The researcher collected sample data from ten insurance companies for six years (2008-2013). Secondary data obtained from the financial statements (Balance sheet and Profit/Loss account) of insurance companies, and financial publications of MOFED are analyzed using regression technique. The findings showed that size, leverage, tangibility of asset, loss ratio/ risk, firm growth and managerial efficiency are significant determinants of profitability hence firm size, tangibility of asset, firm growth and, managerial efficiency are positively related. In contrast, leverage and loss ratio/ risk are negatively but significantly related with profitability. Liquidity, inflation, and economic growth were not significant determinants of profitability.

Yuvaraj et al. (2013) examined the effects of firm specific factors on the performance of insurance companies in Ethiopia. The researchers used as sample nine of Ethiopian insurance companies for nine years (2003-2011). Secondary data were obtained from the financial statements of insurance companies and financial publications of National Bank of Ethiopia. The study found that growth, leverage, volume of capital, size, and liquidity are the determinant factors of profitability. The study further reveal that growth, size, and volume of capita are positively while liquidity ratio and leverage ratio were negatively but significantly related with profitability. The age of companies and tangibility of assets were not significantly related with profitability.

Mohammed (2014) studied the determinants of capital structure & its impact on the performance of Ethiopian insurance industry. The study used secondary data from 2004-2013 of nine insurance companies in Ethiopia. Multiple regressions were employed to analyze collected data. The results show that firm leverage, Size, tangibility and business risk were significant impact on performance of Ethiopian insurance companies. The study further provided strong evidence in support of the pecking order theory of capital structure which asserts that leverage was a significant determinant of firms' performance. A significant negative relationship is established between leverage and performance. From the findings the researcher recommended that the sample of Ethiopian insurance industry use more equity than debt in financing their business activities, this because if the value of business can be enhanced with debt capital, it is dangerous for the firm. Each Ethiopian insurance industry establishes with the aid of professional financial

managers, that particular debt-equity mix that maximizes its value and minimizes its weighted average cost of capital.

Abate (2012) studied on factors affecting profitability of insurance companies in Ethiopia. The sample in this study includes nine Ethiopian insurance companies for nine years (2003-2011). Secondary data was obtained from the financial statements of insurance companies and analyzed using regression analysis. The findings reveal that growth, leverage, volume of capital, size, and liquidity are the most important determinant factors of profitability and growth, size, and volume of capital are positively related. In contrast, liquidity ratio and leverage ratio are negatively but significantly related with profitability. Lastly, age of company and tangibility of assets are not significantly related with profitability.

Olatunji and Adegbite (2014) investigated the effect of investment in fixed assets on profitability of selected banks in Nigeria. 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. The researchers suggested that efficient management of fixed assets in order to improve bank profitability. Besides, improving the level of fixed assets investments in terms of building, ICT and machine is recommended to enhance their profitability.

The study by Eskedar (2016) focused on the impact of investment on performance of commercial banks in Ethiopia. The secondary data obtained from the banks was analyzed using regression technique. The findings of the study show that fixed asset investment and foreign bank deposit have 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.

2.2.1 Conclusion and knowledge gap

Although various studies tried to study the effects of different components of assets on financial performance of financial institutions, there are some gaps which still need further investigations. Most of the above-mentioned studies focused on different firm specific factors and macroeconomic factors that affect the profitability of institutions while others considered few

components of assets specifically investments in fixed assets. Therefore, this particular study included all components of asset to examine their effect on profitability of insurance companies.

The studies mostly focused on commercial banks and only few of them studied on insurance companies. As per the researchers knowledge there is no study on asset structure and financial performance on insurance companies in Ethiopia which indicates contextual gap. Moreover, the findings of different researches contradict with each other. From the empirical review some studies founds that there is a positive and significant relationship between investment and insurance performance and other studies founds that there is a negative and significant relationship between investment and insurance performance. Hence, this study filled these gaps by examining the effects of asset structure on financial performance of insurance companies in Ethiopia.

Finally, there is a gap in research methodology as different techniques were used by different researchers. These include target population and sample size, method of data analysis and the type of data used in the study. The measure of profitability used was also different. So the researcher also considered these gaps and tried to fill them. Accordingly, by including components of asset namely; cash and cash equivalents, statutory deposits, fixed assets, investments and reinsurance and using return on assets (ROA) to measure performance, the study examined the effects of asset structure on financial performance of insurance companies in Ethiopia. Regarding the data and technique of analysis, panel data from fifteen insurance companies for seven consecutive years were collected and analyzed using regression technique.

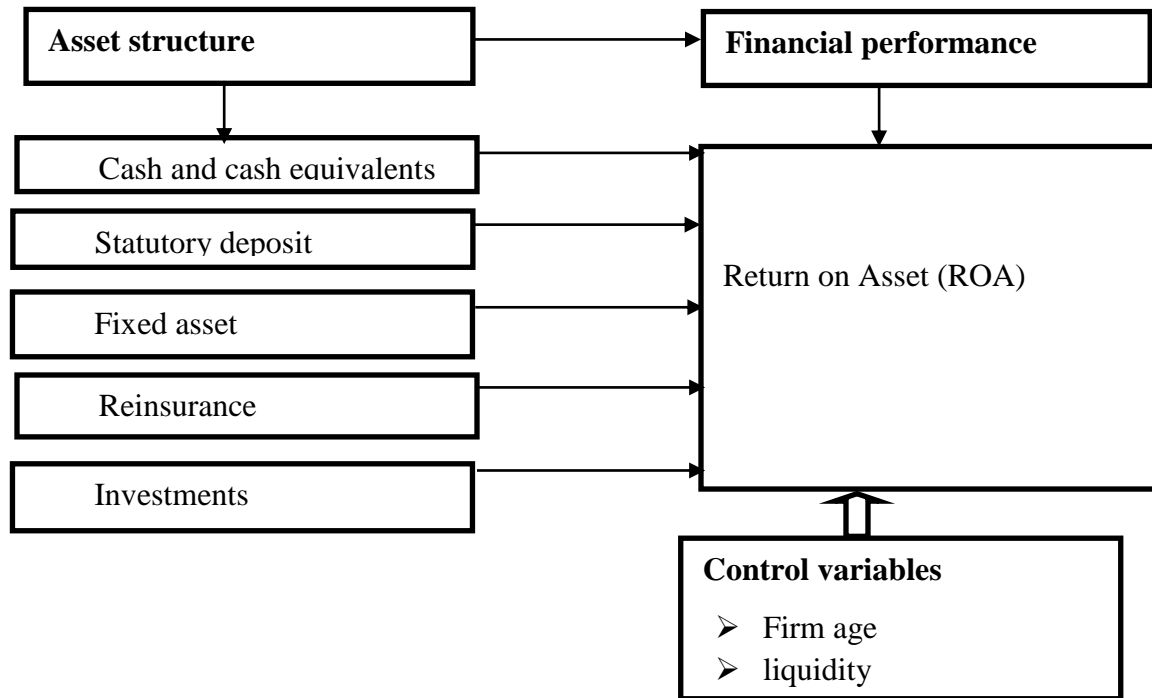
2.3.CONCEPTUAL FRAMEWORK

According to Mugenda and Mugenda (2003) a conceptual framework stands for a hypothetical model identifying the model under study and the relationship between the independent and the dependent variables. Kothari (2004) defined a variable as concept which can be expressed in quantitative terms. Dependent variable a result of another variable, and a variable that causes the dependent variable is known as independent variable (Kothari, 2004).

The conceptual framework of the study is based on the fundamental concepts of the study and the literature review. The following conceptual framework describes the effect of asset structure on insurance companies' financial performance. The assets components are independent

variables while financial performance which is measured by return on assets is dependent variable.

Figure 2.1: Schematic Conceptual Framework



Source: constructed by researcher.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 RESEARCH DESIGN

Research design refers to a blueprint of the research project enabling to collect measure and analyze data (Kothari, 2003). This study employed explanatory research design which is used to identify the extent and nature of cause-effect relationships between the independent and the dependent variables. It is appropriate for the study as it focused on relationship between asset structure and financial performance of companies under consideration.

3.2 RESEARCH APPROACH

A business research may use one of the three types of research approaches namely; quantitative, qualitative and mixed methods approach. Quantitative research is a means for testing objective theories by examining the relationship among variables (Creswell, 2009). Qualitative research approach is one in which the investigator often makes knowledge claims based primarily on the multiple meanings of individual experiences, socially and historically constructed meanings, participation in issues, collaboration or change oriented with an intent of developing a theory or pattern (Creswell, 2003). Mixed research is an approach to inquiry that combines or associates both qualitative and quantitative forms (Creswell, 2009).

Considering the research problem and objective, quantitative research approach is appropriate for this particular study. This is because the study was conducted with the use of numbers as explanatory variables are measured quantitatively.

3.3. TARGET POPULATION OF THE STUDY

All items in any field of inquiry constitute a population (Kothari, 2003). The target population of this study was insurance companies in Ethiopia. There are eighteen insurance companies which include; Ethiopian insurance corporation, Awash insurance S.C, African insurance S.C, National insurance company of Ethiopia S.C, Nyala insurance S.C, Nile insurance S.C, United insurance S.C, Global insurance S.C, Nib insurance S.C, Lion insurance S.C, Oromia Insurance S.C, Abay insurance S.C, Berhan insurance S.C, Tsehay insurance S.C, Ethio life and general insurance S.C, Lucy insurance S.C, Zemen insurance S.C and Bunna insurance S.C (NBE).

3.4. SAMPLE AND SAMPLING TECHNIQUES

The total populations of insurance companies are eighteen but fifteen of them were selected for the study. This is due to the lack of full information required for this particular study which is seven years' financial statements. Accordingly, Bunna insurance S.C, Lucy insurance S.C and Zemen insurance S.C. are excluded from the study while the remaining fifteen insurance companies were selected as sample and included in the analysis.

3.5 DATA TYPE AND SOURCE

To examine the effect of asset structure on financial performance of insurance companies, the study used audited financial statements collected from NBE for seven consecutive years from 2014-2020. Hence, secondary data was collected through document review from NBE and other data were acquired from articles and websites of the companies.

3.6 METHOD OF DATA ANALYSIS

The secondary data obtained from NBE and websites of insurance companies was analyzed by using econometric software package known as STATA version 14. The study concentrated on quantitative analysis and econometric model was used to identify and measure the effect of asset structure on financial performance of Ethiopian insurance companies and panel regression technique.

3.7 MODEL SPECIFICATION

To achieve the research objectives, multiple linear regression and random effect model were employed based on panel data modeling techniques. Panel data is the combination of cross-sectional data and time-series data which is reflected by the different insurance companies and the period of study (2014 to 2020) respectively. Panel data contains more information as it incorporates variability among cross section units and across time (Gujarati, 2004).

Regression equation was formulated as follows (control variables are included):

$$ROA_{it} = \beta_0 + \beta_1 CCE_{it} + \beta_2 SD_{it} + \beta_3 FA_{it} + \beta_4 RE_{it} + \beta_5 INV_{it} + \beta_6 AG_{it} + \beta_7 LR_{it} + \varepsilon$$

ROA= Return on assets

CCE=cash and cash equivalents

SD= statutory deposit

FA= fixed asset

REI= reinsurance

INV= Investment

AG = firm's age

LR= liquidity ratio

β_0 = Constant

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7,$ = Regression coefficients of explanatory and control variables.

ε = Error term

i = Insurance company (i = 1 . . . 15) and t = the index of time periods (t = 1 . . . 7).

3.8 VARIABLE DESCRIPTION AND MEASUREMENT

3.8.1 Main Variables

1. Dependent variable

Dependent variable is financial performance which is measured by return on asset (ROA). ROA is considered as a better measurement as the objective of the study is to investigate the impact of asset structure on financial performance of Ethiopian insurance companies. ROA is measured as net income as the percentage of total asset (Brigham, 2010).

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

2. Independent variables

The independent variables are the components of asset of insurance companies and includes; cash and cash equivalents, statutory deposit, fixed asset, reinsurance and investment. In this study the proportion of each component to total assets is computed and used in analysis.

Cash balance is measured by the proportion of cash and cash equivalents.

$$CCE = \frac{\text{cash and cash equivalents}}{\text{Total Asset}}$$

Fixed Asset is measured by dividing fixed asset by total assets.

$$FA = \frac{\text{Fixed Asset}}{\text{Total Asset}}$$

Reinsurance is measured calculating the proportion of reinsurance.

$$RIN = \frac{\text{Reinsurance}}{\text{Total Asset}}$$

Statutory Deposit is measured by dividing statutory deposit by total assets.

$$SD = \frac{\text{statutory deposit}}{\text{Total Asset}}$$

Investment is measured by dividing total investments by total assets.

$$INV = \frac{\text{total investments}}{\text{Total Asset}}$$

3.8.2 Control Variables

Age of the firm:

Age of the firm describes the difference of observation year and establishment year of the company. Firm's age has positive and statistically significant effects on insurance company's performance ((Marjanović&Popović, 2020), (Guendouz&Ouassaf, 2018), (Abebe & Abera, 2019)). Age of the firm is measured by natural logarithm of age of firm.

Liquidity ratio (LR): Liquidity describes the degree to which an asset or security can be quickly bought or sold in the market without affecting the asset's price. Literatures indicated that it has positive and significant effect on performance of insurance companies (Mohammed (2014), Meaza (2014), Yuvaraj et al. (2013) and Emine (2015)). Liquidity is measured by the ratio of current assets to current liabilities.

3.9 Model validity

Data analysis is a systematic process which applies statistical techniques to evaluate data through inspecting and transforming using different models to draw useful information. To conduct the analysis, the researcher used STATA software version 14 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 31 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 BeraJarque 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 auto correlated. 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).

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

This chapter presents the data analysis and presents the outcome of the results. To achieve the objective of the study descriptive statistics, correlation analysis and regression analysis models were developed to create a relationship between independent variables and dependent variable. The study has a time series segment spanning from the period 2014 up to 2020 and across section segment which considered fifteen Ethiopian insurance companies. Accordingly, the result of descriptive statistics, correlation analysis, the test of CLRM assumption and result of the regression analysis are presented in the following sub-sections.

4.1 Descriptive Statistics

Table 4.1 below shows summary statistics of the variables with total observations of 105 (Stata output exist in Appendix). The mean, standard deviation and minimum and maximum values for the variables are presented.

Table 4.1. Descriptive statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
Return on Asset	105	0.07492	0.05195	-0.0965	0.3736
Cash and cash equivalents	105	0.37847	0.20273	0.0318	0.8346
Investment	105	0.11741	0.05843	0.0055	0.46
Statutory deposit	105	0.04391	0.05708	0.004	0.3907
Fixed asset	105	0.14493	0.10893	0.0272	0.4452
Reinsurance	105	0.09552	0.09674	0	0.4052
Liquidity	105	1.04194	0.23463	0.2626	1.632
Age	105	21.1333	9.3891	9	45

Source: output of stata.

The study conducted descriptive statistic using stata-14 software in order to provide more understanding about the study variables under investigation. As indicated in the above table, the mean of ROA is 7.49% with standard deviation of 5.19%. This indicates that, on average selected Ethiopian insurance companies have earned 7.49% profit from total asset. This indicates that the profit of the selected insurance firms is 7.49% of their total asset on average. The standard deviation was 0.0519 which means the value of ROA deviate from its mean to both

sides by 5.19 percent and indicate there was high variation in profitability of insurance companies from the mean. It has maximum statistic value of 37.3% with minimum statistic value of -9.6%. This shows that the maximum profit earned by most profitable insurance company was 37.3% of total assets while the minimum profit earned from total assets of the companies was -9.6% which reveals loss incurred up to 9.6% of total assets. Loss is incurred in financial institutions when there is high expenditure spent for fixed asset acquisition or other costs of expansion. The deviation among the companies is high and implies that there is considerable difference in profitability of insurance companies in Ethiopia.

The average value of cash and cash equivalents was 37.8% of the total asset of the companies under consideration with standard deviation of 20.2%. This value indicates that 37.8% of total assets of selected Ethiopian insurance companies are covered by cash and cash equivalents. The maximum value and minimum value is 83.4% and 3.18% respectively. This shows high variation of cash and cash equivalents among the firms. The maximum value (83.4%) indicates there is extremely excess cash hold by insurance companies which may have significant influence on their profitability. This reveals that there are an insurance companies that not invested most of their liquid assets on profitable long term assets. On the other hand, there are companies that held cash and cash equivalents only 3.18 percent of their total assets. Holding low amount of cash may result in shortage of liquidity for operation, particularly payments for claims and operating expenses. The standard deviation of 20.2 percent reveals that the value of cash and cash equivalents deviate from the mean by 20.2% and it shows high variation among insurance companies.

Investment of insurance companies is on various areas including governmental bond, investment in banks and investment in Ethiopian reinsurance company. It has the mean value of 11.7% with the standard deviation of 5.8% which specify that 11.7% of selected insurance companies' total assets are invested. The minimum value and maximum value is 0.5% and 46% respectively. These figures show that insurance companies with high investment proportion put 46% of their total asset on investment while those firms with lower proportion invest only 0.5% of their total assets. The proportion of investment is highly affected by legal requirements as insurance companies are restricted on investment. However, the minimum statistical value (0.5%) is low and shows there are areas on which insurance companies didn't invested. The standard deviation was 5.8 percent which shows that the value of investment deviates from its mean value and there

is low variation among insurance companies while the statistical value indicates variation from 0.5 percent to 46 percent which is high deviation.

Statutory deposit has the mean value of 4.39% with the standard deviation of 5.7%. It is the amount deposited at National Bank of Ethiopia and is regulatory requirement. Therefore, the variation of this asset is mainly due to different capital level insurance companies have as it is determined based on their amount of capital. Accordingly, on average 4.39% of selected insurance companies' total assets is deposited at National Bank of Ethiopia. The minimum value and maximum value is 0.4% and 39% respectively. This means that the minimum amount deposited at National Bank of Ethiopia is 0.4% of company's total assets while the maximum deposited amount is 39% of company's capital. The standard deviation was 5.7 percent which shows that statutory deposit deviate from its mean value to both sides by 5.7%.

Fixed asset has the mean value of 14.5% with the standard deviation of 10.9%. This figure specifies that total fixed assets covers on average 14.5% of total assets of the insurance companies under investigation. The maximum value and minimum value is 44.5% and 2.7% respectively. This implies that there are companies that maintain much of their asset in the form of fixed assets. Although there is limitation on investment in fixed assets, the fixed assets that are used in normal operation are also included. On the other hand, the minimum value indicates there are firms that have very low fixed asset proportion and they put only 2.7 percent of their total asset on fixed asset. The standard deviation was 10.9 percent which shows the value of fixed asset deviate from its mean value to both sides by 10.9%.

The average value of reinsurance is 9.5% with the standard deviation of 9.6%. This shows that on average, 9.5% of total assets of selected companies are reinsurance. The maximum value and minimum value is 40.5% and 0% respectively. As it is indication of the volume of insurance company's dependence on its insurers to settle claims, the maximum value shows high volume of dependence of companies on their insurers while the minimum value (zero) reveals no dependence of insurance companies on their insurers to settle claims. Although all insurers reinsure their exposures, this is happened because of offsetting of an asset (premium receivable) and liability (claims payable) and group them into a single net amount in the statement of financial position. According to financial reporting standards this is generally

not appropriate as it classifies dissimilar items together. The standard deviation was 9.6 percent which reveals that its value deviates from the mean value by 9.6% and indicates the variation of dependence on insurers among insurance companies.

Regarding control variables, the figures from the table shows that the average age of selected insurance companies is around 21 with range from 9 years to 45 years. This shows that the oldest insurance company has the age of 45 years from its establishment while the minimum age from establishment is 9 years. Liquidity ratio of the companies has average value of 1 which indicates that on average for each dollar of current liability companies has 1 dollar of current asset. Minimum value of liquidity ratio is 0.26 indicating low ability of firms to pay current liabilities. The maximum value of liquidity ratio is 1.63 indicating the companies' ability to settle current liabilities with excess amount of current assets. The standard deviation was 0.234 which reveals that the value of liquidity deviate from its mean value to both sides by 23.4 percent and shows the variation in the ability to settle current obligation among insurance companies.

4.2 Correlation Analysis

Correlation measures the degree of linear association between variables. Values of the correlation coefficient are always ranged between +1 and -1. A correlation coefficient of +1 indicates that the existence of a perfect positive association between the two variables, while a correlation coefficient of -1 indicates perfect negative association. A correlation coefficient of zero, on the other hand, indicates the absence of relationship (association) between two variables (Brooks, 2008). The table below shows the correlation matrix among dependent and independent variables.

Table 4.2 Correlation Matrix

	ROA	CCE	INV	SD	FA	REI	LIQ	AG
ROA	1.0000							
CCE	0.4740	1.0000						
INV	-0.1493	-0.3100	1.0000					
SD	-0.1521	-0.0660	-0.1888	1.0000				

FA	-0.1481	-0.2940	0.2323	0.2466	1.0000			
	0.1315	0.0023	0.0171	0.0112				
REI	-0.1945	-0.0932	-0.1420	-0.2299	-0.2519	1.0000		
	0.0468	0.3442	0.1484	0.0183	0.0095			
LIQ	0.2613	0.3164	-0.5712	-0.0045	-0.7626	0.0781	1.0000	
	0.0071	0.0010	0.0000	0.9639	0.0000	0.4284		
AG	0.2879	0.1209	0.2133	0.0521	0.2913	-0.0562	-0.3651	1.0000
	0.0029	0.2191	0.0289	0.5973	0.0026	0.5688	0.0001	

Source: output of stata.

The table above indicates that cash and cash equivalents has correlation coefficient of 0.474 which is significant at 1% significant level. The variable is positively and significantly correlated with return on asset of insurance firms in Ethiopia. This implies that the cash and cash equivalents insurance company increase, the financial performance also increases and the relationship is significant at 1% level of significance.

Reinsurance has correlation coefficient of -0.1945 which is significant at 5% significant level. The variable is negatively and significantly correlated with return on asset of insurance firms in Ethiopia. This implies that an increase in reinsurance decreases the financial performance of insurance companies in Ethiopia and the relationship is significant at 5% level of significance.

Investment has correlation coefficient of -0.1493 which is insignificant at 10% significant level. Likewise, statutory deposit has insignificant relationship with return on asset with correlation coefficient of -0.1521. Fixed asset has insignificant relationship with performance of Ethiopian insurance companies and its correlation coefficient is -0.1481. These variables have statistically insignificant correlation with return on asset of insurance firms in Ethiopia.

Regarding control variables, both liquidity and firm age are positively correlated to the performance of Ethiopian insurance companies. Liquidity has correlation coefficient of 0.2613 which is statistically significant at 1% level of significance. Age of firms has correlation coefficient of 0.2879 which is statistically significant at 10% level of significance.

4.3 Model Selection (Random Effect versus Fixed Effect Models)

There are broadly two classes of panel estimator approaches that can be employed in financial research: fixed effects models and random effects models (Brooks, 2008). The selection between

both approaches was done using Hausman test. The hypothesis for the model selection test was formulated as follow;

H0: Random effects model is appropriate.

H1: Fixed effects model is appropriate.

$\alpha = 0.05$

Decision Rule: Reject H0 if P value is less than significant level 0.05. Otherwise, do not reject H0.

Table 4.3 Hausman test

---- Coefficients ----				
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	b_fe	b_re	Difference	S.E.
CCE	.0793265	.0830885	-.003762	.007608
INV	.1206369	.0977322	.0229048	.0629669
SD	-.1118028	-.0331926	-.0786103	.0776571
FA	.1693008	.1020968	.067204	.0625269
REI	-.0308551	-.0517545	.0208994	.01444
LIQ	.1526501	.1183112	.0343389	.0317873

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B)
=5.54

Prob>chi2 = 0.4764

Source: output of stata.

The Hausman model selection test for this study has a p-value of 0.4764 for the regression models. Thus, the null hypothesis which is random effect model appropriate was accepted and the study used the random effect model.

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

There are different classical linear regression model (CLRM) assumptions that need to be satisfied. To maintain the data validity and robustness of the regressed result of the research, these basic assumptions must be tested for identifying any misspecification and correcting them so as to augment the research quality (Brooks, 2008). These assumptions include; errors equal zero mean, heteroscedasticity, autocorrelation and multicollinearity.

I) The errors have zero mean ($E(u_t) = 0$)

The first assumption required is that the average value of the errors is zero. In fact, if a constant term is included in the regression equation, this assumption will never be violated (Brooks, 2008). Hence, study’s regression model has included a constant term, so that this assumption was not violated.

II) Test for heteroskedasticity assumption ($var(u_t) = \sigma^2 < \infty$)

This assumption requires that the variance of the errors to be constant. If the errors do not have a constant variance, it is said that the assumption of homoscedasticity has been violated. This violation is termed as heteroscedasticity (Brooks, 2008). In this study Breusch and Pagan test was used to test for existence of heteroscedasticity across the range of explanatory variables.

Table 4.4 Breusch and Pagan test.

Estimated results:		
	Var	sd = sqrt(Var)
ROA	.0026988	.0519497
e	.0016314	.0403912
u	.0003011	.017353
Test: Var(u) = 0		
chibar2(01) = 1.12		
Prob > chibar2 = 0.1452		

Source: output of stata.

Since the p-value is 0.1452 which is considerably in excess of 0.05 we can conclude that there is no evidence of heteroscedasticity.

III) Test for autocorrelation assumption ($cov(u_i, u_j) = 0$ for $i \neq j$)

This assumption stated that the covariance between the error terms over time (or cross sectionals, for that type of data) is zero. In other words, it is assumed that the errors are uncorrelated with one another. If the errors are not uncorrelated with one another, it would be stated that they are auto correlated or that they are serially correlated (Brooks, 2008).

Table 4.5 Autocorrelation test.

. runtestResidual_RE		
N(Residual_RE<= .0008381456136703)	=	52
N(Residual_RE> .0008381456136703)	=	53

obs = 105
N(runs) = 57
z = 0.69
Prob>z =0.49

The result of autocorrelation test has a P-value of 0.49 implying that the data were consistent with a normal distribution assumption. Based on the statistical result, the study failed to reject the null hypothesis of normality at the 5% significance level.

IV) Test for multicollinearity

Multicollinearity indicates correlations among explanatory variables. When independent variables are multicollinear, there is overlap or sharing of predictive power which may lead to the paradoxical effect, where by the regression model fits the data well, but none of the explanatory variables (individually) has a significant impact in predicting the dependent variable (Gujarati,2004). Different literatures argued different correlation coefficient level to cause serious multicollinearity problem. For example, Cooper and Schendlar (2003), Brooks (2008) suggested 0.8.

Table 4.6 Multicollinearity

	CCE	INV	SD	FA	REI	LIQ	AG
CCE	1						
INV	-0.31	1					
SD	-0.066	-0.1888	1				
FA	-0.294	0.2323	0.2466	1			
REI	-0.0932	-0.1420	-0.2299	-0.2519	1		
LIQ	0.3164	-0.5712	-0.0045	-0.7626	0.0781	1	
AG	0.1209	0.1233	0.0521	0.2913	-0.0562	-0.3651	1

Source: output of stata.

The figures from above indicate that there is no multicollinearity problem since the correlations between the independent variables are below 0.8.

4.5 Result of the regression Analysis

$$ROA_{it} = -0.19 + 0.073CCE_{it} + 0.056INV_{it} - 0.891SD_{it} + 0.135FA_{it} - 0.084REI_{it} + 0.125LIQ_{it} + 0.042AG_{it} + \varepsilon$$

Table 4.7 regression result

ROA	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]
Cash and cash equivalents	0.0734	0.01968	3.73	0.000	.0349004 .1120682
Investment	0.0568	0.134905	0.42	0.674	-.2075897 .3212292
Statutory deposit	-0.8915	0.446440	-2.00	0.046	-1.766532 -.0165186
Fixed asset	0.1357	0.065396	2.08	0.038	.0076077 .2639575
Reinsurance	-0.0840	0.035630	-2.36	0.018	-.1538873 -.0142187
Liquidity	0.1252	0.046316	2.70	0.007	.0344971 .216056
Age	0.0421	0.011961	3.52	0.000	.0186823 .0655684
_cons	-0.1992	0.064794	-3.08	0.002	-.3262456 -.0722542

Source: output of stata.

4.5.1 Cash and cash equivalents (CCE)

The result of regression analysis indicated that cash and cash equivalents has a positive and statistically significant effect on financial performance of Ethiopian insurance companies at 1% significance level (p-value is 0.000). The coefficient estimate is 0.073 which reveals that when the cash and cash equivalents increase by 1 unit, holding all others constant, return on assets of insurance companies in Ethiopia increase by 0.073. The positive sign of the coefficient specify that cash and cash equivalents and return on assets have direct relationship.

Cash and cash equivalent is the most liquid asset that allows firms to take advantage of the moment. By holding more cash and cash equivalent firms can take advantage of new opportunities and make profitable investment that have effect on their profitability. Insurance companies use cash to payout their liabilities and invest idle cash in different profitable areas in accordance with the investment regulations of the country. Hence, holding more cash helps insurance companies to take new opportunities and improve their performance. On the other hand, the cash holdings decision need to avoid the negative impact of holding too much cash as

holding too much cash have high opportunity cost of holding no interest bearing money, (Elkinawy & Stater, 2007).

Therefore, cash and cash equivalent is essential for insurance companies and has positive significant effect on financial performance of insurance companies in Ethiopia. The result supports the hypothesis and is consistent with the findings of study done by (Ehiogu & Nnamocha, 2018) and (Yahaya et al., 2015) which concluded that cash and cash equivalents has positive and significant effect on profitability of insurance companies.

4.5.2 Investment (INV)

Investment includes investment in government securities or investment in other companies' equity and this study considered total investment which includes all kinds of investments. As per the result of regression analysis, investment has positive relationship with financial performance of insurance companies in Ethiopia by a coefficient estimate of 0.056 with p-value of 0.674 which means it is statistically insignificant. This means that investment has statistically insignificant effect on return on asset which implies that the increase or decrease in investment has no statistical significant effect on return on asset. This opposes the hypothesis that states investment has significant effect on performance of insurance companies.

As per investment directive SIB 05/2004, the General Insurance Funds of an insurance company shall be invested in Treasury Bills and bank deposits not less than 65% of admitted assets; provided, however, that aggregate bank deposits held with any one bank shall not exceed 25% of total admitted assets; In investments in company shares not exceeding 15% of total admitted assets; In real estate not exceeding 10% of total admitted assets; 10% of admitted assets in investments of the insurance company's choice.

This NBE's investment proclamation imposed restrictions on Ethiopian insurance companies' investment activities which forces insurance companies to invest the majority of their funds in government securities and bank deposits at negative real interest rates. Besides, lack of infrastructure, especially a stock market, constrains insurance companies' investment activities (Ermias, 2010).

As a result, although it is expected to have significant impact, due to the above challenges, investment has insignificant effect on the performance of Ethiopian insurance companies. Studies also found that investment in equity and fixed deposit has insignificant effect on the performance of Ethiopian insurance companies (Binyam, 2018). Accordingly, the finding of the study is partially opposed with the result of the study done by Mariam, (2013), Veronica (2013) and Husain (2016). These studies found that investment has positive and significant effect on return on total assets whereas the result above indicated that it has positive relationship but statistically insignificant.

4.5.3 Statutory deposit (SD)

The result from regression analysis indicated statutory deposit has a negative relationship with Ethiopian insurance companies' financial performance by a coefficient estimate of -0.891. This implies that holding other independent variables constant, a one percent increases in statutory deposit decreases return on asset (ROA) of Ethiopian insurance companies by 89.1% and the p value of statutory deposit is 0.046 specifying it is statistically significant at 5% level of significance.

Statutory deposit is the amount that must be kept with the National Bank of Ethiopia in line with directive no. 86/1994 which should amount 15% of the paid up capital and can be kept either in cash or government securities. However, as per the Proclamation, the deposit or any part thereof shall not be withdrawn except with the written permission of the National Bank of Ethiopia; nor shall such deposit be used as a pledge or security against any loan or overdraft in order to get interest. This reveals that the amount deposit by insurance companies remain idle and have zero return. An increase in this amount will result in increase in idle resources and eventually result in decrease the profit of the companies.

Consequently, the result showed statutory deposit has negative and significant effect on performance of Ethiopian insurance companies which partially supports the hypothesis and the findings of Ehiogu & Nnamocha (2018) that concluded significant effect of statutory deposit on financial performance of insurance companies.

4.5.4 Fixed asset (FA)

According to the regression result of fixed asset (FA) has a positive relationship with Ethiopian insurance companies' performance by a coefficient estimate of 0.135. This shows that holding other independent variables constant, a one percent increases in fixed asset increases return on asset (ROA) of Ethiopian insurance companies by 13.5%. The p value of fixed asset is 0.038 which reveals that it is statistically significant at 5% level of significance. Thus, the result supports the hypothesis that fixed asset has positive and statistically significant effect on performance of insurance companies in Ethiopia.

Fixed assets allow the firm to get a borrowing access easily, and it is due to serving as collateral to get sufficient loan. They are likely to have an impact on the borrowing decisions of a firm because they are less subject to informational asymmetries and usually have a greater value than intangible assets in case of bankruptcy. A firm, which retains large investments, in tangible assets will have smaller costs of financial distress than a firm that relies on intangible assets. Therefore, due to the availability of such borrowing capacity, low costs of financial distress, and the sufficient fund the firms get on loan basis to invest, fixed assets will has impact on the profitability of the insurance companies (Akintoye, 2008). Hence, these reasons make the relationship between fixed asset and profitability of the firm positive.

The finding of this study is consistent with previous study of Eskedar (2016), Olatunji & Adegbite (2014) and Olatunji et al (2014). All agreed that fixed asset has direct relationship with return on asset and statistically has significant impact on performance.

4.5.5 Reinsurance (REI)

Reinsurance is a way in which an insurer can recover a part of the claims they pay out, from the reinsurer in order to reduce the risk of the failure occurs from the large events. It is a measure of the companies' ability to bear risks.

According to the result of regression analysis reinsurance has a negative relationship with return on asset of Ethiopian insurance companies and its coefficient estimate is -0.084. This indicates that holding other independent variables constant, a one percent increases in reinsurance decreases return on asset (ROA) of Ethiopian insurance companies by 8.4%. The negative sign of coefficient shows the inverse relationship between reinsurance and return on asset. The p

value of reinsurance is 0.018 which shows that it is statistically significant at 5% level of significance.

Companies with higher reinsurance dependence tend to have a lower level of firm performance due to high costs of reinsurance activities. Besides, when insurers increase reinsurance dependence, it may result in low premium retention levels. If the retention is low, then the insurer's capital and surplus cannot be put to effective use because low retention means low underwriting profits and investment income (Lee & Lee, 2012) and Choi & Elyasiani, 2011)). In view of that, an increase in reinsurance independence result in lowered profitability of insurance companies and has negative relationship.

Therefore, the result supports the hypothesis that reinsurance has statistically significant effect on performance of insurance companies in Ethiopia but it is negatively related and is consistent with (Lee & Lee, 2012) and Choi & Elyasiani, 2011)). On the other hand, the result partially supports Olufemi (2019) that found positive and statistically significant effect of reinsurance on performance of insurance companies. This is due to negative relationship between reinsurance and return on asset of Ethiopian insurance companies.

4.5.6 Liquidity (LIQ)

Liquidity ratio shows that the capacity of insurance companies to meet any payments such as to pay out claims to policyholders. The ability to meet insurers' obligations towards these policy holders is extremely important. Insurers should have a positive cash flow to meet their immediate liabilities without affecting normal operation.

The result from regression analysis indicated that liquidity has a positive relationship with Ethiopian insurance companies' financial performance by a coefficient estimate of 0.125. This indicates that holding all other variables constant, a one unit increases in liquidity increases return on asset (ROA) of Ethiopian insurance companies by 12.5% and the p value of liquidity is 0.007 which implies it is statistically significant at 1% level of significance. Therefore, the result supports the hypothesis that liquidity has positive and statistically significant effect on performance of insurance companies in Ethiopia.

The lower liquidity ratio reveals that the insurance company will face difficulty in meeting payments in the right time and hence its liquidity is low. A lower liquidity ratio, then, would

mean that the insurance company will not easily get funds or else it will have to incur an extremely high rate of interest which will raise the cost of funding and eventually impose on the profitability of the insurance company unfavorably. Therefore, better liquidity ratio helps insurance companies not to incur high cost of funding and also to take the new opportunities as they have enough liquid assets. Eventually, liquidity has positive effect on profitability of insurance companies by decreasing cost and raising return from investment.

Hence, the finding of the study is consistent with previous studies' result that concluded liquidity has positive and statistically significant effect on performance of insurance companies (see, Amal et al (2012), (Naveed, Zulfqar, & Ahmad, 2011) while contradict with other studies that found negative and significant relation between liquidity and profitability of the insurance companies like Chen & Wong (2004), Yuvaraj et al (2013), Abate (2012).

4.5.7 Age (AG)

Age of the firm is another control variable which is not the main concern of the study. The result from regression analysis indicated that age has a positive relationship with Ethiopian insurance companies' financial performance by a coefficient estimate of 0.042. This indicates that holding all other variables constant, a one year increase of the company increases return on asset (ROA) of Ethiopian insurance companies by 4.2% and the p value of 0.00 implies that it is statistically significant at 1% level of significance. Therefore, the result supports the hypothesis that the age of the company has positive and statistically significant effect on performance of insurance companies in Ethiopia.

Newly established companies are not expected to be profitable in the first years of operation as they only focus on market penetration rather than focusing on profitability. Through experience firm's can focus on increasing profitability by using variety of ways which maximize their profit. Studies showed stated that older firms are more experienced, and have enjoyed the benefits of learning, are not prone to the liabilities of newness, and can, therefore, enjoy superior performance, older firms may also benefit from reputation effects, which allow them to earn a higher margin on sales (Almajali et al, 2012). These benefits help the companies to maximize their profit and hence, an increase in the age of the firm increases the performance of firms including insurance companies.

The finding above is consistent with the outcome of Marjanović & Popović (2020), (Guendouz & Ouassaf, 2018) and Abebe & Abera (2019) that stated age of the firms are regarded as the main determinants of financial performance. The study opposed the results of Yuvaraj et al (2013) and Abate (2012) that concluded age of the company is not significantly related with profitability of insurance companies.

Table 4.8 Summary of actual and expected effects of explanatory variables on the ROA

Hypotheses	Independent Variables	Alternative Hypothesis on return on asset	Actual result
H1	Cash and Cash Equivalent	Positive and statistically significant	Positive and statistically significant
H2	Investment	Positive and statistically significant	Positive and statistically insignificant
H3	Statutory Deposit	Positive and statistically significant	Negative and statistically significant
H4	Fixed Asset	Positive and statistically significant	Positive and statistically significant
H5	Reinsurance	Positive and statistically significant	Negative and statistically significant

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1. CONCLUSION

The objective of the study was to examine the effect of asset structure on performance of insurance companies in Ethiopia. Components of asset including cash and cash equivalents, fixed asset, reinsurance, statutory deposit and investments were used as independent variables and return on asset, which was a measurement of insurance companies' financial performance, was used as dependent variable. Liquidity and firm's age were considered as control variable. Panel regression model was applied to seven years (2014 to 2020) of data collected from fifteen insurance companies in Ethiopia. Based on Hausman test random effect (RE) model was selected and employed.

In order to ensure that the data fit with the basic assumptions of CLRM, the test for Multicollinearity, Heteroscedasticity and Autocorrelation are carried out. Breusch and Pagan test was used to test for existence of heteroscedasticity across the range of explanatory variables. The result showed that the p-value is in excess of 0.05 which indicate no evidence for the presence of heteroscedasticity. The test for multicollinearity was carried out to examine high correlation between independent variables. There are low correlation coefficients find in the study indicate that no problem of multicollinearity. Autocorrelation is used 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 overall result obtained from the regression model indicates cash and cash equivalents, fixed asset, liquidity and age of firm had a positive and significant effect on performance of insurance companies in Ethiopia. Statutory deposit and reinsurance had a negative and significant effect on performance of insurance companies. However, investment had a positive and insignificant effect on performance of insurance companies. Generally it can be concluded that most components of insurance companies' asset has an effect on their performance in Ethiopia.

- Cash and cash equivalents has a positive and statistically significant effect on financial performance of Ethiopian insurance companies during the study period at 1% significance level. When the ratio of cash and cash equivalents to total asset increases by 1%, holding the other factors constant, ROA on average will be increase by 7.3%. This might due to the fact

that firms can take advantage of new opportunities and make profitable investment that help to improve their performance. Thus, the decrease or increase of cash and cash equivalents has positive and significant effect on the performance of insurance companies in Ethiopia.

- Investment has positive but insignificant effect on the financial performance of insurance companies in Ethiopia. This might be due to the restrictions imposed on Ethiopian insurance companies' investment activities by NBE's investment proclamation which forces insurance companies to invest the majority of their funds in government securities and bank deposits at negative real interest rates and lack of infrastructure. Thus, the increase or decrease in investment has no effect on the performance of insurance companies in Ethiopia.
- Statutory deposit has a negative and significant effect on the financial performance of Ethiopian insurance companies at 5% level of significance. When the ratio of statutory deposit to total asset increases by 1%, holding other independent variables constant, decreases return on asset (ROA) of Ethiopian insurance companies by 89.1%. This is due to the fact that the amount deposited by insurance companies remains idle and has zero return. Thus, an increase or decrease in statutory deposit has negative and significant on the performance of insurance companies in Ethiopia.
- Fixed asset has a positive and significant effect on the financial performance of Ethiopian insurance companies at 5% level of significance. Holding other independent variables constant, a one percent increases in fixed asset ratio to total assets increases return on asset of Ethiopian insurance companies by 13.5%. This might be due to the availability of borrowing capacity, low costs of financial distress, and the sufficient fund the firms get on loan basis to invest. Thus, fixed asset has positive and statistically significant effect on performance of insurance companies in Ethiopia.
- Reinsurance has a negative and significant effect on the financial performance of Ethiopian insurance companies at 5% level of significance. When the ratio of reinsurance to total assets increase by 1%, holding factors constant, on average return on asset decrease by 8.4%. This might be because of high costs of reinsurance activities and low premium retention levels. Thus, an increase or decrease in reinsurance has negative and significant effect on the financial performance of Ethiopian insurance companies.

- Liquidity ratio has a positive and significant effect on the financial performance of Ethiopian insurance companies at 1% level of significance. Holding all other variables constant, a one unit increases in liquidity increases return on asset (ROA) of Ethiopian insurance companies by 12.5%. Thus, an increase or decrease in liquidity ratio has a positive and statistically significant effect on performance of insurance companies in Ethiopia.
- Age of the firm has a positive and significant effect on financial performance of Ethiopian insurance companies at 1% level of significance. Holding all other variables constant, a one year increase of the age of company increases return on asset of Ethiopian insurance companies by 4.2%. Thus, an increase or decrease in the age of the company has positive and statistically significant effect on performance of insurance companies in Ethiopia.

So the researcher concludes that elements of insurance companies' asset such as cash and cash equivalents, fixed asset, liquidity ratio and age of firm have a positive and significant effect whereas statutory deposit and reinsurance have negative and significant effect on performance of insurance companies in Ethiopia. On the other hand, investment has insignificant effect on the performance of insurance companies in Ethiopia.

5.2 RECOMMENDATION

Based on the findings of the study, the researcher has drawn the following recommendations.

- Cash and cash equivalents has positive and significant effect on the financial performance of insurance companies. Therefore, managers should hold cash and cash equivalents to the extent that improve the financial performance of the company. However, if cash holding increases highly and kept idle, there will be excess fund and have high opportunity cost of holding no interest bearing money. On the other hand, if cash and cash equivalents decreases there will be deficit of liquid asset to run the day to day operation. Hence, Firms should have optimum cash holding reserves and efforts should be made by management to increase the value of the company through the funding policy. Besides, the management has to also plan to invest the idle cash in the short term investments including treasury bills which in turn increase profitability and reduce cost of fund.
- Investment has no significant effect on the financial performance of insurance companies in Ethiopia. Although investment is expected to improve the earnings of the companies,

Ethiopian insurance companies are forced to invest the majority of their funds in government securities and bank deposits at negative interest rates. Lack of stock market also constrains insurance companies' investment activities. Hence, investment is found to be statistically insignificant. Therefore, managers should analyze different investment options and involve in investments that will increase the firm's performance. In the near future there will be beginning of capital market in Ethiopia, this may create good opportunity for firms like insurance company by enhance initiatives to establish new and expand/diversify existing businesses by providing venture capital as well as the flexibility to exit from or simply change investment portfolios and attract a credible volume of foreign direct investment. So, the managers of insurance company should prepare for such opportunity. Regulatory body also need to consider this challenge and advance the limit of investments in profitable areas as well as reduce the limit of investments in areas that diminish the profit of insurance companies.

- Statutory deposit has a negative and significant effect on the financial performance of Ethiopian insurance companies. Since it is the amount that must be kept with the National Bank of Ethiopia and shall not be withdrawn except with the written permission of the National Bank of Ethiopia, it remains idle. But, it can be kept either in cash or government securities. Therefore, managers should keep in government securities to the extent that is possible in accordance with the regulation which is better than cash. As it is regulatory requirement and impossible to avoid, National Bank of Ethiopia can help companies by lowering the rate at which statutory deposit increase.
- Fixed asset has positive and significant effect on the financial performance of insurance companies. Thus, insurance companies should increase investment on fixed in terms of building and investing in other companies' asset so as to boost their profitability through the income derived from rent and shares divided. In addition, the companies need to invest on different types of fixed assets that will help them minimize costs and increase operational efficiency. In order to improve their performance insurance companies also have to manage fixed assets efficiently. The National Bank of Ethiopia, on the other side has to raise the regulatory limit on fixed asset investment with due attention that will enable the companies to derive better profit and reinvest in other ends.

- Reinsurance has a negative and significant effect on the financial performance of Ethiopian insurance companies. The inverse relationship is due to the fact that companies with higher reinsurance dependence tend to have high costs of reinsurance activities and low premium retention levels which make insurer's capital and surplus cannot be put to effective use. Therefore, managers should consider the costs of higher reinsurance dependence and minimize their reinsurance dependence. Although reinsurance helps them to minimize risks optimum level should be maintained to balance its benefit with costs.

5.3 Suggestions for Further Studies

In this study only five elements of assets are included and the researcher recommends further studies on the insurance industry by including the other components and unexplained part of the variations, based on the result of this study.

Furthermore, the researcher recommends further studies on asset structure by increasing a period of review to raise the number of observation.

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APPENDICES

Appendix A: List of Ethiopian insurance company with their opening years before 2014

Sr. No.	Ethiopian Insurance companies	Establishment year
1	Ethiopian Insurance Corporation	1976
2	Awash Insurance Company S.C	1995
3	Global Insurance Company S.C	1997
4	Nile Insurance Company S.C.	1995
5	National Insurance Company of Ethiopia S.C	1994
6	Africa Insurance Company S.C	1994
7	Nib Insurance Company S.C.	2002
8	Nyala Insurance S.C.	1995
9	United Insurance Company S.C	1994
10	Oromia Insurance Company S.C.	2009
11	Lion Insurance Company S.C.	2007
12	Abay Insurance S.C	2010
13	Berhan Insurance S.C.	2010
14	Tsehay Insurance S.C.	2012
15	Ethio-Life Insurance S.C.	2008

Appendix B: summary statistics

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. summarize roa cce inv sd fa rei liq age
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Variable	Obs	Mean	Std. Dev.	Min	Max
roa	105	.074921	.0519497	-.0965	.3736
cce	105	.3784695	.202734	.0318	.8346
inv	105	.1174114	.0584267	.0055	.46
sd	105	.0439133	.0570827	.004	.3907
fa	105	.1449267	.1089283	.0272	.4452
rei	105	.0955219	.0967414	0	.4052
liq	105	1.04194	.2346258	.2626	1.632
age	105	21.13333	9.389096	9	45

Appendix C: correlation result

. pwcorr roa cce inv sd fa rei liq ag, sig star (0.1)

	roa	cce	inv	sd	fa	rei	liq
roa	1.0000						
cce	0.4740*	1.0000					
	0.0000						
inv	-0.1493	-0.3100*	1.0000				
	0.1285	0.0013					
sd	-0.1521	-0.0660	-0.1888*	1.0000			
	0.1213	0.5038	0.0537				
fa	-0.1481	-0.2940*	0.2323*	0.2466*	1.0000		
	0.1315	0.0023	0.0171	0.0112			
rei	-0.1945*	-0.0932	-0.1420	-0.2299*	-0.2519*	1.0000	
	0.0468	0.3442	0.1484	0.0183	0.0095		
liq	0.2613*	0.3164*	-0.5712*	-0.0045	-0.7626*	0.0781	1.0000
	0.0071	0.0010	0.0000	0.9639	0.0000	0.4284	
ag	0.2879*	0.1209	0.2133*	0.0521	0.2913*	-0.0562	-0.3651*
	0.0029	0.2191	0.0289	0.5973	0.0026	0.5688	0.0001

Appendix D: Hausman test.

```
. hausman fixed random
```

	—— Coefficients ——			sqrt(diag(V_b-V_B)) S.E.
	(b) fixed	(B) random	(b-B) Difference	
cce	.0793265	.0830885	-.003762	.007608
inv	.1206369	.0977322	.0229048	.0629669
sd	-.1118028	-.0331926	-.0786103	.0776571
fa	.1693008	.1020968	.067204	.0625269
rei	-.0308551	-.0517545	.0208994	.01444
liq	.1526501	.1183112	.0343389	.0317873

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

Test: Ho: difference in coefficients not systematic

```
chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B)
          =          5.54
Prob>chi2 =          0.4764
```

Appendix E: Breusch and pagan test result

```
. xttest0
```

Breusch and Pagan Lagrangian multiplier test for random effects

```
roa[id,t] = Xb + u[id] + e[id,t]
```

Estimated results:

	Var	sd = sqrt(Var)
roa	.0026988	.0519497
e	.0016314	.0403912
u	.0003011	.017353

Test: Var(u) = 0

```
chibar2(01) =          1.12
Prob > chibar2 =          0.1452
```


Appendix F: autocorrelation test

```
. predict Residual_RE, e

. runtest Residual_RE
N(Residual_RE <= .0008381456136703) = 52
N(Residual_RE > .0008381456136703) = 53
      obs = 105
      N(runs) = 57
      z = .69
      Prob>|z| = .49
```

Appendix G: multicollinearity test

```
. pwcorr cce inv sd fa rei liq ag
```

	cce	inv	sd	fa	rei	liq	ag
cce	1.0000						
inv	-0.3100	1.0000					
sd	-0.0660	-0.1888	1.0000				
fa	-0.2940	0.2323	0.2466	1.0000			
rei	-0.0932	-0.1420	-0.2299	-0.2519	1.0000		
liq	0.3164	-0.5712	-0.0045	-0.7626	0.0781	1.0000	
ag	0.1209	0.2133	0.0521	0.2913	-0.0562	-0.3651	1.0000

Appendix H: regression result

```
. xtreg roa cce inv sd fa rei liq ag, re vce(robust)
```

```
Random-effects GLS regression           Number of obs   =       105
Group variable: id                     Number of groups =        15

R-sq:                                   Obs per group:
    within = 0.2781                      min =           7
    between = 0.6417                     avg =          7.0
    overall = 0.4128                      max =           7

                                           Wald chi2(7)    =       103.47
corr(u_i, X) = 0 (assumed)              Prob > chi2     =         0.0000
```

(Std. Err. adjusted for 15 clusters in id)

roa	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
cce	.0734843	.019686	3.73	0.000	.0349004	.1120682
inv	.0568198	.1349053	0.42	0.674	-.2075897	.3212292
sd	-.8915252	.4464402	-2.00	0.046	-1.766532	-.0165186
fa	.1357826	.0653965	2.08	0.038	.0076077	.2639575
rei	-.084053	.0356304	-2.36	0.018	-.1538873	-.0142187
liq	.1252765	.0463169	2.70	0.007	.0344971	.216056
ag	.0421254	.011961	3.52	0.000	.0186823	.0655684
_cons	-.1992499	.0647949	-3.08	0.002	-.3262456	-.0722542
sigma_u	.01820062					
sigma_e	.03886436					
rho	.17986773	(fraction of variance due to u_i)				