THE EFFECT OF TYPES OF INVESTMENT ON FINANCIAL PERFORMANCE OF INSURANCE COMPANIES IN ETHIOPIA

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GRADUATE PROGRAM

This is to certify that this thesis prepared by Fahmi Shifferaw, entitled; "The Effect of Types of Investment on the Financial Performance of Insurance Companies in Ethiopia" and submitted in partial fulfillment of the requirements for the Degree of Master of Science in Accounting and Finance complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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STATEMENT OF DECLARATION

I, Fahmi Shifferaw, hereby declare that this research work entitled; "The Effect of Types of Investment on the Financial Performance of Insurance Companies in Ethiopia" submitted by me for the award of the Degree of Master of Science in Accounting and Finance, is my own original work and that all sources of materials used for the study have been duly acknowledged.

Fahmi Shifferaw _____ _____

Signature Date

ENDORSEMENT

This thesis Submitted to the School of Graduate Studies of Addis Ababa University College of Business and Economics for examination with my approval as a university advisor.

Tefferi Ghebray (DBL) _____ _____

Signature Date

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ACRONYMS AND ABBREVIATION

AGE	Ages of Insurances
AIS	Awash Insurance Share Company
AISC	Africa Insurance Share Company
EIS	Ethiopian Insurance Corporation
GIS	Global Insurance Share Company
IGB	Investment in Government Bond
IPR	Investment in Properties
IS	Insurance Size
ISHR	Investment in Shares
LIC	Lion Insurance Share Company
LR	Liquidity Ratio
NBE	National Bank of Ethiopia
NIC	Nib Insurance Company
NICE	National Insurance Share Company
NIISC	Nile Insurance Share Company
NISCO	Nyala Insurance Share Company
OIC	Oromia Insurance Share Company
ROA	Return on Aasset
STATA	General Ppurpose Sstatistical Ssoftware Ppackage
UNIC	United Insurance Share Company

ABSTRACT

Insurance plays a major role as risks mitigating mechanism in modern day financial system. The existence and survival of financially strong Insurance Companies play crucial role in development of financial and social stability, expansion of trade and production and economic development. For Insurers to be more reliable and financially sound, knowing what factors affect their financial performance is very crucial. To achieve this objective, this study specified the relationship between the different types of investments factors and the overall performance of insurance companies in Ethiopia as measured by ROA. The sequential explanatory strategy of the mixed research approach was used to identify the relationship between independent variables of investment in properties, investment in government bond, investment in shares, liquidity ratio and age of the company and dependent variable ROA. The study also used secondary panel data during the period 2011 to 2020 and select eleven insurance companies from the total insurance companies operates in Ethiopia using purposive sampling techniques. Multi-linear regression analysis and OLS regression analysis have been performed to analyse the financial performance of insurance companies using Random effect model. The study finds that return on asset has be negatively and insignificantly affected by investment in properties. On the other hand, investment in government bond has a positive but statistically insignificant effect on ROA. However, investments in shares and age of the insurance companies have strongly positive and significant effect on the financial performance of the insurers. In addition to that, the return on asset has been positively and significantly affected by insurance size and liquidity ratio. The same result revealed from the interviewees on the relation between the variables in the study and ROA. Therefore, the study recommended insurance companies to invest more in shares and gave emphasis on company's specific factors, company size, age representing experience and liquidity ratio to enhance their financial Performance objectives.

Key Terms: *Financial Performance, Insurance Companies, Ethiopia, Return On Asset, Mixed Methods.*

CHAPTER ONE
INTRODUCTION

1.1. Background of the Study

Financial performance is the presentation of information concerning the assets, liabilities, income and expense, changes in equity and cash flows of an organization (Salim & Santosyah, 2019). A company's performance has been focusing on the operational effectiveness and efficiency, which might influence its survival directly (Ho & Zhu, 2004). To determine whether or not company was capable of accomplishing its goals and objectives (Ismailia, 2011). Performance measures remain relevant and continue to reflect the issues of importance to a business organization (Lynch & Cross, 1991). Despite its importance, financial performance is a difficult concept in terms of both its definition and measurement (Ostroff & Schmidt, 1993). There is no ultimate consensus on the best way to measure and to identify the factors that affect overall profitability (Liargovas & Skandalis, 2010; Omondi & Muturi, 2013). Cekrezi (2015) recommends the use of a comprehensive method to measure them. The effect of investment on the financial performance of a firm may not be long-lasting but a temporary position that may last for some short time (Loof & Heshmat, 2008). Studies on the effect of investment on the financial performance of insurance companies are scarce and most of similar studies are focused on banks. Besides, the prevailing ones have not reached to a common conclusion, for example Veronica, 2015 and Ezekiel, 2008 on government bond and Binyam, 2018; Mariam, 2013 and Tsion, 2018. There is a continuing call for determinants of the financial performance (profitability) on Ethiopian insurance companies (Yuvaraj & Abate, 2013; Meaza, 2014; Hadush, 2015; Daniel & Tilahun, 2013; Suheyli, 2015 & Feisel, 2020). This study, thus, proposes to examine how and why the financial performance of insurance companies in Ethiopia are affect by the different types of investments.

1.2. Problem Statement

Within the macro-economy framework financial performance is important for insurers as well as to various stakeholders including agents, policyholders, and policy-makers (Doumpos et al., 2012), the academic literature on the determinants of insurance financial performance are limited (Burca & Batrinca, 2014; Florez-Lopez, 2007; Pottier & Sommer, 1999). There is indeed an ultimate difference between assessing the financial performance of insurance companies and other corporations (Florez-Lopez, 2007; Yakob et al., 2012). Unlike the various

definitions, interpretations and measurements of financial performance, there is no ultimate consensus on the best way to measure performance of insurance companies (Tsion, 2018 and Minyam, 2018) and to identify the factors that affect financial performance (Liargovas & Skandalis, 2010; Omondi & Muturi, 2013). There were few studies conducted on the impact of insurance investment on the overall profitability of insurance companies operated in Ethiopia (Veronica, 2015; Helmut, 2016; Ezekiel, 2008; Kathleen et al., 1998; Mariam, 2013; Binyam, 2018; Tsion, 2018 and Matthew, 2016). But those researches showed some deviations on their results and most of similar studies are focused on determinants of the financial performance of insurance companies in Ethiopia (Yuvaraj and Abate, 2013; Meaza, 2014; Hadush, 2015; Daniel and Tilahun, 2013 and Feisel, 2020) and banks.

These study gaps are understandable because every country have different economic, financial and political structure. Similarly, over the time the insurance industry profitably not remain the same, it varies and therefore, studies imply that the search for the different types of investment variables that affect the financial performance of insurance companies are intact. This study, thus, proposes to investigate the effect of the different types of investment on the profitability of insurers in Ethiopia. The research question of this study is:

How do the different types of investments affect the financial performance of insurance companies in Ethiopia?

1.3. Research Questions

The following research questions are answered through this study:

- What is the effect of investment in properties on the profitability of insurance companies in Ethiopia?
- What is the effect of investment in government bonds on the profitability of Ethiopian insurance companies?
- What is the effect of investment in shares on the profitability of Ethiopian insurance companies?
- What is the effect of age of the insurance companies on their profitability?

1.4. Objectives of the Study

1.4.1. General Objective

The overall objective of the research was to analyse the effect of the different types of investments on the overall profitability of insurance companies in Ethiopia.

1.4.2. Specific Objectives

- To analyse the effect of investment in Properties on the overall profitability of insurers in Ethiopia.
- To examine the effect of investment in government bond on profitability of insurers in Ethiopia.
- To analyse the effect of investment in shares of insurers on their profitability.
- To analyse the effect of age of the insurers on their financial performance.

1.5. Hypothesis of the Study

Based on the different types of investments factors and empirical review, the researcher tested the hypothesis of this study as follows:

H_1: Investment in properties has a positive significant effect on the profitability of insurers in Ethiopia.

H_2: Investment in government bond has a positive significant effect on the profitability of insurers in Ethiopia.

H_3: Company age has a positive and significant effect on the profitability of insurers.

H_4: Investment in shares has a positive significant effect on the profitability of insurers.

H_5: Insurance size has a positive and significant effect on performance of insurance companies.

H_6: Liquidity ratio has a positive significant effect on the profitability of insurers.

1.6. Significance of the Study

The study benefits the insurance company managers in Ethiopia and beyond to identify various types of investment factors that influence profitability of their companies. Besides, it will help them to identify ways of managing their portfolio without rejecting the NBE regulations. In addition, the insurance sectors may also adopt the study recommendations to improve their performance by using the opportunity that National Bank allowed them where possible. The study findings will also help to NBE to improve the investment regulations without making the policy highly restrictive and for various policy-making institutions in Ethiopia. The finding will also be of important to literature, as it will add on to the existing literature on profitability of insurance industries. Finally, future researcher may also use these finding as a basis for additional research.

1.7. Scope of the Study

There are different factors that affect the overall financial performance of Ethiopian insurance industries. However, this study was limited on how different types of investments, namely, properties, shares and government bonds affect the profitability of insurance companies in Ethiopia. In this study the profitability of insurance firms for the recent 10 years, 2011 - 2020 had been primarily taken in to account. The study enclosed eleven insurance companies based on their early establishments. There are different factors and conceptual delimitations that affects the profitability of insurance companies but this study mainly focused on four independent variables i.e. investment in properties, investment in government bond, investment in shares and age of the insurance companies. Beside the different data analysis methods, the researcher used multi-linear regression methods. In addition the researcher was used return on asset (ROA) as dependent variables for measuring the overall financial performance of insurance companies in Ethiopia.

1.8. Limitation of the Study

In the process of conducting this study, there are certain constraints to the study. In attaining its objective, the study limited to 11 insurance companies that found in Addis Ababa due to the researcher's intention to make the study more manageable. An investment that affects the profitability of insurance companies are different, but it is challenging to conclude the results of other's and reluctant of few respondents among selected samples to be interviewed was one of the other limitations encountered during the study.

1.9. Organization of the Study

This study is structured in to five chapters. Chapter one, the introductory part of the study will contain background about the study, problem statement, research questions, general and specific objective, hypothesis, significant, Scope, as well as limitation of the study. Chapter two is the literature reviews of both theoretical and empirical and conceptual framework was identified about the different types of investments on insurance companies and their profitability. The third chapter focused on research methodologies where research design, research approach, sources of data, population and sample size, data analysis techniques, model specification and variable definitions were presented. Chapter Four will contain results and discussions in which the finding results are interpreted. The fifth chapter included a summary of the study, as well as conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

The theoretical and empirical review, conceptual framework, research gap and conclusion on the different types of investment and the profitability of insurance companies in Ethiopia are summarized in this chapter. The empirical Review covered several studies which have been conducted in reference to the study variables highlighting the study outcome and areas for further study. This section was outlined accessible literature on profitability by different scholars across the globe.

2.2. Theoretical Review

2.2.1. Meaning of Investment

In the economist point of view, investment refers to the net increase to the overall economy capital, that are made up of services and products which have been utilized to make other products and services. Construction machinery and equipment as well as inventory are a good examples of investment (Weebly, 2013).

The term investing can be related with the unique states, but the main aim of investment utilize the finances throughout the time in order to maximize the their profitability. By using preceding consumption this day and investing their financial saving, investors anticipate to raise their future consumption to take possibilities through growing their wealth (Kristina, 2010).

2.2.2. Types of Investment

According Harvey (2012) people and organizations can benefit from a variety of investing options. This could be consists of mutual funds, stocks, government security investment, interest bearing or fixed time deposit bank account, investment in bonds, and other instruments of debt. Additionally a firm may choose to place their cash into other properties like rental property or real estate or other asset owned via the firms for this function.

According to Kristina (2010), the principal forms of investment include: Short period investment. They are investments whose maturity value should less than or equal to one year. Short time period investment also called money market instruments; the main reason is that such type of investments marketable financial assets are traded in the money market up to one year of maturity. When we compare the risk and return of such investment instruments with

other type of investment: Fixed-income securities, Common stock and Speculative investment, they will have usually lowered risk and return. In general, Treasury bills, Certificate of deposit, Commercial papers Banks' acceptance, repurchase agreements are the main instruments of short term investment.

2.2.3. Investment Related Theory

Keynes and Fisher (1960), concluded that investments are conducted till the NPV of all anticipated profit, is equal to the return on investment, capital. An investment is expected to generate a stream of future cash flows. Fisher referred to the discount rate as the rate of return over costs or the internal rate of return. Keynes, on the other hand, called it the marginal efficiency of capital, (Baddeley, 2003 and Alchian, 1955). The fundamental difference between the "Keynesian view" and Fisher ("Hayekian view") lies in the perception of risk and uncertainty, and how expectations are formed. Keynes did not regard investment as an adjustment process toward equilibrium.

Hayek (1941) and Fisher (1930), on the other hand, regarded investment as an optimal adjustment path towards an optimal capital stock. In the Keynesian theory, investments are not determined by some underlying optimal capital stock. Instead genuine or radical uncertainty takes a central position. Keynes believed that humans were "animal spirited" and that this, combined with irrational and volatile expectations, made the thought of investment as an adjustment process toward equilibrium futile.

Modern portfolio theory, relying on the work of Markowitz (1952) and the principals of the Capital Asset Pricing Model (CAPM), suggests that investors can improve the performance of their portfolios by allocating their investments into different classes of financial securities and industrial sectors that are not expected to react similarly if new information emerges. Solnik (1974) extends this theory to an international context and suggests that diversifying globally, as opposed to a strictly domestic portfolio, will lead to optimization of the risk return trade off. Therefore, investors should allocate their money into assets exhibiting low return correlation.

The background of CAPM was the study of the influence of investor behaviour on asset prices. The CAPM is the first model to introduce the notion of risk into the valuation of assets. It evaluates both asset returns in connection to market returns and the sensitivity of the security to the market (Amenc& Le Sourd, 2003). CAPM is in principle a method to calculate the rate of return which it is normal to demand of

an asset of a certain nature. The search for the normal rate of return is divided into two parts according to CAPM. On the one hand, a risk-free rate is found. On the other hand, the rate of return on a risky asset is found, constituting the risk premium. In CAPM the standard deviation of a single asset does not matter greatly, rather the effect of the asset on the systematic risk of the portfolio to which the asset is added. The main concern is the conjunction between the rate of return of the efficient portfolio and a single asset.

Arbitrage pricing theory (APT) holds that the expected return of a financial asset is largely based on its "beta". Beta is the measure of the relationship between company related factors which influence financial performance and the overall market in which the latter competes. Typically a company which has a beta of one will reflect the market whereas a beta score of 0.75 means that a company will move up or down to the extent of 75 per cent of the corresponding market movement. The Arbitrage Pricing Theory (APT) was developed primarily by Ross (1976) heuristic argument for the theory is based on the preclusion of arbitrage. The APT is a substitute for the Capital Asset Pricing Model (CAPM) in that both assert a linear relation between assets‟ expected returns and their covariance with other random variables. (In the CAPM, the covariance is with the market portfolio„s return.) The covariance is interpreted as a measure of risk that investors cannot avoid by diversification. Arbitrage Pricing Theory can be useful if one is investing in a company and wanted to measure the historical share price sensitivity to huge market fluctuations typical during the onset of bull and bear markets. Based on an investors long-term and short-term goals different investment strategies could be planned using APT as an exhibit.

2.2.4. Insurance Companies

All scholars around the world have tried to define the concept of insurance totally based on their opinion. Kunreuther (2010) defined insurance as a far financial institution or organization that permits the transfer of economic risk from people or firms to a collected group by means of a two side agreement. Every insurance carrier receives a set amount of protection against the perils he or she is exposed to, which is an uncertain future event for a smaller but certain payment. Similarly, Igbojekwe (2006) defined insurance as a contractual settlement and agreement between the insured and the insurer through which the insurance company agreed to counterbalance loss of insured. Then based on their agreements the insured should pay an agreed fee called premium. The insurer and the insured also called the promiser and the promise respectively. It is regularly represented by policy-makers of insurance, wherein the

insured gets financial protection from the insurer against losses due to the occurrence of any future events which is not under the control of the insured.

According to Chang (2018) enlightened the importance of insurance companies for individuals, firms and economy of the country. In his explanation, insurance provides financial support and protection and reduce uncertainties in business. There is always a fear of sudden loss so the Insurance Company provides a cover against any such loss. Insurance companies also generate funds by collecting premium from vast policy buyers and invested in governmental securities, stock, bonds and other investment areas. These funds are gainfully employed in industrial development of the country. Employment opportunities are increased by big investment leading to capital formation.

According to Malik (2011), insurance plays a crucial role in development of commercial and infrastructural businesses. Insurance company in broad changes the overall economy in a country as well as improves the living quality of individuals. Abate (2012), clearly stated that these companies are helping the economy of a country one way by transferring and sharing of risk which can create confidence over the occurrences of uncertain event and in another way insurance companies like other financial institutions plays the role of financial intermediation so as to channel financial resources from one to the other.

2.2.5. Financial Performance in Insurance Companies

Almajali (2012) described overall performance as the final result or outcome attained by either an individual or a collection of an organization corresponding to its obligation and authority in order to attain the given goals and objectives. It is also referred as ability of the appropriate utilization of resources of the company and its ability to attain organizational goals of company in several ways to develop competitive advantage and achieve organizations objectives.

The financial performance of the insurance companies dramatic works a vital role within the increase in the growth of an enterprise in general, which in the end brings to the achievements of an economy. These companies expose their profitability through expectation of exceptional kinds of risks. Based on current study the company may take different financial measurement ratios like Liquidity, Profitability, Solvency, etc. So that they will have complete information and understanding of the consequence of monetary risk on the performance of insurance companies (Arif, et al., 2015).

According to Chen and Wong (2004) insurance companies overall performance commonly expressed as "ultimate payment of premium generated from different activities like underwriting activities, return on asset, annual turnover, returns on investment and return on equity.

There are numerous elements that decide the economic overall performance of insurers. These elements decompose into two. The first class pertains to internal factors while the second group pertains to elements that originate from out of doors of the firm (Mwangi and Murigu, 2015). Among the first classes the leverage of the company is the main factors to decide the economic overall performance of insurers. This is usually a ratio that shows how the insurers are capable to control premium to yield their wealthiness. Additionally, it shows how the insurers carry off its financial publicity so as to conquer losses which might be unpredicted (Adams & Buckle, 2000).

In addition to investment in properties, shares, government bond and company age, the performance of an insurance company can also be determined by the size of the firm itself. A huge insurer has sufficient money to take advantage of the benefits and coverage, lowering operating costs and improving profitability. Smaller company, on the other hand, may not be able to do so due to a lack of finances.

Financial statements point out different indication of financial performance by financial ratios. Mostly financial analyst use ROA as measure of financial performance of insurance companies. An increase in the ratio of ROA reveals the positive financial performance of relative business and vice versa (Epps & Cereola, 2008).

2.2.6. Profitability

To define the term Profitability first should necessarily differentiate those two terms, Profit and ability. The term profit refers to the money earned during a given period of time after all expenses incurred of the period are deducted. Whereas profitability means the capacity of investment and the ability of firms to generate money from utilization of its resources (Suheyli, 2015).

The money that the company can produce with the utilization of resources it has is known as Profitability. The goal of most organization is profit maximization (Niresh & Velnampy, 2014). Profitability involves the capacity to make benefits from all the business operations of an organization, firm or company (Muya & Gathogo, 2016). Profit is the variation of revenue

received from sales and total costs which includes different manufacturing costs during a given period of time (Stierwald, 2010) and can be expressed as accounting or economic profit (Anene, 2014). Profitability portrays the efficiency of the management in converting the firm's resources to profits (Muya & Gathogo, 2016). Thus, firms are likely to gain a lot of benefits related to increased profitability (Niresh & Velnampy, 2014).

2.3. Empirical Review

Pervan (2012) studied on the influence of firm size on its business success. This study covered a broad range of firm sizes operating in Croatian manufacturing industry during a nine-year period (2002-2010). Beside size variable, the analysis included some other variables such as current ratio, asset turnover and debt ratio. The research used fixed effect panel data estimator to analyse the appropriate data. Based on the final output of the study, firm size has a positive but weak effect on firm performance. In respect to the remaining variables, the results of the fixed effect model showed that even if a greater indebtedness of a firm will lead to lower profitability, growth of asset utilization has significant and positive effect on firm's profitability, Liquidity measured by current ratio turned out to have a statistically insignificant impact on profitability.

Hajering (2018) made research aimed to analyse the influence of investment decisions on financial performance and corporate value; funding decision on financial performance and corporate value; dividend policy on financial performance and corporate value; and financial performance of corporate value. The study was mainly focused on selected banking industries that are properly listed on the Indonesia Stock Exchange market. The results showed investment decisions and funding decisions have positive and insignificant impact and a positive and significant impact on financial performance and firms value respectively; dividend policy has the same statistically significant and positive effect on both the profitability and firm's value. The value of the company has been positively and significantly affected by its overall profitability.

Olatunji et al. (2014) examined the effect of investment in long term asset on the overall performance of sampled banks of Nigerian. Multivariate regression and correlation are used to investigate the relationship between the explanatory variables, different types of fixed asset investment and financial performance or profitability. The results in this study provided that there is statistically significant and positive relationship between the different types of investment in long term asset and overall profitability of the banks of Nigeria.

Khresiat (2019) conducted research on Impact of investment decisions on the profits of Jordanian insurance companies Listed on the Amman Stock Exchange. The main purpose of this study was how investment decisions affect the Jordanian insurance companies. The study taken those investments, bank deposit and financial investing in banks. The final results of the study have been concluded that the Jordanian insurance companies' investment is a statistically significant impact in their financial performance. Therefore, investments should be directed to financial assets first, followed by loans and then real estate investments.

According to Peinan (2019) research conducted on the impact of information technology investment on enterprise financial performance in China. The Primary objective of this paper was to examine the impact of the different types of information technology (IT) investments on an extensive financial performance of enterprise in developing country, China. Based on the final analysis results, the impact of these different types of IT investments on the financial performance of the given enterprises yield mixed results. According to the sampled selected the findings and results of the study showed that those companies making investment in the different IT can significantly improve profitability and in addition to that they can improve their economic condition, and the growth ability, but they can not reduce business costs in the given periods.

Kwon (2019) studied on how financial performance in Korean companies affected by the long-term of investment on training and development. The overall aim of the research was to examine the correlation between two dependent variable variables; training and development investment with over all financial performance. To examine the effect and the relationship between development and training investment and 312 samples Korean over all financial performance the study was used latent growth modelling. The results indicated that even though growth in training and development investment is fixed at a given period of time, Prior financial performance and higher levels of training and development investment and growth in training and development investment and future financial performance were positively related.

According to Maingi (2018) research conducted on the effect of Investment strategies on financial performance of private equity funds investing in Kenya. The study revealed that changes in leveraged buyouts, venture capital, and mezzanine financing could determine the financial performance of private equity funds investing in Kenya. Thus, the study concludes that leveraged buyouts, venture capital, and mezzanine financing are the determinant of financial performance of private equity funds investing in Kenya. The research besides that

concluded there was positive and significant between profitability of private equity funds and leveraged buyouts, venture capital, and mezzanine financing. The study found that leveraged buyouts, venture capital, and mezzanine financing positively influence the financial performance of private equity funds investing in Kenya.

Research conducted by Joseph et al. (2011) on selected factors of profitability of the life insurance companies operating in Ghana. The major target of this research was what are the factors that affect insurers' profitability (that is, investment in income, and underwriting earnings) on the overall financial performance of existence life insurance companies in Ghana. To aid in a better conclusion the study took the overall performance of ten Ghana life insurance companies from sampled eleven years financial statement and examined the panel data using multiple linear regression analysis method. The final result of this study shows that underwriting premiums have a significant positive and negative effect on the insurers profit or earning and investment in income of the insurer respectively. The study also revealed that due to of price spikes and over trading (Buy and sell), there was a huge amount of underwriting losses for life insurers.

Veronica (2013) studied on the relationship among investment of insurers firms and their profitability in Kenya. To collect secondary data the researcher selects 32 insurers from the total population, fourty five insurance companies operated in Kenya. The study used multiple regression method. The results show that the independent variables investigated in this study have statistically significant effect on the dependent variables, the profitability of the existing companies.

Mariam (2013) under her studied in Kenya on all insurers operating as of the study conducted. The research objective was to show whether or not there is the relationship between insurance investment and the overall profitability. To do that the second hand data was collected from the authorized and appropriate bodies including the sampled insurance companies and finally to investigate the correction between the explanatory variables and the profitability, the researcher conducts a multivariate regression method. The study concluded that profitability of the selected insurance companies positively and significantly affected by their portfolio holdings. In addition to that the researcher determined that a one percent increase in investment (fixed assets and government securities) and investment in shares and deposit in banks have a positive and negative effect on the financial performance of insurance companies in Kenya respectively.

2.4. Empirical Studies in Ethiopia

Binyam (2018) conducted research on the result of investment on the profitability of insurers in Ethiopia. The study targeted to examine the correlation between the types investment on profitability of insurers. The analysis thought-about the presence of various insurance companies i.e. public and non- governmental insurance companies. The study used a sample of nine insurance out of seventeen from 2006 to 2016 year financial statements using the random sampling method and employed E-view. The data was conjointly conferred and examined through victimization statistical tools data point by mean, normal deviation, maximum and minimum. Return on Asset (ROA) was the only dependent variables accustomed to estimate insurance firms' performances during the period. The study used four independent variables and two control variables under investigations. The research depicted that profitability of the insurers i.e. return on asset incorporates in the study and investment in government certificate and long term asset had strong positive effect. On the opposite side, return on asset has negatively and insignificantly affected by equity investment. Furthermore, company size and liquidity ratio have a significant and positive effect on the dependent variable.

According to Tsion (2018) the study perform at the relational effect of investment conducted by selected eight insurance companies and on their respective accounting period of 2000/01 to 2017/18 period of profitability. The study used quantitative research design approach for the panel data through document reviewing and interprets the result using regression analysis supporting with the E-view econometrics software. The study was included four independent variables, two dependent (ROA and ROE) and two control variables (Insurance size and capital adequacy ratio). This empirical analysis show that the control variable and two of the independent variables (that is, time deposit investment and investment on fixed asset) have a positive and statistically significant effect, whereas, the remainder two independent variable: equity investment and Treasury bill investment have positive and statistically insignificant effect on the overall performance of the company.

Suheyli (2015) performed a study on the determinants of selected nine insurance companies profitability in Ethiopia and on their respective eleven years of accounting period of 2004/05 to 2014/15 period in Ethiopia. In order to gain this objective, the research used both quantitative and qualitative approach for the panel data through document reviewing and also an in-intensive interview became performed for the managers of the company and interprets the result using regression analysis supporting with the E-view econometrics software. The study

was included seven independent variables, one dependent (Profitability) variable and two control variables (company size and liquidity ratio). This empirical analysis shows that ratio of solvency, technical provision, and underwriting risk were significantly and negatively affect overall profitability of insurers. The same is true for the reinsurance dependence but insignificant effect on profitability. However, company size and liquidity ratio and premium growth have a direct and statistically significant effect on the dependent variable. In addition, the rest two dependent variables, economic growth rate and inflation have significant and insignificant effect on return on asset (ROA).

According to Meaza (2014) research conducted on the factors that influence the performance of insurers in Ethiopia. The aim of this research was to investigate the impact of insurance internal and macroeconomic factors on profitability using return on asset as a proxy. The study gathered secondary data of 6 years of 10 selected insurance companies. The regression result revealed that insurance size, tangible asset, insurance growth and management efficiency have positive and significant effect on profitability. However, the rest of firm specific variables (that is, leverage ratio and loss ratio/risk) have negative and statistically significant effect on the dependent variables. Moreover, Liquidity, inflation, and economic growth were not effect on the overall performance of insurance companies in Ethiopia.

Yuvaraj and Abate (2013) studied on the determinants of overall performance of insurer in Ethiopia. The researchers analysed the firm's specific factors effect on the dependent variable (ROA). The study gathered secondary data of 9 years of 9 selected insurance companies. From the empirical analysis; the three firm's specific factors (economic growth, size of company, and volume of capital) have positive and statistically significant effect on the ROA. However, two of the independent variables (that is, liquidity and leverage ratio) have a negative and statistically significant effect on the dependent variables. The age of companies and tangibility of assets have been now no longer considerably associated with profitability that means they were no any statistically significant effect of the ROA.

According to Hailu and Tassew (2018) research conducted on the relationship between investment diversification and profitability of Commercial banks in Ethiopia. The researchers used as a sample of seventeen CBE for four years. In order to attain the targeted objective quantitative research design approach were used, and the collected secondary data was analysed using multiple regression method. From the empirical analysis; The profitability of CBE is positively and significantly affected by the five investigated independent variables (financial

asset investment, investment in government securities, loan portfolio, insurance, and investment size). However, the rest of two independent variables (that is, interest and exchange rate volatility) have a negative and statistically significant effect on the dependent variables, profitability.

Abate (2012) studied on Factors Affecting insurance companies profitability in Ethiopia. The researcher tested the insurers' specific factors effect on the profitability (ROA) and used a sample of nine of Ethiopian insurance companies for nine years of operation. From the empirical analysis; the three firm's specific factors (economic growth, size of company, and volume of capital) have positive and statistically significant effect on the Profitability, ROA. However, two of the independent variables (that is, liquidity and leverage ratio) have a negative and statistically significant effect on the dependent variables. The age of companies and tangibility of assets have been now no longer considerably associated with profitability that means they were no any statistically significant effect of the ROA.

2.5. Research Gap

To the extent of the researcher's knowledge and understandings, there are few studies conducted associated with this study have look at different years and places with the aid of (Veronica, 2015; Helmut, 2016; Ezekiel, 2008; Kathleen et al., 1998; Mariam, 2013; Binyam, 2018; Tsion, 2018 and Matthew, 2016). But those researches showed some deviations on their results, for example both Veronica and Ezekiel included government in bond (government security) as an independent variable on their study. But as in step with the findings and conclusions of Veronica (2015) investment on bond has significant and negative effect on the profitability of insurance industries. However, Ezekiel (2008) observed that it has statistically significant and positive effect. The same is true on the research paper carried out by Mariam (2013), Binyam (2018) and Tsion (2018) all of them used the same independent investment variable that have an impact on the profitability of insurance companies. However, they reached on an extraordinary different results and conclusions. Therefore, most of the preceding empirical results performed related with the effect of investment on financial performance of insurance companies show different findings even though they were used the same variables in their empirical study.

Furthermore, as long as the researcher investigation on the previous empirical studies concern, a study carried out by Eskedar (2016), and Biniyam (2018) and Tsion (2018) focused about the impact of investment on profitability of commercial banks and insurance companies in Ethiopia

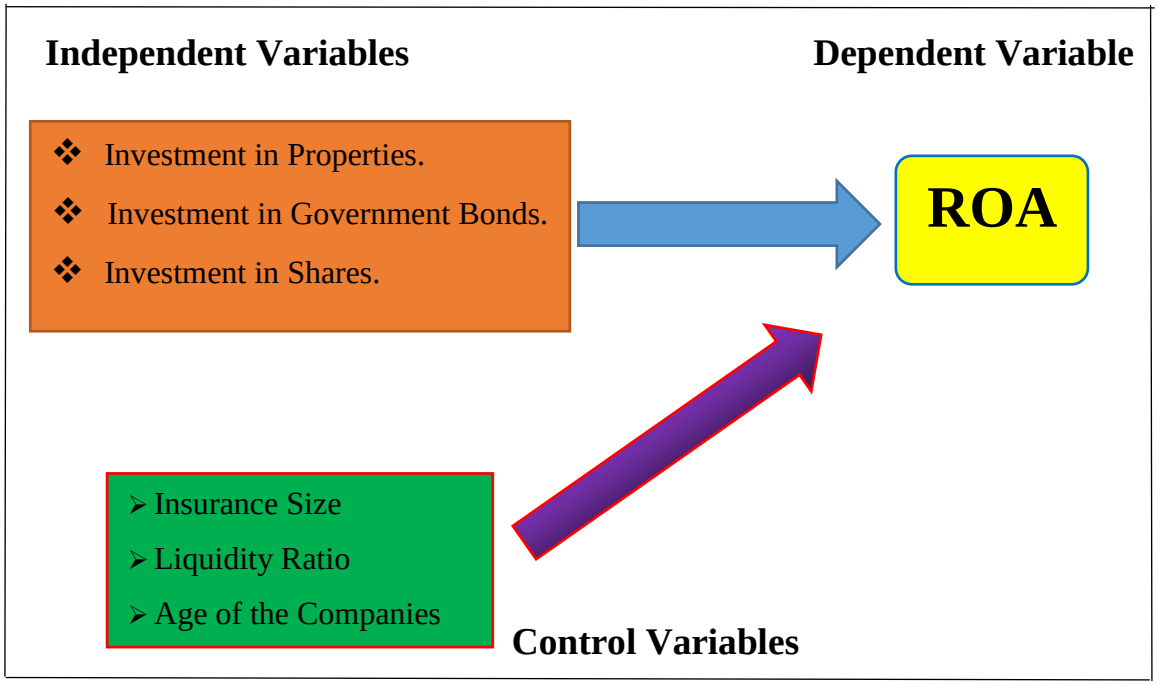
respectively. In addition to these studies most of the other prior researches carried out by Yuvaraj and Abate (2013), Meaza (2014), Hadush (2015), Daniel and Tilahun (2013) and Feisel (2020) mainly focused on determinant of the financial performance (profitability) on Ethiopian insurance companies. However, all these researches didn't particularly focus on the effect or impact of investment on the profitability of insurance companies in Ethiopia.

To the extent of the researcher knowledge and the literature review, in Ethiopia, there may be no any empirical study to take a look at research conducted on insurance companies by using incorporating investment in properties, investment in government bond, investment in shares and age of insurances and insurance size and liquidity ratio as control variables with profitability. Therefore, this study tries to fill this information and knowledge gap through analysing the effect of the different types of investments on the overall financial performance of insurance companies operated in Ethiopia.

2.6. Conceptual Framework

The study attempts to examine investment effect on the overall profitability of insurers operating in Ethiopia. The Figure below depicted the relationship between the independent variables including investment in Properties, investment in government bonds, investment in shares, age of the companies and control variables (liquidity ratio and size) with insurance sectors performance, return on asset (ROA).

Fig. 2.1. Conceptual Framework of the Study



Source: - Adapted by the researcher from literature review

CHAPTER THREE
RESEARCH MEYHODOLOGY AND DESIGN

3.1. Introduction

This section primarily discuses the research methodology and design in order to achieve the objective of the study because it is the science and philosophy behind all research. As the study employs a mixed approach it has begun with the Quantitative research design, data type and source, population and sample design, and its specifications, operational definitions and measurements of the variables. Secondly, the Qualitative research design and methodology, methods of analysis and statistical tools was used to analyse the effect of the different types of investment on the financial performance of insurance companies in Ethiopia.

3.2. Research Approach

In this study, the researcher used a mixed research approach; which includes both qualitative and quantitative research approaches. The use of this method is helpful to ensure that the data collected will effectively be interpreted and analysed using the descriptive statements. The mixed method approach uses both quantitative and qualitative approaches in tandem so that it is greater and helpful for the study than using either of the two and thus, it is beyond simply collecting and analysing quantitative and qualitative data of the study (Creswell, 2009).

3.3. Research Design

A research design presents the method and procedures which are used in gathering information required to answer the basic research questions or to test and proof the hypothesis. This study was used a sequential explanatory strategy which is a most popular strategy for mixed methods design. It is typically used to explain and interpret quantitative results by collecting and analysing follow-up qualitative data (Creswell, 2009). It is also useful when unexpected results arise from a quantitative study (Morse, 1991). The strategy gives more emphasis for the quantitative data, and then mixing the data collected result with the qualitative data collection. Thus, the researcher used this strategy to describe, explain, and interpret factors and improve the cause and effect of variables and provide more opportunity for the researcher to study new perspectives.

3.4. Operational Definitions and Measurements of Variables

In the case of conducting the quantitative study, and in order to make the study clear to all readers how groups of variables are defined and measured (Creswell, 2009). The operational definition and measurement of each variable in this study are provided below.

Dependent Variable

To measure the profitability of insurers the research used return on asset (ROA) as a proxy, which reflects whether the company is profitable and/or efficient in its operation. So, it is an important financial performance indicator. The ROA of insurance companies can be measured as the ratio of earning after interest and tax to total asset of each firm over their respective years.

Independent Variables

Investment in Government Bond

Investment in government refers to investment which insurance companies made in government bonds. It is measured as the natural logarithm of total investment in government bond. There is no formal market for government bonds. The last years insurance companies directly involved on the investment of government bonds, especially on the great Ethiopian dam, Abay.

Investment in Properties

Investment in properties are a measure of capital spending. Any type of investments which have tangible natures within the specific period of time, such as building, capital assets, equipments, etc. that are owned for a long period of time is referred to as investment in properties. It is measured as the natural logarithm of total property's investment less depreciation.

Investment in Shares

It refers to investment in other company shares or stocks. Investment Shares means any shares that were acquired by an investor company in connection with its investment in the Company pursuant to the equity Contribution and subscription agreement. It is the natural logarithm of total investment in shares of insurers.

Control Variables

Age

Age of insurance companies is measured as the number of years from the date of their establishment.

Insurance Size

Company size measures by the total asset of firms. In most studies, company size was computed as decimal logarithm of total assets of the insurance company (Shui, 2014). In this study, the size of insurance companies is measured as the natural logarithm of total asset of each firm for the respective years.

Liquidity Ratio

Liquidity refers to the ability of the insurance company to fulfil their current obligation with current assets. In other words, it refers to the ability of an asset or instrument to be purchased immediately in the economy without altering its price. The current asset-to-current-liability ratio was used to assess the situation.

3.5. Type and Sources of Data

In this study, the researcher was used mixed, quantitative model, which is numerical panel data. The study provides reliable and practical evidence to verify a significant effect of the different types of investment and overall profitability of insurers in Ethiopia. According to Baltagi (2008), there are many benefits of using panel data such as controlling for individual heterogeneity, more degrees of freedom, and eliminating biases resulting from aggregation over firms or individuals.

The researcher gathered information from primary data through interview and secondary source of data from National Bank of Ethiopia and both are qualitative and quantitative types of data. Accordingly, an unstructured, in-depth face-to-face open-ended interview question was prepared. The interview is conducting for top-level management of the 11 selected insurance companies and the responses provide by the interviewees are manually recorded by the researcher. The advantage of using this interview in the study is due to the fact that it is adaptable to ask for details as to why they believed, felt or responded in a particular way. In addition, it is a useful tool to get the informants' deep-rooted knowledge on the problem studied.

The secondary data which was used in this study include ten years annual reports of eleven insurance companies from the National Bank of Ethiopia (NBE).

3.6. Sampling Techniques

The study population is included all insurance companies in Ethiopia, Addis Ababa. According to National Bank of Ethiopia (NBE) report, there are 17 insurance companies in the year 2019/20 but for the study purpose, 11 insurance companies from the industry where the financial statements required for the most recent 10 years was selected using purposive sampling technique. The non-probability sampling technique, namely, purposive sampling, is selected because random sampling was not appropriate for the study. Therefore, the matrix for the frame and the nature of panel data enables an increase in the number of observations as the data are available across firms and over time (10*11=110). Primary data collected by conduct an in-depth interview in unstructured, open-ended face-to-face interview questions for top-level management of the selected 11 sample insurance companies. Unstructured face to face interview has been used because of its flexibility and also allowing new questions to be brought up during the interview. Accordingly, purposive sampling method of the non-random sampling technique was employed to select the interviewees based on the knowledge they have in the study area. Additionally, the employed sampling units have similar characteristics in terms of the geographically, governance structure and regulatory adherence, and regional base, which enable ecological validity for the given industry to hold and support the generalization of the finding of the study to the population.

3.7. Data Collection Method

The researcher gathered both qualitative and quantitative types of data. In order to know the reason why the independent variables positively or negatively affect or do not affect financial performance of insurance companies, qualitative data was collected through interview for top-level management of the selected insurance companies. This method of data collection used the quantitative information that was used in this study include 10 years annual reports, which are included debt, equity, and total asset balances of 11 selected insurance companies from year 2011 to year 2020 periods receive from the National Bank of Ethiopia (NBE). Additionally, secondary data also gathered from individual sampled insurance companies were missing values were fill, in order to increase the quality of the data.

3.8. Data Analysis Method

The data analysis technique of the study use sequentially both quantitative and qualitative method, hence it follows a two-pronged approach. The study identifies and measures the effect of different types of investment on the financial performance of Ethiopian insurance companies measured in ROA. To test the hypothesis, the study begins with the quantitative approach initially to collect and analyse secondary data in order to generalize results to population. The financial statements of all selected insurance companies are collected and summarized in an excel database containing the variables identified and exported to a statistical software package known as STATA 13. Multivariate panel data regression analyses is carry out to test the hypothesis to find which independent variables(s) individually or collectively are provided a meaningful contribution towards the explanation of the independent variables. Most literatures support panel data is more preferable and advantageous for the study than time-series or cross-sectional because it can control for individual heterogeneity and there is a less degree of multi-linearity between variables (Altunbas et al., 2001). In the second phase on a qualitative approach using in-depth interview of key informants to collect and analyse thematically from the view of participants and descriptively analyse the reason of the result obtained from the quantitative data analysis of different types of investment on insurance companies. Therefore, in this study the sequential type of mixed strategy with much higher weight is given to quantitative approach supported by the qualitative approach.

3.9. Validity and Reliability Test

In order to check the validity of data collected, and the instruments used, professional opinion sought from seniors, researchers and peers on face, content and format of the interview. Consultations with these people help the researcher to identify errors and offer the opportunity to modify and improve the instrument. Also, to determine the validity and reliability of the research instrument, a survey study is done in other insurance companies that were not selected for the study.

To determine whether the assumptions of the classical linear regression model (CLRM) is valid or not in the model diagnostic tests are performed. Consequently, the basic CLRM assumptions test in this research are errors have zero mean, homoscedasticity, autocorrelation, normality, multicollinearity and model specification.

The first assumption is errors have zero mean. According to Brooks (2008), if the regression equation exclude the constant term, the assumption will violated. Accordingly, the study holds this assumption as provided in section 4.4.2.

Heteroskedasticity becomes the second assumption under investigation. One of the basic assumptions for the ordinary least squares regression is the homogeneity of variance of the residuals. According to Guajarati, (2004) the assumption of heteroskedasticity holds if the variance of the errors is not constant. To investigate the existence heteroskedasticity the Breusch-pagan/ Cook- Westerberg test was used.

Under third assumption Wooldydridge test autocorrelation table is advised and employed to test the existence of autocorrelation. The autocorrelation principle suggests that the correlations of error terms across time is zero, implying that the errors are uncorrelated.

The fourth assumption is Normality of the error distribution that assumed the errors of estimation (differences between the actual and estimated dependent variable scores) are normally distributed. Violation of this assumption can be detected by constructing a kernel density estimate graph of the residuals with a normal distribution. In verifying that the residuals are normally distributed, the kernel density estimate with the normal option displays a density graph of the residuals with an normal distribution superimposed on the graph.

The last assumption is multicollinearity which means to the condition in which the explanatory variables are strongly related. The study used the variance inflation factor (VIF) test to check for multicollinearity.

3.10. Regression Equation

The research analyses the effect of the different types of investments on the financial performance of insurance companies by employing panel regression method. Thus, based on the findings presented in table 4.7, the following linear regression equation model was developed.

$$\mathbf{ROA_{it} = \beta 0 + \beta_1 IRP_{it} + \beta_2 IGB_{it} + \beta_3 ISHR_{it} + \beta_4 AGE_{it} + \beta_5 IS_{it} + \beta_6 LR_{it} + \varepsilon}$$

Where

ROA= Return on Asset;

IPR= Investment in Properties

IGB= Investment in Government Bond

ISHR= Investment in Shares

AGE= Age of Insurances

IS= Insurance Size

LR= Liquidity Ratio

ϵ = The Error Component for firm i at time t assumed to have zero mean E $\{\varepsilon_{it}\}= 0$

β_0= Constant

β= 1, 2, 3, 4,…6 are estimated parameters

i= Insurance company, i= 1, 2, 3,…, 11

t= time period, t= 1, 2, …, 10

CHAPTER FOUR
DATA ANALYSIS AND PRESENTATION

4.1. Introduction

This chapter presents the data analysis and results. The result of descriptive statistics, correlation analysis, the test assumption and result of the regression analysis are presented in this chapter.

4.2. Descriptive Statistics

The descriptive statistics for the variables of selected eleven insurance companies for ten years (2011 - 2020) with a total observation of 110 are showed in Table 4.1 below.

Table 4.1. Descriptive Statistics of Dependent and Independent Variables

	ROA	IPR	IGB	IS	ISHR	LR	AGE
Mean	0.091091	7.482152	3.541685	8.786687	5.196977	1.058083	14.72727
Maximum	0.393986	8.475040	8.210781	10.07986	8.210781	1.631958	36.00000
Minimum	-0.47016	0.000000	0.000000	7.820000	0.000000	0.262554	2.000000
Std. Dev.	0.053866	1.209473	3.424441	0.423148	3.52882	0.225530	8.471116
Observation	110	110	110	110	110	110	110

Source:- Using Stata-13

As showed in the table above, the financial performance or return on asset of Ethiopian insurance companies have achieved a mean of positive before tax profit of birr 9.11 over the last ten years. From the total sample, the mean, the maximum and the minimum values of ROA was 9.11%, 39.39%, and -4.70% respectively. The maximum value indicated Nile, Oromia and United insurance companies and the minimum value indicating African insurance company. That means the most profitable insurance among the sampled earned 39.39 cents of profit before tax for each birr investment in the asset of the firm. On the other hand, not profitable insurers of the sampled incurred a loss of birr 4.70 of the profit before tax for each birr investment in the asset of the firm. Respect to the standard deviation, it implies that the return on asset vary from its mean in right and left side by 5.38%. This shows low variation from the mean.

Table 4.1 above show the mean value of the control variable liquidity ratio was 105.80% and maximum and the minimum value of 163.19% and 26.25% respectively. The average value 1.058 indicated that for each birr current liability there was birr 1.058 current asset to meet their immediate obligation. Regarding the standard deviation of 22.55%, it shows that liquidity ratio vary from its mean in the right and left side by this amount. This implies a low variation from the mean.

Table 4.1 above show the mean of the natural logarithm of total shares investment was 5.19 with the standard deviation of 3.52. This indicated that Shares investment of insurance companies was dispersed from its mean value. The max. and the min. Value were 8.21 and 0.00 respectively.

Table 4.1 above show the mean of the natural logarithm of total bond investment was 3.54 with the standard deviation of 3.42. Bond investment of insurance companies was dispersed from its mean value. In addition to that the max. and min. Values were 8.21 and 0.00 respectively.

Table 4.1 above show the mean value of the investment in property was 0.09. The value of standard deviation was 1.20, this shows investment in property vary from its mean. In addition to that the max. and min. values were 8.47 and 0.00 respectively.

Table 4.1 above show the mean value of total asset was 8.78 with a standard deviation of 0.42. This implies total asset of insurance companies was vary from its mean. In addition to that the max. and min. values were 10.07 and 7.82 respectively.

Table 4.1 above show the mean value of the age of insurance company from the date of establishment was 14.7 years and the max. And min. values were 36 and 2 years respectively. In addition to that the standard deviation of the age of insurance companies was 8.4 years.

4.3. Correlation Analysis

The degree of correlation between the variables depend on the correlation coefficient, which should ranges between positive one and negative one. This range indicates the occurrence of a perfectly positive and perfectly negative correlation between those variables respectively. Therefore, it is the measurement level of correlation between variables. However, there is no correlation among the variable if zero value computed for the coefficient (Brooks, 2008). Table 4.2 below more illustrated the above idea.

Table 4.2. Correlation Matrix

	ROA	IPR	IGB	IS	ISHR	LR	AGE
ROA	1.000000						
IPR	0.0752	1.000000					
IGB	0.1459	0.1696	1.000000				
IS	0.2172	0.0437	0.2808	1.000000			
ISHR	0.3049	0.2422	0.1054	-0.3688	1.000000		
LR	0.2190	-0.2738	0.0838	0.0686	-0.4188	1.000000	
AGE	0.4051	0.3026	0.2242	0.5195	0.0188	-0.0615	1.000000

Source:- Using Stata-13

Table 4.2. Shows that property investment, bond investment, investment in shares, age of insurance, liquidity ratio and insurance size showed a positive correlation with the profitability, ROA. This implies that an increase in each type of investments would result in an increase in performance of Ethiopian insurance companies. The correlation matrix above shows that there is no independent variable in the model is highly correlated, weakly correlated, one key assumption of multiple linear regression. When two independent variables are highly correlated, this result in a problem of multicollinearity. Therefore, there is no multicollinearity problem in the model of this study.

4.4. Regression Model Tests

For validated hypothesis and reliability test of the regression results, the test of assumption as well as section of regression model are required. In order to attain this target the research has conducted the least principal model tests including Normality, Multicollinearity, Autocorrelation, heteroskedasticity and model specification taken in the study.

4.4.1 Model Selection (Random Effect versus Fixed Effect Models)

The selection of the appropriate model falls on the choice between the two categories of panel data estimator approaches: random and fixed effect (Brooks, 2008). Therefore, to select the model the study used the most known test, Hausman test. Hence, the model selection hypothesis was conducted below;

Null hypothesis: random effect is appropriate

Alternative hypothesis: fixed effect is appropriate

Level of significant= 5% (0.05)

The decision rule of the above test was reject the null hypothesis if the probability value of the test is less than 0.05 while accept if it is greater than 0.05.

Table 4.3. Model Selection- Hausman Test

```
. hausman fe re

                ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |       fe           re         Difference          S.E.
-------------+------------------------------------------------------------
         IPR |   -.0018656    -.0021538        .0002882        .0019582
         IGB |    .0003255     .0001233        .0002022         .000382
          IS |    .0443124     .0326639        .0116486        .0101256
        ISHR |     .009402     .0090956        .0003064        .0006586
          LR |    .0924688     .1077329       -.0152642        .0218888
------------------------------------------------------------------------------
                           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(5) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =        2.24
                Prob>chi2 =      0.8148
```

Source:- Using Stata-13

Based on the above table the probability value of the test is 0.8148. Therefore, the null hypothesis is accepted and the research used the random effect model.

4.4.2. Tests for the Classical Linear Regression Model (CLRM) assumptions

Testing the classical linear regression model assumption includes error of zero mean, normality, multicollinearity, autocorrelation and model specification are the first stages before exploit further on the econometric measurement data. The research used ordinary least square even if it had ideal properties and additionally testing hypothesis concerning the estimated coefficient may want to validly conduit (Brooks, 2008).

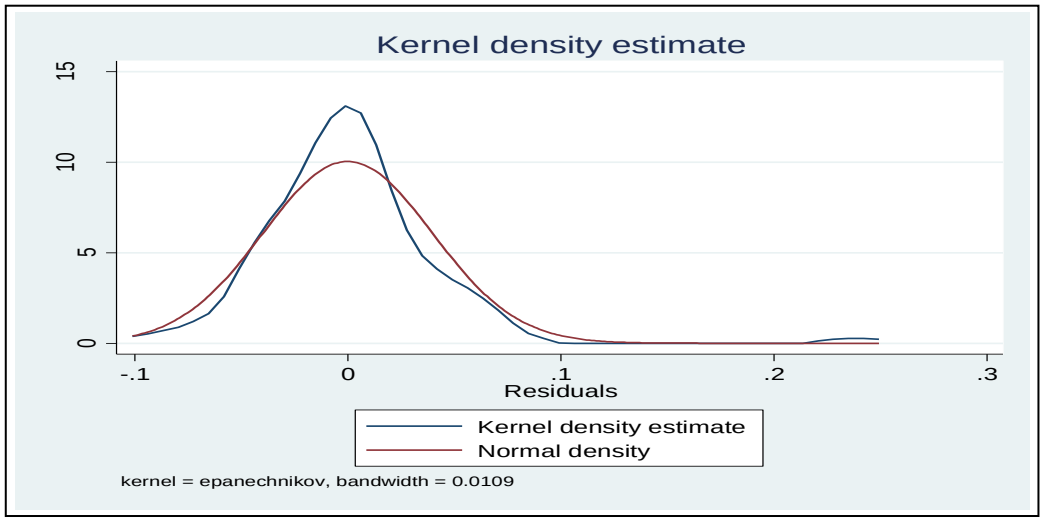
I. The Errors have Zero Mean (E(Ut)= 0)

The first assumption is errors have zero mean. According to Brooks (2008), if the regression equation exclude the constant term, the assumption will violated. Accordingly, the study holds this assumption hence a constant term was included in this research.

II. Normality Test

In verifying that the residuals are normally distributed, which is a very important assumption for regression, the kernel density estimate with the normal option displays a density graph of the residuals with a normal distribution superimposed on the graph.

Fig 4.1. Normality Test Result of the Study



Source:- Annual report of sample insurance companies computed using Stata-13

The bandwidth of the kernel is a free parameter which exhibits a strong influence on the resulting estimate. The above diagram witnesses that the red curve is the true density (a normal density with mean 0 and variance 1). In comparison, Kernel density estimate, grey curve, normality assumption holds with a epanechnikov, bandwidth of 0.0109 because its density estimate is close to the true density.

III. Test for Autocorrelation Assumption (cov(ui, uj) = 0 for i ≠ j

According to Brooks (2008), in this assumption to test whether autocorrelation problem existed or not in the model, the covariance between the cross sectional panel data of 11 insurance

companies and the error term could be zero. The research conducted Wooldridge test for the presence of autocorrelation.

Null Hypothesis: The model has no autocorrelation problem

Alternative Hypothesis: The model has an autocorrelation problem

Significant level= 5%(0.05)

Therefore, the decision is rejected the null hypothesis if the probability value of the test is less than the significance level. Otherwise, the test accept the null hypothesis.

Table 4.4. Test for Autocorrelation

```
Wooldridge test for autocorrelation in panel data
H0: no first order autocorrelation
    F(  1,      10) =      0.810
           Prob > F =      0.3892
```

Source: - Using Stata-13

According to the table above because the probability values, 0.3892, are significantly higher than the 0.05 significance level, the null hypothesis of no autocorrelation should be accepted. Hence, the null hypothesis of no autocorrelation was not rejected, according to the test's findings. Therefore, the study conclude that autocorrelation was not the problem of the model.

IV. Test for Multicollinearity

Multiple regressions are concerned with multicollinearity, not because it exists, but because of its degree. When there is a high degree of multicollinearity, the estimated variables in the correlation matrix become unstable, and the error term for the parameters might become drastically exaggerated or largely inflated. To test for multicollinearity, the researcher employed the variance inflation factor (VIF) test.

Table 4.5. Multicollinearity Test, VIF

```
. vif

    Variable |       VIF       1/VIF
-------------+----------------------
          IS |      1.80    0.556182
         AGE |      1.60    0.625168
        ISHR |      1.56    0.642933
          LR |      1.27    0.786534
         IPR |      1.23    0.813196
         IGB |      1.12    0.891456
-------------+----------------------
    Mean VIF |      1.43
```

Source:- Using Stata-13

If the variance inflation factor value of a variable is larger than ten, it may be worthwhile to look into further. To determine the degree of collinearity, tolerance of VIF is utilized. The above table depicts this. All of the variables have a variance inflation factor value of less than ten, indicating that multicollinearity is not an issue in this research.

V. Heteroskedasticity Assumption Test

According to Brooks, (2008), if the variance of the errors to be constant this assumption hold, but the assumption has been violated if the error do not have a constant variance, which is known as heteroscedasticity. In this study Breusch-Pagan/Cook-Weisberg test was employed to check for the existence of heteroscedasticity over a wide variety of independent factors under investigation.

H_0: Error has constant variance

H_1: Error has no constant variance

Significance level= 5% (0.05)

Therefore, the decision is reject the null hypothesis if the probability value of the test is less than the significance level. Otherwise, the test accept the null hypothesis.

Table 4.6. The Breusch-Pagan/Cook-Weisberg Heteroscedasticity Test

```
. hettest

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

         chi2(1)      =    20.07
         Prob > chi2  =   0.0000
```

Source: - Using Stata- 13

The Breusch-Pagan/Cook-Weisberg test for this study has a Chi-square (1) = 20.07 with p-value of 0.0000 for the regression models, which is less than 0.05. Therefore, in this situation the studies do not accept the null hypothesis, Ho and conclude the problem of Heteroskedasticity in the model. Hence, the problem of heteroskedasticity occurred in the study, to address this and in order to solve the difficulty of heteroskedasticity vce robust regression was employed (El-Melegy and Moumen, 2014).

IV. Model Specification

When one or more relevant variables are excluded from the model, or one or more unrelated variables are included in the model, a model specification mistake occurs. Detecting specification flaws can be done in a variety of ways. The researcher utilised the Ramsay RESET test, which uses the weights of the predicted values of the explanatory variables, among all econometric regression model of specification error tests (RESET) for unobserved independent variables. The study formulated the following hypothesis for the model:

Null hypothesis: No omitted variables in the model

Alternative hypothesis: the model has omitted variables

Therefore, the decision was rejected the null hypothesis if the probability value of the test is less than the significance level. Otherwise, the test accept the null hypothesis.

Table 4.7. Ramsey Model Specification Test

```
.  ovtest

Ramsey RESET test using powers of the fitted values of ROA
       Ho:  model has no omitted variables
                 F(3, 100) =      0.66
                  Prob > F =      0.5798
```

Source: - Using Stata-13

Based on the table above, the regression analysis has a probability value of 0.5798 in the Ramsay model selection test for this investigation. As a result, the null hypothesis, that the model contains no omitted variables, was accepted. Therefore, the model was excellent, with no missing variables that influenced the dependent variable (return on asset) are excluded in the model.

4.5. Regression Analysis

The data-based findings from the econometric model on the effect of different types of investments on the overall profitability of insurers in Ethiopia are presented in this part.

4.5.1. Regression Analysis Between Dependent and Independent Variables

The following model was constructed to investigate the effects of the different types of investments on financial performance of insurance companies in Ethiopia based on the model summary in Table 4.6.

$$\mathbf{ROAit = -0.3698 - 0.0021RP + 0.0001IGB + 0.0327IS + 0.0091ISHR + 0.1077LR + 0.0019AGE + \varepsilon}$$

This part of the research focuses into the data analyses for each determinant as well as the impact of various types of investments on the overall profitability of Ethiopian insurers. In addition, the section examined the study results in light of past empirical evidence. As a result, the next sections address how to evaluate the random effects model regression results.

Table 4.8. Regression Results of the Study

```
. xtreg ROA IPR IGB IS ISHR LR AGE,  re

Random-effects GLS regression                   Number of obs      =       110
Group variable: Firm                            Number of groups   =        11

R-sq:  within  = 0.2845                         Obs per group: min =        10
       between = 0.8485                                        avg =      10.0
       overall = 0.4557                                        max =        10

                                                Wald chi2(6)       =     77.50
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000

------------------------------------------------------------------------------
         ROA |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         IPR |  -.0021538   .0036525    -0.59   0.555    -.0093127     .005005
         IGB |   .0001233   .0012121     0.10   0.919    -.0022523    .0024989
          IS |   .0326639   .0128472     2.54   0.011     .0074838    .0578439
        ISHR |   .0090956   .0013944     6.52   0.000     .0063626    .0118287
          LR |   .1077329   .0206392     5.22   0.000     .0672809     .148185
         AGE |   .0019184   .0006347     3.02   0.003     .0006743    .0031625
       _cons |  -.3697505   .1206729    -3.06   0.002     -.606265   -.1332361
-------------+----------------------------------------------------------------
     sigma_u |   .00658197
     sigma_e |   .04077024
         rho |   .02540101   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Source:- Using Stata-13

The R-squared result tells how well the regression analysis describes the dependent variable's actually deviations (Brooks, 2008). The model's aggregate R-squared score is 45.57 percent, implying that the factors in the model explained 46 percent of the variability in insurers' profitability in Ethiopia. As a result, such factors, taken together, are moderately fit explanatory variables for determining the impact of investments on insurer profitability in Ethiopia (Muijs, 2004).

R squared is not highly helpful in panel data analysis, according to various studies. Rather than it, focus on particular variables significance and overall model significance in panel data analysis. In general, cross sectional data has a lower R squared than time series data. It is not very high with panel data due to the variability of cross sections. R squared can be bigger while the dataset is more time dominating. In general, the magnitude of R squared increases when more relevant explanatory factors are included. However, the purpose of this study should be on the study objectives that must be met from the start of particular and general model significant, ensuring that there is no model specification bias and misleading regressions are avoided. Another thing to keep in mind is that a higher R squared in the presence of few meaningful t-values implies that the regression is multicollinearity and misleading.

The test statistic's probability value of zero and the regression F statistic (77.50) indicates that all independent variables in the model influence our dependent variables, return on asset jointly.

Besides, four (67%) of the independent variables, namely, IS, ISHR, LR and AGE are statistically significant at 5% level of significant. The individual variables significance is more than the 50% criterion provided by Zellner et al.(2001).

The beta value for IGB in this analysis is 0.0001233, indicating that insurers' investment in government bond have a positive association on return on asset, although the association is insignificant at the 95% confidence interval. In addition, the IPR value is -0.0021538, indicating that property investment has a negative and insignificant relationship on return on asset at the 95% confidence interval and share investment and age of insurance companies with coefficient of 0.0090956 and 0.0019184 respectively had positive and significant relation with the dependent variable (ROA) at 5% level of significant. Finally, the two control variable of the model, insurance size and liquidity ratio with coefficient of 0.0326639 and 0.1077329 had positive and significant relation with ROA at 5% level of significant respectively.

4.5.2. Discussion of Regression Analysis Result

The analysis outcome in Table 4.6 above certainly illustrates that the dependent and independent variables, as well as the control variables of ISHR, IS, LR, and AGE of insurance companies with ROA, which are included in the proposed research model, have a strong and significant association. The relationship between each independent variables and the return on asset is described in detail here.

Investment in Properties

H1: Investment in Properties has a positive and significant effect on the overall profitability of insurers.

Based on Table 4.8 above, investment in properties (IPR) has negative but statistically insignificant effect on ROA. As a result, the finding does not in line with the research hypothesis that properties investment has positive and significant effect on return on asset of insurers in Ethiopia. This is consistent with previous research of Bernabas (2018) that investment in property has insignificant effect on return on asset. However, it contrasted with the results of Binyam (2018), Veronica (2015), Tsion, (2018), Olatunji et al. (2014) and Khresiat (2019) who concluded that there is a positive and significant relationship between financial performance and investment in properties.

According to the data collected through interview from the sampled insurance companies taken in this study that investment in properties has negative effect on their financial performance (ROA). The basic reason for that the directive of National Bank of Ethiopia (NBE directive No. SBB/25/2004) restricts the insurers not to invest more than 10% of their assets on properties like acquisition of building and real estate and the return from such investment not more than 3% on average because of the location of the investment area. But lesser of the restriction of this directive to purchase a long term assets for their company office and investment in information technology help them to generate better return, average of 6% from rental activity because they are located in Addis Ababa.

Investment in Government Bond

H2: Investment in government bond has a positive and significant effect on the profitability of insurers

Table 4.8 above Showed that investment in government bond (IGB) has positive but statistically insignificant effect on ROA. Thus, it did not support the working hypothesis that investment in government bond has a positive and statistically significant impact on the overall profitability of insurers. The result is in agreement with the findings of Mariam (2013), Njiiri (2013), Nyora (2015), Ezekiel (2008), and Kipleting and Bokongo (2016) who found a positive significant relationship and that of Veronica (2015) who found a negative significant relationship between ROA and investment in government bond.

According to the data collected through interview from the sampled insurance companies taken in this study that bond investment has a positive effect on their overall profitability (ROA). According to the interviewees the main reason for the positive effect indicates that investment in government security like Bonds are considered to be significant investments compared to the other asset classes given that the probability of a government running out of money and defaulting on its interest payments are very low due to the fact it is able to print more money or borrow more. In addition to that even if there is no an incremental in its interest rate and has a lower return compare to other types of investment, the insurers invest on government bond for fulfilling social responsibility.

Age of Insurances

H3: Age has a positive and statistically significant effect on performance of insurance companies.

Based on the regression analysis result in Table 4.8 above age of insurance companies (AGE) has statistically significant positive effect on ROA. Accordingly, the result support the working hypothesis that age of insurance has positive and statistically significant effect on the overall profitability of insurers in Ethiopia. The proxy used for the age in this study is same as used in recent studies on insurance sector (Bernabas, 2018; Ahmed et al., 2011; Al-Shami, 2008). Age of the firm has a direct relationship with firm's profitability. Moreover, the result of this study contradicted with Malik, (2011) and Mehari and Aemiro (2013) that there is no statistically significant relationship between profitability and age of the company and the result of Sambasivam and Ayele (2013) that ROA has an insignificant relationship with age.

The interview output show that age of the insurers had positive significant relation with their overall financial performance. The reason behind for this result mainly can be discussed as the higher or an increase in the age of the insurance company, the more efficient, flexible and not surprised change by the environment and make them to develop more knowledge, ability, and skill. These help them to enjoy the superior performance and not inclined to the liabilities of newness.

Investment in Shares

H4: Investment in shares has a positive and significant effect on overall profitability of insurers.

As a result of the regression analysis in Table 4.8 above, investment in shares (ISHR) has statistically significant positive effect on ROA. It indicates that if all other influential factors remain unchanged, a 1% increment in shares investment results to a 0.91 percent rise in the mean value of the index of return on asset. As a result, the finding result in agreement with the research hypothesis that investment in shares have positive and statistically significant impact on overall profitability of insurers in Ethiopia. Moreover,this finding in line with that of Carson

and Hoyt (2001), Kipleting and Bokongo (2016) and Boateng and Jones (2004) who found that the use of share investment is positively related to the financial performance of firms.

According to the data collected through interview from the sampled insurance companies taken in this study noted that investment in share has positive and significant effect on their financial performance (ROA). The main ground is that investments in shares after ward earn investment financial gain to them and in addition, the incremental of dividend per share of the invested insurance companies make them attainable for the insurers to invest more on shares and harvest collect capital gains there on. They mainly concentrate toward share investment because its return is more than any types of investment.

Insurance Size

H5: Insurance size has a positive and statistically significant effect on the overall profitability of insurers.

Based on the regression analysis result in Table 4.8 above, size of insurance (IS) has statistically significant positive effect on ROA. The above suggests that if other determinate factors remain constant, each increment of one percent in total asset raises the return on asset of Ethiopian insurance companies by 3.27 percent. As a result, the findings in agreement with the research hypothesis that insurance size has a positive and statistically significant impact on insurance companies' overall profitability, return on asset in Ethiopia. The proxy used for the size in this study is same as used in recent studies on insurance sectors Malik (2011), Sambasivam and Ayele (2013) and Mehari and Aemiro (2013). The results revealed that firm size has statistically significant to explain performance of insurance companies. However the study conducted by Chu et al., (2011) and Rao et al. (2013) were contradictory of this finding. They believed that as the size of the firm increases, the transaction cost, agency cost and organizational cost increase. Therefore, these costs at a certain point of time overpower the economies of scale and the firms' profitability begins to decline.

The interview result of this study show that the variable sizes of the insurers positively affect their overall profitability. Based on the data collected from the sampled insurance companies the major reasons for the positive relation between size and ROA is an increase in the total asset of the given companies. In general the interviewees explained that performance is probably to increase in size, due to the fact that it is obvious that insurance companies having huge amount of total asset, size commonly have extra ability for managing unfavourable and

destructive fluctuations of market and greater economies of scale in terms of the most common significant operational component of the companies for delivering their service, labor cost, complex information systems and expenses management.

Liquidity Ratio

H6: Liquidity ratio has a positive and statistically significant effect on the overall profitability of insurers.

Based on the regression analysis result in Table 4.8 above, liquidity ratio had statistically significant positive effect on ROA. This indicates that if all the remaining variable unchanged, each percent increment in total assets raises the liquidity ratio by one birr, therefore, it raises Ethiopian insurance companies profitability by 10.77%. As a result, the finding in agreement with the research hypothesis that liquidity ratio has positive and statistically significant effect on the overall profitability of insurers in Ethiopia. The proxy used for liquidity ratio in this study is same as used in recent studies on insurance sector Chen and Wong (2004) and Sambasivam and Ayele (2013). The results revealed that liquidity ratio explains the changes in performance of insurance companies. Moreover, the result of this study contradicted with that of Mehari and Aemiro (2013) and Adams and Buckle (2000). These studies revealed that liquidity ratio has no statistically significant relationship with the performance of insurers.

According to the interviewee's liquidity ratio has a positive and significant relation with return on asset. The major reason for their positive relation is that the insurance companies are committed to the directive of the NBE that insurance companies should keep 65% of allowed total asset to meet immediate commitment. In addition, in terms of the effects of liquidity on profitability, the interviewees highlighted that insurers must be liquid in order to settle current obligations, minimize their losses, and maintain a positive public image. These help them to become sound and to collect more premiums from customers and results increase in profitability of the insurers.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION, AND RECOMMENDATIONS

5.1. Introduction

This chapter in general organized and classified in to three subsections: summary of findings, conclusion and possible recommendations based on the findings of the preceding chapters.

5.2. Summary of Findings

The Primary objective of this research is to investigate the impact of the different types of investments on the overall profitability of insurers in Ethiopia. The study used eleven (11) sampled selected insurance companies in Ethiopia, which have a recent ten (10) years audited report from 2011 to 2020. Regarding secondary data gathered from audited annual reports, the analysis used Ordinary Least Square to develop an unbalanced panel regression model, and a random effect model was used according to the Hausman test. The final outcome of the regression model revealed that different type of investments have an impact on insurer's overall financial success in Ethiopia. Return on asset was the dependent variable used to measure the overall profitability, and it had four determinants of ROA and two control variables. These are investment in government bond, age of insurance, investment in shares, investment in properties, and insurance size and liquidity ratio respectively under investigation in order to attain its objective. Therefore, from the regression result, investment in shares, insurance size, liquidity ratio and age of insurers, had positive and significant effect on ROA, and investment in government bond has positive but insignificant effect on Ethiopian insurers financial performance whereas, investment in Properties has negative and insignificant effect on Ethiopian insurance companies financial performance.

The result from the interview revealed that investment in shares, investment in government bond, age of insurance, insurance size, liquidity ratio have positive effect on ROA, whereas that of investment in properties negatively affect the profitability of insurance companies in Ethiopia.

5.3. Conclusions

The primary objective of this study was to investigate how and why the different types of investments affect the overall profitability of insurers in Ethiopia. Hence, the research concluded that:

- Investment in shares had positive as well as significant impact on the overall profitability of insurers in Ethiopia. This suggested that the higher an investment in shares boosts overall profitability of insurers of Ethiopia.

- Age of insurances has positive and statistically significant effect on return of asset. This direct relation indicates that an increase in age of insurances absolutely increase the overall performance of insurers in Ethiopia.

- Investment in properties has negative and statistically insignificant effect on return of asset. This implies the change in investment in properties has not statistically significantly effect on the overall financial performance of insurance companies.

- Investment in government bond has positive but statistically insignificant effect on the financial performance of insurance companies. The relation indicates that the higher investment in government bond result in the higher return on asset but, in an insignificant amount.

- Return on asset of insurance companies in Ethiopia positively and significantly affect by their size. This indicates that the larger the total asset of the insurance companies enjoyed them the higher significant performance through economies of scale.

- Liquidity ratio has positive and statistically significant relation with return on asset of insurance companies in Ethiopia. This indicates that both go in the same direction, and an increase in liquidity ratio leads to an increase on the financial performance of insurance companies in Ethiopia.

5.4. Recommendations

According to the findings, share investments have a considerable impact over insurance companies overall profitability. In order to produce higher risk-free profits, Ethiopian insurance companies need to invest more on shares.

In addition investments in properties affects the overall profitability of insurers negatively and insignificantly. This is because National Bank of Ethiopia rule prohibits insurance firms from investing in other firms' types of investment. As a result, the NBE must develop an investment policy on the resources allocation of insurers and allow an excess percentage to be invested in those other investments such as properties. Insurers should also efficiently manage, invest in, and use their properties effectively and productively in order to improve profitability and satisfy their stockholders.

Furthermore, the top level managers of insurance companies should seek to put a higher attention on firm-specific variables such as company size, age representing experience and liquidity ratio to enhance their financial Performance objectives.

Lastly, insurers in Ethiopia should evaluate their investment portfolio and search for further potential to promote their profitability while minimizing risk.

REFERENCES

Abate, G. (2012). *Determinants of insurance companies profitability in Ethiopia*. (Unpublished Master's thesis). Addis Ababa University, Addis Ababa, Ethiopia.

Admas, M., & Buckle, M. (2000). The Determinants of Operational Performance in Bermuda Insurance Market. *Applied financial economics*, 4 (13), 133-143.

Ahmed, N., et al. (2011). Determinants of Performance: A case of life insurance sector of Pakistan. *International Research Journal of Finance and Economics*, 61(1), 123-128.

Alchain, A.A. (1955). The rate of interest, Fisher's rate of return over costs and Keynes' internal rate of return. *The American economic Review*, 45 (5), 938-943.

Almajali, A, Y., Almaro S. A., & Al-Soub Y. Z. (2012) Factors Affecting the Financial Performance of Jordanian Insurance Companied Listed on Amman Stock Exchange. *Journal of management Research*, 4(2), 266.

Al-shami, H. A. A. (2008). *Determinants of Insurance Companies Profitability in UAE (Directoral dissertation)*. University of Utara, Kedah Darul Aman, Malaysia.

Altunbas, Y., Evans L., & Molyneux P. (2001). Bank ownership and efficiency. *Journal of money, credit and Banking*, 33 (4), 926-954.

Arif, A, & Showket, A. (2015). Relationship Between financial risk and financial performance: an insight of Indian insurance industry. *International journal of science and Research*, 4(1). 1424-1433.

Baddeley, A. (2003). Working memory and language: an overview. *Journal of communication disorders*, 36(3), 189-208.

Baltagi B.H (2008). *Econometric analysis of panel data*. (4th Ed). Chichester: John wiley & sons.

Biniyam, H. (2018). *The effect of investment on the financial performance of insurance companies in Ethiopia*. (Unpublished Master's Thesis). Addis Ababa University, Addis Ababa, Ethiopia.

Boateng, A. (2004). Determinants of capital structure: evidence from international Joint ventures in Ghana. *International journal of social economics*, 31(1/2), 56-66.

Brooks, C. (2008). *Introductory econometrics for finance.* (2nd ed). New York: Cambridge University press.

Burca, A. M, & Batrinca, G. (2014), The determinants of financial performance in the Romanian insurance market. *International journal of academic research in accounting, finance and management sciences*, 4(1), 299-308.

Carson, J. M., Hoyt, R. E., & Browne, M. J. (2001). Dynamic financial models of life insurers. *North American Actuarial journal,* 5(2), 11-26.

Cekrezi, A. (2015). Determinants of financial performance of the insurance companies: A case of Albania. *International journal of economics, commerce & management,* 3(4), 1-10.

Chen R. & Wong. K (2004). The determinants of financial health of Asian insurance companies. *Journal of risk and insurance,* 71 (3). 469-499.

Chong, C. W., Ahmed M. L., & Abdullah. M. Y. (1999). Performance of GARCH Models in forecasting stock market volatility. *Journal of forecasting,* 18 (5), 333-343.

Creswell, W. (2009). *Research design: quantitative, qualitative and mixed methods approaches.* (3rd ed). California: Age publications.

Daniel, M., & Tilahun, A. (2013). Firms factors that determine insurance company's in Ethiopia. *European scientific journal*, 9(10), 245-255.

Doumpos, M., Gagis, C., & Psiouras, F. (2012). Estimating and explaining the financial performance of property and causalty insurance: Two- stage analysis. *Business and economics Journals*, 5(2), 155-170.

El-Melegy, M. T. (2014). Model-wise and point-wise random sample consensus for robust regression and outlier detection. *Neural networks,* 59(3), 23-35.

Epps, R., & Cereola, S. J. (2008). Do institutional shareholders services corporate governance ratings reflect a company's operating performance? *Critical perspectives on Accounting*, 1(19), 1135-1148.

Eskedar, A. (2016). *The effect of investment on commercial banks in Ethiopia*. (unpublished Master's thesis). St Mary's University, Addis Ababa, Ethiopia.

Ezekeil, K (2008). *The impact of investment portfolio choice on financial performance of investment companies in Kenya.* (Unpublished Master's Thesis). University of Nairobi, Nairobi, Kenya.

Feisel, R. (2002). *Determinants of financial performance of insurance companies in Ethiopia.* (Unpublished Master's Thesis). Addis Ababa University, Addis Ababa, Ethiopia.

Fisher, G. H. (1960). A Survey of the Theory of Induced Investment, 1900-1940. *Southern Economic Journal*, 18, (4), 474-494.

Fisher, R. A. (1930). Inverse probability. *In Mathematical Proceedings of the Cambridge Philosophical Society*, 26(4), 528-535.

Florez -Lopez, R. (2007). Modelling of insurances rating determinants. An application of machine learning techniques and statistical models. *European journal of operational research*, 183 (3), 1488-1512.

Gujarat, N. (2004). *Basic econometric*. (4th ed). USA: McGraw-Hill.

Hadush, G. (2015). *Determinants of profitability on insurance companies in Ethiopia*. (Unpublished Master's Thesis). Addis Ababa University, Addis Ababa, Ethiopia.

Hailu, A. A., & Tassew, A. W. (2018). The impact of investment diversification on financial performance of commercial banks in Ethiopia. *Financial studies*, 22(3), 57-73.

Hajering I. (2018). The influence of investment decisions on financial performance and corporate value: funding decision of financial performance and corporate value; dividend policy on financial performance and corporate value; and financial performance of corporate value. *International journal of business and management invention*, 7(1), 63-71.

Harvey, C. (2012). Investment Income. Farlex Financial dictionary.

Hayek, F.V. (1941). The counter- revolution of science. *Economica*, 8(31), 281-320.

Ho C,, & Zhu D. (2004). Performance measurement of Taiwan commercial banks. *International journal of product performance management.* 53(5), 425-434.

Igbojekwe, A. (2006). Accounting of composite business and disclosure requirements A paper presented in NIA/NASB Insurance companies compliance workshop with NASB's. International monastery fund.

Ismailia, B. (2011). *Financial performance measurement of manufacturing small and medium enterprises in Pretoria: A multiple exploratory case study*. (unpublished master's thesis). University of south Africa, Johannesburg. South Africa.

Joseph, O., Frank, G., & Lordina, A. (2013). The financial performance of life insurance companies in Ghana. *Journal of banking and finance*, 18, 43-72.

Khresiat, O. M. (2019). Impact of investment decisions on the profits of Jordanian insurance companies listed on the Ammam stock exchange. *Academy of accounting and financial studies journal*, 23(5), 1-12.

Kipleting, M. (2016). Effect of investment diversification on the financial performance of commercial banks in Kenya. *IOSR journal of business and management*, 18(11), 102-115.

Kristina, L. (2010). *Investment analysis and Portfolio management.* (Life long learning programme). University of Magnus, Kaunas, Lithuania.

Kunreuther, H. (2010). Performance measurement. *Retrieved from 14th February, 2021 www.world finance. Com/encyclopedia/article1500.html.*

Kwon, K. (2019). The long-term effect of training and development investment on financial performance in Korean companies. *International journal of manpower*, 40(6), 1092-1109.

Liargovas, P. G., & Skandalis, K. S. (2010). Factors affecting firm's performance: the case of Greece. *Global business & management research: international Journal,* 2(2), 184-197.

Loof, H., & Heshmat, A. (2008). Investment and performance of firms: correlation or causality? *Corporate ownership & control,* 6(2), 268-282.

Lynch, R. L., & Cross K. F. (1991). *Measure up!: the essential guide to measuring business performance,* Mandarin.

Maingi, J. (2018). *Defects of investment strategies on financial performance of private equity funds investing in Kenya*. (Unpublished Master's Thesis). Kenya University, Nairobi, Kenya.

Malik, H. (2011). Determinants of insurance companies profitability: an analysis of insurance sector of Pakistan. *Academic research international,* 1(3), 315-321.

Mariam, A. (2013). *The relationship among portfolio holding and financial performance of insurance companies in Kenya.* (Unpublished Master's Thesis). Kenya University, Nairobi, Kenya.

Mathew, K., Rop, Y., & Jared, B. (2016). Effect of investment diversification on the financial performance of commercial banks in Kenya. *Journal of business and management,* 11(1), 102-115.

Meaza, M. (2014). *Determinants of profitability of insurance companies in Ethiopia*. (Unpublished Master's Thesis). Addis Ababa University, Addis Ababa, Ethiopia.

Mehari, D, & Aemiro, T. (2013). Firm specific factors that determine insurance companies performance in Ethiopia. *European scientific journal,* 9(10), 245-255.

Muijs, D. (2004). Introduction to quantitative research. *Doing quantitative research in education with SPSS,* 15(2), 1-12.

Muya, T., & Gathogo, G. (2016). Effect of working capital ,management on the profitability of manufacturing firms in Nakuru Town, Kenya. *International journal of economics, commerce and management,* 1(4), 1082-1105.

Mwangi, M., & Murigu, J. (2015). The determinants of financial performance in General insurance companies in Kenya. *European scientific journal,* 11(1), 196-199.

National Bank of Ethiopia, (2004). *Directive of insurance companies of investment (SIB/25/2004),* Addis Ababa, Ethiopia.

Nijiiri, V. (2013). The relationship between investment and financial performance of insurance companies in Kenya. (Unpublished Master's Thesis). Nairobi University, Nairobi, Kenya.

Nireshm A., & Velnompy. (2014). Firm size and profitability: A study of listed manufacturing firms in Sri Lanks. *International journal of business and management,* 9(4), 1-8.

Nyora, M. (2015). *Relationship between portfolio holding and financial performance of insurance companies in Nairobi country.* (Doctoral dissertation). University of Nairobi, Nairobi, Kenya.

Oloko, M., Anene, E. B., Kiara, P. G., & Kathambi, I. (2014). Empirical Analysis on determinants of Non-profitability margins: A case of Telkom Kenya in the telecommunications industry. *International journal of scientific and research publications,* 4(3), 1-4.

Omondi, M. M., & Muturi, W. (2013). Factors affecting the financial performance of listed companies at the Nairobi securities exchange in Kenya. *Research journal of finance and accounting,* 4(15), 99-104.

Oolatuni, T., et.al. (2014). Investment in fixed assets and firm profitability: empirical evidence from the Nigerian banking sector. *Asian journal of social sciences and management studies,* 1(3), 78-82.

Ostroff, C., & Schmitt, N. (1993). Configuration of organizational effectiveness and efficiency. *Academic of management journal,* 36(6), 1345-1361.

Pervan, M., & Visic, J. (2012). Influence of firm size on its business success. *Creation operational research review,* 3(1), 213-223.

Pottier, S. W., & Sommer, D.W. (1999). Prosperity-liability insurer financial strength ratings: differences across rating agencies. *Journal of risk & insurance,* 66(4), 621-642.

Rao, D.T. (1998). Operational efficiency of life insurance corporation of India. *Journal of Indian school of political economy*, 10 (3), 2174-2181.

Salim, M. N., & Santosyah, M. R. (2019). Financial performance of the manufacturing sector consumptive Goods sub-sector in Indonesia. *International journal of engineering technologies and management research*, 6(8), 106-121.

Sambasivam, Y. M., & Ayele, A. G. (2013). A study on the performance of insurance companies in Ethiopia. *International journal of marketing financial services & management research*, 2(7), 138-150.

Shiu, Y. (2004). Determinants of United Kingdom General Insurance Company Performance.

Stierwald, A. (2010). *The cause of profit heterogeneity in large Australian firms working paper*, Melbourne Institute of A Supplied economic and social research, university of Melbourne, Melbourne.

Suheyli, R. (2015). *Determinants of profitability on insurance companies in Ethiopia.* (Unpublished Master's Thesis). Addis Ababa University, Addis Ababa, Ethiopia.

Tsion, A. (2018). *The effect of investment on the financial performance of insurance companies in Ethiopia.* (Unpublished Master's Thesis). St. Mary University, Addis Ababa, Ethiopia.

Veronica, N. (2015). *The relationship between investment and financial performance of insurance companies in Kenya.* (Unpublished Master's Thesis). University of Nairobi, Nairobi, Kenya.

Weebly, S. (2013). Scope of investment management. Available at http:..imsmo.weebly .com/upload/1/5/7/15071506/investment management pdf accessed on 15/12/2020.

Yakob, R., Yusop, Z., Radam, A., & Ismail, N. (2012). Camel rating approach to assess the insurance operators financial strength. *Jurnal Ekonomi Malaysia*, 46(2), 3-15.

Yuvaraj, S, & Abate, G. (2013). The performance of insurance companies in Ethiopia. International journal of marketing, financial service and management research, 2(7), 138-150.

Zellner, A., Keuzenkamp, H. A., & McAleer, M. (2001). *Simplicity, inference and modelling: keeping it sophisticatedly simple.* (4th ed). Cambridge: Cambridge University Press.

Appendixes

Addis Ababa University

College of Business and Economic

Department of Accounting and Finance

Interview Questions

Dear Interview Participants,

First, I would like to say thank you so much for volunteering for this scheduled interview. I am a graduate student at Addis Ababa University College of Business and Economic Department of Accounting and Finance. The purpose of this interview is to collect information for undertaking study on **The Effect of the Different Types of Investments on the Financial Performance of Insurance Companies in Ethiopia**, in partial fulfillment of the requirements for the degree of Master of Science in Accounting and Finance. I, therefore, kindly request for your willingness to participate in this study and the related interview by honestly answering questions taking into account your wealth of experience. Your help to provide relevantly and quality data will be crucial for the completion of this study. I assure you that the information you provided us will be kept confidential and it will be solely used for academic purposes. A copy of the final report will be availed to you any time upon request. The interview will take a maximum of 30 minutes.

Thank you again for your precious time providing me, honest and prompt information.

Thank You!

Fahmi Shifferaw

Tel +251923-70-91-46, Email sfaminovich123@gmail.com

Interreview Questions

1. Why investments in properties negatively affect financial performance of your company?
2. Why investments in government bond positively affect financial performance of your company?
3. Why the age of insurance positively affect financial performance of your company?
4. Why investment in share positively affect financial performance of your company?
5. What types of measures are taken by your company in order to reduce the influence that affects profitability negatively?
6. Any idea or comment?

1. Regression Results

```
. sum ROA IPR IGB IS ISHR LR AGE
```

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	110	.0910912	.0538661	-.0470164	.393986
IPR	110	7.482152	1.209473	0	8.47504
IGB	110	3.541685	3.424441	0	8.210781
IS	110	8.786687	.4231479	7.82	10.07986
ISHR	110	5.196977	3.52882	0	8.472739
LR	110	1.058083	.2255303	.262554	1.631958
AGE	110	14.72727	8.471116	2	36

2. Correlation Analysis

```
. pwcorr ROA IPR IGB IS ISHR LR AGE, sig
```

	ROA	IPR	IGB	IS	ISHR	LR	AGE
ROA	1.0000						
IPR	0.0752	1.0000					
	0.4347						
IGB	0.1459	0.1696	1.0000				
	0.1284	0.0764					
IS	0.2172	0.0437	0.2308	1.0000			
	0.0226	0.6500	0.0153				
ISHR	0.3049	0.2422	0.1054	-0.3688	1.0000		
	0.0012	0.0108	0.2733	0.0001			
LR	0.2190	-0.2738	-0.0838	0.0686	-0.4188	1.0000	
	0.0215	0.0038	0.3839	0.4763	0.0000		
AGE	0.4051	0.3026	0.2242	0.5195	0.0181	-0.0615	1.0000
	0.0000	0.0013	0.0186	0.0000	0.8514	0.5234	

```
. corr ROA IPR IGB IS ISHR LR AGE
(obs=110)
```

	ROA	IPR	IGB	IS	ISHR	LR	AGE
ROA	1.0000						
IPR	0.0752	1.0000					
IGB	0.1459	0.1696	1.0000				
IS	0.2172	0.0437	0.2308	1.0000			
ISHR	0.3049	0.2422	0.1054	-0.3688	1.0000		
LR	0.2190	-0.2738	-0.0838	0.0686	-0.4188	1.0000	
AGE	0.4051	0.3026	0.2242	0.5195	0.0181	-0.0615	1.0000

3. Regression Model Selection, Hausman Test

```
. xtreg ROA IPR IGB IS ISHR LR AGE,  fe
note: AGE omitted because of collinearity

Fixed-effects (within) regression               Number of obs      =       110
Group variable: Firm                            Number of groups   =        11

R-sq:  within  = 0.2907                         Obs per group: min =        10
       between = 0.6339                                        avg =      10.0
       overall = 0.3875                                        max =        10

                                                F(5,94)            =      7.71
corr(u_i, Xb)  = 0.1809                         Prob > F           =    0.0000

------------------------------------------------------------------------------
         ROA |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         IPR |  -.0018656   .0041444    -0.45   0.654    -.0100943    .0063631
         IGB |   .0003255   .0012708     0.26   0.798    -.0021978    .0028488
          IS |   .0443124   .0163578     2.71   0.008     .0118336    .0767912
        ISHR |    .009402   .0015421     6.10   0.000     .0063401     .012464
          LR |   .0924688   .0300848     3.07   0.003     .0327347    .1522028
         AGE |          0  (omitted)
       _cons |  -.4321644   .1573212    -2.75   0.007    -.7445294   -.1197994
-------------+----------------------------------------------------------------
     sigma_u |  .01968076
     sigma_e |  .04077024
         rho |  .18898451   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(10, 94) =     2.09                 Prob > F = 0.0328

. estimates store fe
. xtreg ROA IPR IGB IS ISHR LR AGE,  re

Random-effects GLS regression                   Number of obs      =       110
Group variable: Firm                            Number of groups   =        11

R-sq:  within  = 0.2845                         Obs per group: min =        10
       between = 0.8485                                        avg =      10.0
       overall = 0.4557                                        max =        10

                                                Wald chi2(6)       =     77.50
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000

------------------------------------------------------------------------------
         ROA |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         IPR |  -.0021538   .0036525    -0.59   0.555    -.0093127     .005005
         IGB |   .0001233   .0012121     0.10   0.919    -.0022523    .0024989
          IS |   .0326639   .0128472     2.54   0.011     .0074838    .0578439
        ISHR |   .0090956   .0013944     6.52   0.000     .0063626    .0118287
          LR |   .1077329   .0206392     5.22   0.000     .0672809     .148185
         AGE |   .0019184   .0006347     3.02   0.003     .0006743    .0031625
       _cons |  -.3697505   .1206729    -3.06   0.002     -.606265   -.1332361
-------------+----------------------------------------------------------------
     sigma_u |  .00658197
     sigma_e |  .04077024
         rho |  .02540101   (fraction of variance due to u_i)
------------------------------------------------------------------------------

. estimates store re
. hausman fe re

                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |       fe           re         Difference          S.E.
-------------+----------------------------------------------------------------
         IPR |  -.0018656    -.0021538        .0002882        .0019582
         IGB |   .0003255     .0001233        .0002022         .000382
          IS |   .0443124     .0326639        .0116486        .0101256
        ISHR |    .009402     .0090956        .0003064        .0006586
          LR |   .0924688     .1077329       -.0152642        .0218888
------------------------------------------------------------------------------
                           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(5) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =        2.24
                Prob>chi2 =      0.8148
```

4. Regression Result, Random Effect Model

```
. xtreg ROA IPR IGB IS ISHR LR AGE,  re

Random-effects GLS regression                   Number of obs      =       110
Group variable: Firm                            Number of groups   =        11

R-sq:  within  = 0.2845                         Obs per group: min =        10
       between = 0.8485                                        avg =      10.0
       overall = 0.4557                                        max =        10

                                                Wald chi2(6)       =     77.50
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000
```

ROA	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
IPR	-.0021538	.0036525	-0.59	0.555	-.0093127	.005005
IGB	.0001233	.0012121	0.10	0.919	-.0022523	.0024989
IS	.0326639	.0128472	2.54	0.011	.0074838	.0578439
ISHR	.0090956	.0013944	6.52	0.000	.0063626	.0118287
LR	.1077329	.0206392	5.22	0.000	.0672809	.148185
AGE	.0019184	.0006347	3.02	0.003	.0006743	.0031625
_cons	-.3697505	.1206729	-3.06	0.002	-.606265	-.1332361
sigma_u	.00658197					
sigma_e	.04077024					
rho	.02540101	(fraction of variance due to u_i)				

5. VCE Robust Regression Result, Random Effect Model

```
. xtreg ROA IPR IGB IS ISHR LR AGE,  re vce(robust)

Random-effects GLS regression                   Number of obs      =       110
Group variable: Firm                            Number of groups   =        11

R-sq:  within  = 0.2845                         Obs per group: min =        10
       between = 0.8485                                        avg =      10.0
       overall = 0.4557                                        max =        10

                                                Wald chi2(6)       =    711.91
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000

                                  (Std. Err. adjusted for 11 clusters in Firm)
```

ROA	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
IPR	-.0021538	.0030554	-0.70	0.481	-.0081422	.0038346
IGB	.0001233	.0018229	0.07	0.946	-.0034496	.0036962
IS	.0326639	.0307991	1.06	0.289	-.0277013	.093029
ISHR	.0090956	.0024751	3.67	0.000	.0042446	.0139466
LR	.1077329	.0167196	6.44	0.000	.074963	.1405028
AGE	.0019184	.0007182	2.67	0.008	.0005107	.0033261
_cons	-.3697505	.2771622	-1.33	0.182	-.9129785	.1734775
sigma_u	.00658197					
sigma_e	.04077024					
rho	.02540101	(fraction of variance due to u_i)				

5. List of Sampled Insurance Companies of the Study

No.	Name of Insurances	Year of Est.	Type (Life and Non-life)	Ownership
1	Ethiopian Insurance Corporation	1975	Both	Governmental
2	Awash Insurance Company	1994	Both	Private
3	Nib Insurance	2002	Both	Private
4	Nyala Insurance Company	1995	Both	Private
5	United Insurance S.C	1997	Both	Private
6	Nile Insurance Company	1995	Both	Private
7	Oromia Insurance Company	2009	Both	Private
8	Lion Insurance Company	2007	Non-life	Private
9	National Insurance Company	1994	Non-life	Private
10	Africa Insurance Company	1994	Both	Private
11	Global Insurance Company	1997	Non-life	Private