ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

A THESIS ON;

THE EFFECT OF INVESTMENT ON FINANCIAL PERFORMANCE OF INSURANCE COMPANY; A CASE STUDY ON ETHIO LIFE AND GENERAL INSURANCE S.C

BY;

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ST. MARY'S UNIVERSITY SCHOOL OF GRADUATE STUDIES
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THE EFFECT OF INVESTMENT ON FINANCIAL PERFORMANCE OF INSURANCE COMPANY; A CASE STUDY ON ETHIO LIFE AND GENERAL INSURANCE S.C

By SISAY DENEKEW

APPROVED BY BOARD OF EXAMINERS

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DECLARATION

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

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           Name   Signature

St. Mary University, Addis Ababa June, 2023

ENDORSEMENT

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

Kiros Habtu (Ass. Prof.)   _____   _____

                              Advisor Signature   Date

St. Mary University, Addis Ababa June, 2023

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List of Acronyms

CLRM Classical Linear Regression Model

CD Certificates of deposits

DW Durbin–Watson

EI Equity investment

FAI Fixed asset investment

GDP Gross Domestic product

IA Insurance age

IS Insurance size

NBE National Bank of Ethiopia

OLS Ordinary Least Square

RTD Resource dependency theory

ROA Return on asset

ROE Return on equity

TBI Treasury bill investment

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ABSTRACT

With the help of multiple linear regression model and descriptive analysis, an attempt was taken to measure the profitability of Ethio Life and General insurance S.C. It was identified that firm's investment is an important determinant of profitability. Based on this rationality, the researcher selected Ethio Life and General insurance company purposely to identify its profitability and determinants of profitability. Among the selected variables to determine the return on asset; investment in properties, age, liability and liquidity ratio of the firm were identified as positive and significant determinants of firm's profitability. Size of the firm and its return from investments on equity and share were identified as having significantly negative impact on return on asset, profitability of Ethio Life and General insurance S.C. According to this result, this firm is recommended to invest more on properties, and to increase the liability side of the asset. The company is also recommended to raise its liquidity ratio and to sustain its operation in the market since age plays a role for the increment of return on asset.

__Key terms__; __Ethio Life and General, insurance, investment, return on asset, share__

CHAPTER ONE

INTRODUCTION

1.1. Background of the study

Investing is essential to good money management because it ensures both present and future financial security. Not only do you end up with more money in the bank, but you also end up with another income stream. Investing is the only way to achieve both growing wealth and passive income. Funds to be invested come from assets already owned, borrowed money and savings. By foregoing consumption today and investing their savings, investors expect to enhance their future consumption possibilities by increasing their wealth (Kristina, 2010).

According to Jake Safane (2022) an institutional investor is an organization like a bank or insurance company that invests large sums of money toward its own financial goals or for portfolios it manages. The forms and characteristics of institutional investors can vary widely. They are regulated differently and invest in different assets toward their specific investing goals. The most common investment opportunities that are pursued by most of these institutions world over include investment in real estate, equities, treasury bills and bonds, deposits with banks, and certificates of deposits. The income earned by the institutions from these investments is largely positive in many countries despite the economic pressures that lead to economic instability in some countries.

There are different types of investments that can be made by firms. Both individuals and companies can have investments. This may include stocks, mutual fund distributions, investment in Government securities, interest-bearing bank accounts, bonds, and other debt instruments. A firm may also opt to invest in rental property or real estate or other assets owned for investment purposes (Ezekiel, 2013).

Financial performance is a measure of an organization's earnings, profits, appreciations in value as evidenced by the rise in the entity's share price. In insurance, performance is normally expressed in net premiums earned, profitability from underwriting activities, annual turnover, returns on investment and return on equity. These measures can be classified as profit performance measures and investment performance measures. Profit performance includes the

profits measured in monetary terms. Simply, it is the difference between the revenues and expenses. Investment performance can take two different forms. One the return on assets employed in the business other than cash, and two, the return on the investment operations of the surplus of cash at various levels earned on operations (Chen and Wong, 2004).

In Ethiopia, the National Bank of Ethiopia (NBE, 2004) has developed and issued directives on investment of insurance funds. Therefore, this study examined the effect of investment on insurance company (Ethio Life and General Insurance S.C) on the level of financial performance and related result with the existing directives set by NBE.

1.2. Statement of the problem

Insurance companies as financial institutions play an important role not only in mobilizing contractual savings, but also in the efficient allocation of capital. Insurance companies exist primarily to reduce financial uncertainty and to provide protection against insurable risks at the insurance company's own risk (Schich, 2011). A common feature of insurance operations is that premium receipt precedes any claim or benefit payment. As a result, insurance companies must hold cash at all times to help them make investments that generate additional income such as dividends, interest, and realized capital gains. Therefore, in providing protection and other services, insurance companies hold or accumulate significant assets that they can transfer from one economic sector to another (Cummins & Weiss, 2014).

There are a number of ways that the insurance industry contributes to the efficiency and growth of the country's economy. One of the ways is to improve economic risk allocation and reduce transaction costs. Secondly, it protects existing assets and the insurance provides economic actors with a more stable financial basis. Third, insurance facilitates governance by holding assets that encourage risk mitigation through risk exclusion and guarantees that monitor risk directly. Insurance can also serve as a supplement and alternative financial support when dealing with damage to the economy resulting from bankruptcies, disasters and accidents (Berdin & Gründl, 2015).

Insurance companies mobilize significant portion of financial resources predominantly in the form of premiums on insurance policies. These financial resources are usually invested by insurance companies in income-earning assets in order to maximize profits. Due to the fact that,

the NBE allows insurance companies to invest in treasury bills, time deposit investment, purchase or construction of building and company shares (NBE Directive No SIB/52/2020).

There are limited studies examined on effect of investment on financial performance of insurance companies in worldwide. However, these are some studies that have been conducted on this issue (Kibanga, 2019; Biniam, 2018; Tsion, 2018; Mathew, 2016; and Fahmi, 2021).

Thus, the following studies concluded their findings, but there are some deviations on their results, for instance the research conducts by Biniam (2018) the effect of investment on financial performance of insurance companies recommended insurance companies are advised to invest in Fixed asset & Government Securities in order to enhance the financial performances.

Tsion (2018) with similar topic concluded that investment has significant effect on financial performance of Ethiopian insurance companies. Fahmi (2021) concluded and recommended that insurance companies have 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.

Most of the studies on this area used panel data and panel regression analysis for insurance companies in Ethiopia. Unlike the previous studies this study examined the effect of investment on financial performance of insurance company for the case of Ethio Life and General Insurance S.C. In the analysis, the researcher examined the financial performance of the company using the last ten years most crucial financial statements. The study has provided insights in to the effect of investment on financial performance of insurances particularly for Ethio Life and General Insurance S.C.

The study would help individual insurance companies on their decisions where to invest and how to evaluate the performance of their returns. This study can be used for micro/single firm analysis since it has used important determinantal variables of investments on the insurance sector.

1.3. Objective of the Study

1.3.1. General Objective

The general objective of this study is to examine the effect of investment on financial performance of insurance companies in the case of Ethio Life and General Insurance S.C.

1.3.2. Specific Objectives

In order to address the general objective of the study this paper go through and addressed the following important specific issues.

- To examine the effect of equity and share investment on financial performance of Ethio Life and General Insurance S.C.
- To examine the effect of fixed asset investment on financial performance of Ethio Life and General Insurance S.C.
- To examine the effect of return on liability on financial performance of Ethio Life and General Insurance S.C.
- To examine the effect age, size and liquidity ratio on financial performance of Ethio Life and General Insurance S.C.

1.4. Scope and limitations of the Study

The study is limited on the effect of investment on financial performance of Ethio Life and General Insurance S.C and made the analysis using secondary data. Although the financial sector in general, and the insurance sub-sector in particular is expanding, due to time and cost constraints, this study is limited only to Ethio Life and General Insurance S.C. In spite of having multiple factors for the performance of insurance companies, this study emphasized only on the impact of investments for financial performances of insurance firms.

The study took in to account of the performance of the company for the last 10 years that is from 2013 to 2022. The study took the time series-based data on Company total assets, profit and market share. The analysis used investment factors as independent variables that are time deposit investment, equity investment, treasury bills investment and fixed asset investment and two control variables (insurance size and age).

1.5. Significant of the Study

This study provides some benefits for the company on the National Bank of Ethiopia regulation limitation on the area of investments and the effect of the regulation affect its financial performance that will be earned form investment. In addition, the research will give important points to the company to act on its investment policy by using the opportunities that NBE allowed it and how to manage its investment portfolio with respecting the regulation. Findings from this study will also help National Bank of Ethiopia to improve the investment regulation without making the policy highly restrictive. Furthermore, the study will help other researchers as a source of reference and an initial point for those who want to make further study on the area of insurance companies' investment.

1.6. Organization of the Study

This study is organized into five chapters in which the first chapter covered introduction parts that include background, statement of the problem, objectives of the study, research questions, significance, scope and limitation of the study. The second chapter explained and assessed the theoretical and empirical literatures followed by the third chapter which presented the research design and methodology. Analysis of data and its interpretation is presented in the fourth chapter and finally conclusion and recommendations are stated in the fifth chapter.

CHAPTER TWO
LITERATURE REVIEW

2.1 Theoretical Literature

A review of various published works in the areas of investment and the performance of insurance companies is made to identify and develop the research problem, to develop research questions and to pass through appropriate research methods. From different countries research experiences various related research works from different researchers' pint of view. Therefore, the literature review is organized and presented in two sections. The first section discusses the theoretical literature about investment and the performance of insurance companies from different perspectives and the second section presented empirical literature on studies made at similar level.

2.1.1 Definition of investment

From a macroeconomic perspective, investment refers to the net increase in aggregate capital, made up of services and products used to produce other products and services. Construction machinery and equipment and inventory are good examples of investments (Weebly, 2013). The term investing can be related with the unique states, but the main aim of investment utilizes the finances throughout the time in order to maximize 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).

All the scholars around the world have tried to define the concept of insurance entirely based on their opinion. Kunreuther (2010) defines an insurance company as a remote financial institution or organization that facilitates the transfer of economic risk from individuals or companies to a collective group through a bilateral agreement. Each insurance carrier receives a certain level of protection against the perils he or she faces, representing 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.

2.1.2. Direct versus indirect investing

Investors can use direct or indirect forms of investment. Direct investments are made through the financial markets and indirect investments are made through financial intermediaries. The main difference between these two types of investments is that direct investors buy and sell financial assets and manage their individual investment portfolio themselves. Consequently, investors who invest directly through financial markets bear all of the risk and their successful investment depends on their understanding of financial markets, their volatility and their ability to analyze and evaluate the investments and to manage their investment portfolio (Kipleting, 2016).

In contrast, investors who invest indirectly buy or sell financial instruments from financial intermediaries (financial institutions) that invest large funds in the financial markets and hold portfolios. Indirect investing relieves investors of making decisions about their portfolio. As shareholders with ownership interests in the portfolios managed by financial institutions (mutual trusts, pension funds, insurance companies, commercial banks), investors are entitled to their share of the dividends, interest and capital gains generated and pay their share of the costs and expenses of the institution's portfolio management fee (Kristina, 2010).

2.1.3   Financial investment area
2.1.3.1 Money and Capital Markets

Bodie et. al., (1999) argues that financial markets can be divided into money and capital markets. These financial markets are made up of securities such as those issued by government, local, municipal and corporate bodies. The main characteristics of money markets and capital markets are based on time, return and risk variables and are detailed below (Matanda et. al., 2020).

Money Markets

These markets are for securities with short-term maturities, or those with lives of one year or less. The financial securities traded on money markets have low transaction costs, are completely risk-free, and have a high marketability and liquidity level. Certificates of Deposit, Treasury Bills, Commercial Paper, Repurchase Agreements, and Bankers' Acceptances are some examples of common money market securities (Hajering, 2018).

Certificates of Deposit (CDs)

These are bank time deposits that cannot be withdrawn by the owners immediately. Businesses or consumers may have extra cash on hand that they are not using or may not be sure when they will need it given the investment climate and the financial system of an economy. In this case, the business or home may continue and deposit the money with a bank. The negotiable certificate of deposit (NCD) is the most popular type of certificate of deposit. Any time before maturity, the NCD's owner may proceed and sell it on the open market. But its market price will be determined by the current discount rate and the number of days till maturity (Khresiat, 2020).

Treasury Bills (TBs)

These are money market securities issued by monetary authorities (Central Bank) to the investing public on behalf of the government in an economy. Treasury bills are the most marketable and liquid instruments mainly because they are issued and backed by the government in an economy. These assets are used to control money supply, mainly inflationary and deflationary pressures, in order to attain equilibrium in the financial sector of an economy (Salim & Santosyah, 2019).

Commercial Papers

Instead of taking out a loan directly from a bank, these big, reliable companies issue short-term financial instruments to the investing public. Bank lines of credit are typically used by enterprises to bolster their offerings to the investing public. These banking options give the borrowers access to cash they can use to repay the notes when they come due (Matanda, 2020).

Bankers' Acceptances (BAs)

These are agreements comparable to post-dated checks that result from instructions given by client companies to their banks to pay specific amounts of money at specific future dates. By

endorsing the orders and agreeing to pay the bearers on the specified dates, the banks would accept the orders from the clients. Because their holders can sell them on the secondary market for a price below their face value, these acceptances qualify as negotiable instruments. In export and import transactions, when determining the creditworthiness of trading partners is frequently challenging, bankers' acceptances are frequently employed (Yuvaraj & Abate, 2013).

Repurchase Agreements (Repos)

These are a few examples of short-term or overnight loans that dealers in treasury bills utilize. The dealers go ahead and sell the treasury bills overnight and arrange to buy them back the next morning at prices that are just a little bit higher than those at which they were initially sold. Treasury bills are used as collateral assets for the credit facilities by dealers in such arrangements, who then acquire one-day loans from the investors. To do this, investors look for dealers who have treasury bills and negotiate to buy them. In the end, investors consent to return these papers or financial assets to the dealers the following day at slightly higher prices than they would have paid for them (Matanda, 2020).

Capital Markets

These are financial markets for long-term financial instruments and real assets that is assets with a lifespan of more than one year from the date of issue. Capital markets, like money markets, have both primary and secondary market segmentations. These financial markets are made up of fixed and variable income securities issued by both corporate organizations and the government (Bodie et al, 1999). Therefore, bonds and shares sold on capital markets represent fixed and variable income securities respectively. Capital markets are therefore financial market frameworks for the trading of securities such as bonds, shares and real assets.

Treasury Bonds (TBs)

In order to raise long-term capital from the investing public, governments in economies issue these financial instruments, often with maturities of 10 to 30 years. The nature of Treasury bonds may be callable, which means that they may allow the Treasury (the issuer) to repurchase them at par before maturity. Municipal and local bonds are issued by non-governmental organizations and traded similarly to treasury bonds on capital markets (Eskedar, 2016).

Corporate Bonds

These financial assets are issued by corporations in order to borrow funds from the investing public for certain private investments. The bond pays a fixed amount of income to the holder or investor annually based on its face value. Redeemable bonds have a maturity date on which their face values will be paid to bondholders or investors by the issuers. Treasury bonds may be secured or unsecured through assets owned by their issuers. These bonds can also be callable like treasury bonds or convertible in nature. Bonds are said to be convertible if they give their holders the right but not the obligation to convert them into a specified number of ordinary shares of the company at an agreed price and after an agreed period of time (Matanda, 2020).

Equity Securities

The markets for equities are made up of common and preferred stocks or shares. The returns to investments in these stocks are in the form of dividends and capital gains. Reilly and Brown (2000) argue that a shareholder is an investor with an ownership stake in a corporation. Ordinary shareholders are entitled to residual income from the profit after obligations to debt and preference equity providers have been settled. Preference shares may also be redeemable in nature, implying that corporations may be obliged to pay back the capital invested to the investors at the end of an agreed period of investment time.

The difference between money and capital markets is arbitrary. Money markets mainly focus on non-financial economic (NFE) units (surplus and deficits units) rapid adjustment of actual liquidity positions to the levels desired at a given time. Capital markets on the other hand focus more on savings and investments that are vital to economic growth, stability and the provision of a bridge by which the savings of surplus units may be transformed into investment of deficit units such as asset acquisition. Hence capital markets focus mainly on economic stability and development by expanding the total amounts of savings and investment in all sectors of the economy (Harvey, 2012).

2.1.3.2. The Concept of Insurance Profitability

Profitability is one of the most important objectives of financial management. One goal of financial management is to maximize the owner`s wealth and profitability which is very important determinants of performance. Measuring the performance of financial institutions has

gained the relevance in the corporate finance literature because as intermediaries, these companies in the sector are not only providing the mechanism of saving money and transferring risk but also helps to channel funds in an appropriate way from surplus economic units to deficit economic units so as to support the investment activities in the economy (Hifza, 2011).

The insurance industry has an important role to resistant and keeps an economic system to have a successful operation of the industry by setting energy for other industries and development of an economy. To do so the insurance industry is expected to be financially solvent and strong through being profitable in operation. Hence, not only measuring the financial performance of insurance companies but also to have a clear insight about factors affecting financial performance in the industry which, is the main problem to be investigated. Therefore, the determinants of insurance company's performance have attracted the interest of various academicians, practitioners and institutional supervisors. In order to have full and fuller understanding of the impact of financial risk on the profitability of insurance companies the present study will take into consideration various ratios like solvency, liquidity, profitability (Camelia, 2011; Arif, et al. 2015).

William, et al. (2004) suggested that although there are different ways to measure profitability, it is better to use ROA. In addition, the financial performance of insurance companies is usually expressed in terms of net premiums earned, profitability from underwriting activities, annual turnover, return on investments and return on equity. These metrics could be classified as earnings performance metrics and investment performance metrics. However, most researchers in the field of insurance and its profitability stated that the key indicator of a company's performance is ROA, defined as pre-tax profit divided by total assets.

2.1.4 Investment related theory

Resource Dependency Theory

RDT was originally developed by Pfeffer and Salancik (1978). It has since been used as a basis to study and explain the influences of environments on organizational relations. The theory is based on the assumption that environments are the source of scarce resources and organizations are dependent on these finite resources for survival. A lack of control over these resources thus acts to create uncertainty for firms operating in that environment. Organizations must develop

ways to exploit these resources, which are also being sought by other firms, in order to ensure their own survival.

They identified factors that have a significant impact on the degree of dependency of an organization on certain resources. The first factor relates to the overall importance of the resource to the organization; the second is the scarcity of the resource. The scarcer a resource is the more dependent the company becomes. Finally, another factor affecting resource dependency is the competition between organizations for control of that resource. All three factors combine to affect an organization's level of dependency on a particular resource. Resource dependency theory also concludes that a firm's strategic options are largely determined by the environment. Because organizations are dependent on their environment for resources, they must implement strategies that enable them to acquire those resources. Therefore, the external environment for these firms has already been determined and they have few strategic choices (Pfeffer et al., 1978).

The Agency Theory

Agency theory has been used by scholars across several different disciplines. In essence, agency theory stems from its roots an economic view of risk sharing (Eisenhardt, 1989), which occurs between two parties, principals and agents, yet each of the two parties may possess different approaches to solve the problem (Jensen & Meckling, 1976). They were the first people to suggest the agency theory in a theory of the firm based upon conflicts of interest between various parties such as shareholders, corporate managers and debtors. However, since then, the finance theory has developed both theoretically and empirically to allow a fuller investigation of the problems caused by divergences of interest between shareholders and corporate managers. The Agency theory indicates that agency problems arise because of the impossibility of perfectly contracting for every possible action of an agent whose decisions affect both his own welfare and the welfare of the principal.

McColgan (2001) goes on to argue that despite its agency conflict flaws, the modern corporation appears to be the most popular form of corporate organization. Perhaps this is largely due to the development of governance mechanisms aimed at limiting the scope of these problems. Pension funds can be considered as representatives of the members. They are entrusted with money belonging to the members, which they manage on their behalf. This

theory implies that the pension schemes are only agents who must act on behalf of the owners, who are the contributors to the pension schemes. Pension systems may have other divergent interests, but the primary purpose of their existence is to create value for contributors. Contributors have the right to choose how their savings are invested and accessed in pension plans, including early entry.

Slack Resources Theory

Slack is used to stabilize a firm's operations by absorbing excess resources during periods of growth and by allowing firms to maintain their aspirations and internal commitments during periods of distress (Cyert & March, 1963; Levinthal & March, 1981; Meyer, 1982). Slack provides that cushion of actual or potential resources that allows an organization to adapt successfully to internal pressures for change in policy as well as to initiate changes in strategy (Bourgeois, 1981). Through this dual internal and external role, slack influences performance.

The theory suggests that Slack serves four main functions in an organization. Slack's first feature is a member incentive. The second function of Slack is to act as a resource for conflict resolution. The third function of Slack is to act as an isolator to protect the organization from environmental turmoil. Finally, Slack can encourage strategic behavior, allowing the organization to experiment with new strategies, such as the introduction of new products and entry into new markets (Tan et al., 2003).

Organizational buffer can be divided into absorbed and unabsorbed buffer. The latter refers to resources that are not currently allocated to any activity and therefore can easily be reallocated to another activity depending on environmental needs. This gives management greater discretion in the use of resources and can impact an organization's performance. The absorbed slack refers to excess costs in the organization, and these are usually very difficult to reallocate (Bourgeois, 1981; Bourgeois & Singh, 1983; Sharfman, et al., 1988).

2.1.5 Investment of insurance funds regulation in Ethiopia

The National Bank of Ethiopia which is the regulatory body financial institution in the country has issued directive with regard to the investment of insurance funds. The general insurance business funds are invested in treasury bills and saving deposits, not less than 60% of the

admitted assets; provided, however, that deposits (current, savings and time deposits) held with a single bank account may not exceed 15% of total admitted assets; investments in company shares not exceeding 20% of the total admitted assets; in real estate not exceeding 10% of the total admitted; 10% of the admitted assets in investments of the insurance company's choice.

Whereas an insurance company's run long-term insurance business, funds are invested as in treasury bills/bonds and bank deposits, totaling not less than 50% of the total admitted assets; provided, however, that aggregate deposits (cheques, savings and time deposits) with any bank may not exceed 15% of total admitted assets , investments in company shares not exceeding 15% of total admitted assets; investment in real estate/ purchase or construction of building used for rent, capital appreciation, own use or both not more than not exceeding of 25% total admitted assets and 10% of the admitted assets in company's choice respectively NBE directive No. SIB/52 (2020).

2.2. Empirical review

2.2.1 World wide context

Ahmed (2019) conducted on financial performance of insurance companies of Pakistan. Gross written premium (GWP), Claim (CLM), Reinsurance (Rei), Management expenditure (MGE), Interest rate (IR), Size (SIZ), Leverage (LEV), Real GDP (RGDP) were taken as factors independent variables), whereas Sales Profitability (SAP), Investment Income (INP), and Underwriting profit (UWP) were taken as proxy of financial performance. Data of five 5 insurance companies are chosen covering the period of 2013-2017. Data was analyzed using panel regression. Findings showed that the gross written premium has the significant impact on all three measures of profitability. The further size of the company has a negative impact on sales and investment profit. In addition, the claims, reinsurance, GDP, interest rate and management expenses have an insignificant relationship with all three profitability measures. Hence, in order to improve operational and financial performance of the insurance industry in Pakistan, more focus should be given to factors that could increase premium.

Burca and Batrinca (2014) conducted a study on the title Determinants of Financial Performance of Insurance Companies in Romanian. The aim of their study was to determine the factors affecting the financial performance of life insurance companies in Romanian over the period 2008-2012. The study was conducted using specific panel data techniques. The study's

regression results showed that risk retention, firm size and solvency margin are positively and significantly related to performance and financial leverage underwriting, gross written premium growth, risk and significantly related to financial performance.

According to Husain (2016), the key determinants of long-term investments of India's non-life insurance industry are the study. The financial statements of 19 non-life insurance companies 20 over a 5-year period (2011-2015) were sampled and analyzed using panel regression. The results show that highly liquid, highly profitable, and large insurance companies invested more over the long term than low-liquidity, low-profitable, and small companies, as expected. The researchers also found that insurance companies with higher risk retention and leverage ratios invested less over the long term than insurance companies with lower risk retention and leverage ratios.

Based on Edlira et al. (2016) Assess Insurance Company Profitability – Albania Case to assess the impact of internal factors, growth rate, liquidity, liability, fixed assets, company size and capital volume on the profitability of insurance companies in Albania. The purpose of their paper was to provide insurance companies operating in their country with a useful tool to base their decisions on economic and statistical implications. They examined 7 insurance companies in the period 2008-2013. The methodology used to achieve the objective of the papers is based on multiple regression instruments with panel data. According to the analysis result, multiple regression indicated that there was a statistically significant relationship between growth rate, liquidity, liabilities and fixed assets on insurer profitability, while the influence of company size and capital volume factors was not statistically significant.

2.2.2 Research Conducted in Africa

As per Veronica (2015) studied on relationship between investment and financial performance of insurance companies in Kenya which discloses relationship between investment and financial performance of insurance companies in Kenya. The study took the form of a descriptive study with a target population of 45 insurance companies in Kenya. All the 45 insurance companies were involved in the study. Secondary data was successfully collected from 32 insurance firms. Multivariate regression analysis and correlation analysis were carried out to establish the nature of the relationship between investment and financial performance.

The study established insurance companies in Kenya invest their funds in three popular areas. These include investments in real estate that holds the largest funds in terms of investments; investments in deposits with other financial institutions where the firms hold certificates of deposits and investment in Government securities. These investments in real estate, certificates of deposit, Government securities, corporate bonds and stocks have a significant impact on the financial performance of the insurance companies.

Mariam (2013) studied on the relationship between portfolio holding & financial performance of Insurance companies in Kenya. The research objective was to establish the relationship between portfolio holding and financial performance of insurance companies in Kenya. The population of the study was all insurance companies operating in Kenya as at 31st December, 2012. The main source of data was secondary data from the Insurance Regulatory Authority, Association of Kenya Insurers, and insurance companies themselves. The researcher conducted a multiple regression analysis in order to determine the relationship between portfolio holding and financial performance of insurance companies in Kenya. The study found that there is a positive and strong relationship between portfolio and financial performance of the insurance companies. The researcher found that investment in real estate & government securities have direct relationship with the overall profitability of insurance company. However, investment in bank deposit & stock have an inverse relationship.

Suheyli (2015) conducted research on determinants of insurance companies' profitability in Ethiopia. In order to achieve this objective, the study used mixed research approach. Panel data covering eleven-year period from 2004 to 2014 were analyzed for nine insurance companies from the total population of all insurance companies registered by NBE and under operation in Ethiopia. Also, in-depth interview was conducted with company managers. Underwriting risk, reinsurance dependence, solvency margin, liquidity, company size, premium growth, technical provisions, inflation and growth rate of GDP were independent variables while profitability was dependent variable. The findings of the study showed that underwriting risk, technical provision and solvency ratio have statistically significant and negative relationship with insurers' profitability. However, reinsurance dependence has negative but insignificant relationship with profitability. On the other hand, variables like liquidity, company size and premium growth have a positive and statistically significant relationship with insurers' profitability. In addition,

economic growth rate has significant influence on profitability whereas inflation has insignificant influence on insurers' profitability. The study provided evidence that underwriting risk, technical provision and liquidity were the most important factors that affect profitability of insurance companies in Ethiopia.

2.3 Conceptual framework

According to an empirical review, there are limited studies worldwide on the impact of investments on the financial performance of insurance companies. However, these are studies that have been conducted on this issue Ahmed (2019), Burca and Batrinca (2014), Husain (2016), Veronica (2015), Helmut (2016), and Ezekiel (2008) though they have some deviations on their results. For instance, the research conducts by Ahmed (2019) showed that the gross written premium has the significant impact on all three measures of profitability. The further size of the company has a negative impact on sales and investment profit.

However, as per Burca and Batrinca show that risk retention, firm size and solvency margin are positively and significantly related to performance and financial leverage underwriting, gross written premium growth, risk and significantly related to financial performance. Husain (2016), results show that highly liquid, highly profitable, and large insurance companies invested more over the long term than low-liquidity, low-profitable, and small companies.

Veronica (2015) show investment in bond (government securities) has significant and negative effect on financial performance of insurance companies. Ezekiel (2008) findings investment in bond has positive and statistically significant effect on financial performance of insurance companies. In addition to this, there are researches which is reviewed in this study related with factors affecting financial performance of insurance companies and used some variables as control variable in addition from investment factors variable.

From the theoretical and empirical literature reviews, the following conceptual framework of the study is developed by the researcher**.**

| INDEPENDENT VARIABLES | DEPENDENT VARIABLE |

.

Investment variable
   Equity investment
   Property investment
   Investment in share
   Return from liability

ROA

Control variables
   Insurance size
   Insurance age
   Liquidity ratio
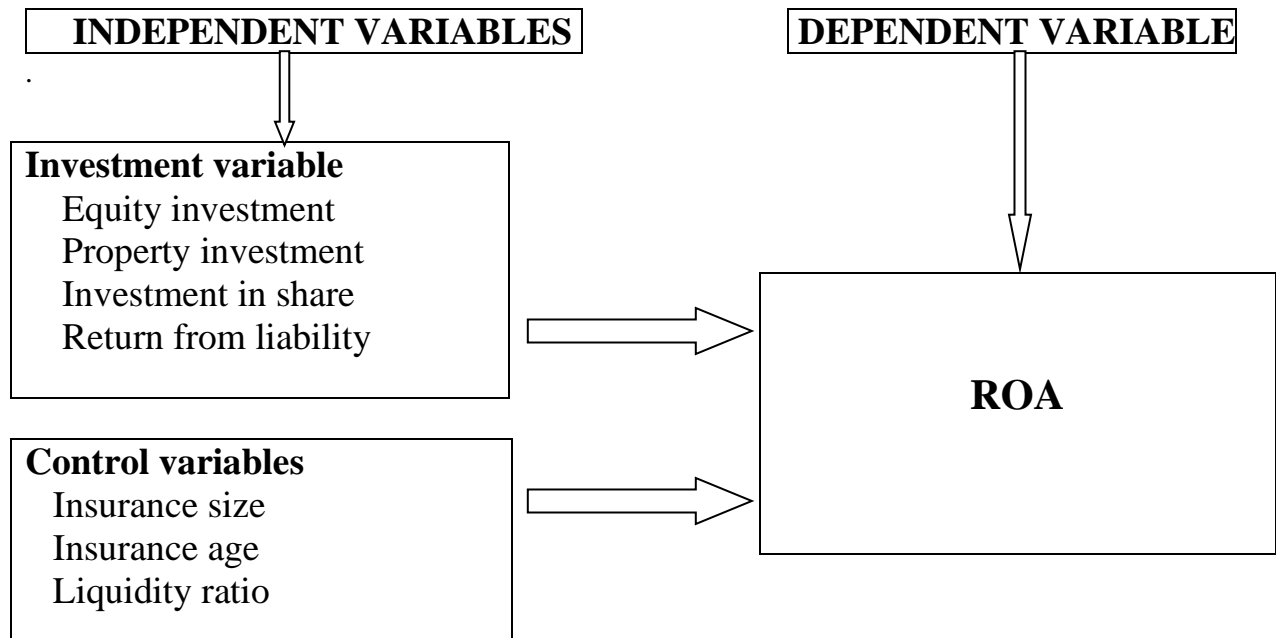
Source; Compiled from reviewed literatures

Figure 2.1 Conceptual framework of the study

CHAPTER THREE
RESEARCH DESIGN AND METHODS

3.1 Introduction

As the science and philosophy behind any research, this section focuses primarily on the research methodology and design in order to accomplish the study's goal. The quantitative research design, data type and source, population and sample design, and its specifications, and measurements of the variables are where the study's mixed methodology has started. Second, the impact of various investment kinds on the financial performance of insurance businesses in Ethiopia was examined using quantitative research design and methodology, techniques of analysis, and statistical tools.

3.2 Research design

In order to address its objective, this research used both explanatory and descriptive studies, as Cooper et al., (2003) discussed the explanatory studies helps to go beyond observing and describing the condition and tries to explain the reasons of the phenomenon. The explanatory research design used in this research because the study identified the cause and effect of investment on insurance company financial performance which is appropriate for the objective of the study.

3.3 Research approach

The quantitative aspect of the research method aimed to obtain data needed to explain the relationship between effects of investment on insurance company financial performance in Ethio Life and General Insurance. A survey design is applied and it is used to provide a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population. From sample results, the researcher generalizes or makes claims about the population (Creswell, 2009).

3.4 Population and Sampling Techniques

For the overall company profile and verbal explanation of its performance the study has used discussion with managers at various levels, insurance officers and finance officers in the company. For the quantitative, analysis the researcher used the secondary data covered a period of ten (10) years from 2012-2022. The reason for the ten years period data is because of the

unavailability of data for more years of operation since the firm is established in October 2008. The sample used in this study is purposive sampling and accordingly the researcher selected Ethio Life and General insurance S.C. According to Suheyli (2015) as cited in Singh (2006) when the subjects used in the sample is homogeneous, using purposive sampling technique is appropriate.

3.5 Data sources and instruments

The main source of data in this study was the insurance company. Using this sources of data, secondary data are obtained from the company's audited financial statement and annual reports filed with NBE through document review. Furthermore, secondary data and information about the company were collected from books, journals and websites.

3.6 Data analysis

To achieve its objective, this study concentrated on quantitative data analysis. Hence, the researcher used econometric model to identify and measure effect of investment on Ethio life and General Insurance Company financial performance and used Ordinary Least Square (OLS) method using STATA15 software package for the study. According to Brooks (2008) regression is concerned with describing and evaluating the relationship between a given variable (usually called the dependent variable) and one or more other variables (usually known as the independent variables. Thus, the researcher adopted multiple linear regression model to examine the effect of investment on financial performance of Ethio Life and General Insurance S.C.

3.7 Methods of data analysis

For this study, the researcher used a multiple linear regression model using an OLS estimation technique. The study examines and quantifies the impact of various investments on their return to assets (ROA), which is the measurement of financial performance in the Ethiopian insurance businesses. The study has used a quantitative strategy to collect secondary data and analyze it in order to test the hypothesis and generalize the findings of the research. The financial statements of Ethio Life and General insurance was collected and analyzed using STATA15 statistical software program. To test the theory and determine whether independent variable(s), either individually or collectively, makes a significant contribution to the explanation of the independent variables, multivariate regression analysis and OLS estimation were used.

3.7.1 Specification and Formulation of the Research Model

This research analyzed the effect of different types of investments on the financial performance of Ethio Life and General insurance company by employing a ten-year secondary data and multiple linear regression model. Thus, the following multiple linear regression model is developed to address the objective of the study by explaining the return on asset as a proxy for financial sector performance. In order to explain the main determinants of investment performance at Ethio Life and General insurance company, different independent and control variables were utilized. The equation below (eq 3.1) states the relationship between the dependent and independent variables;

$$ROA = f(INC, PRINV, SHINV, LIAB, SIZE, AGE, LRATIO) \dots \dots \dots \dots \dots \dots \dots \dots eq\ 3.1$$

According to the above equation, the dependent variable return on asset (ROA) is explained as a function of income received (INC), investment in properties (PRINV), investment in shares (SHINV), company liability (LIAB), size of the company (SIZE), age of establishment of the company (AGE) and its liquidity ratio (LRATIO). This relation can be further estimated as given below:

$$ROA = \beta_0 + \beta_1 INC + \beta_2 PRINV + \beta_3 SHINV + \beta_4 LIAB + \beta_5 SIZE + \beta_6 AGE + \beta_7 LRATIO$$
$$+ \varepsilon_i \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots eq\ 3.2$$

Given the specific variables in the specified regression model above in (eq 3.2), some of the variables needs variable transformation to reduce the outlier effect and to linearize these variables. The most common and simple form of variable transformation is the natural logarithmic transformation. According to this, the reduced and more appropriated model is given in the equation (eq 3.3) below;

$$ROA = \beta_0 + \beta_1 LNINC + \beta_2 LNPRINV + \beta_3 LNSHINV + \beta_4 LNLIAB + \beta_5 SIZE + \beta_6 AGE$$
$$+ \beta_7 LRATIO + \varepsilon_i \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots eq\ 3.3$$

Now, eq 3.3 above can be estimated without any problem of outlier and it is simple to interpret since the natural logarithmic transformation measures growth and uses percentage to interpret.

3.7.2 Definition and Measurement of the Research Variables

While conducting a quantitative study, and in order to make the study clear to all readers how groups of variables are defined and measured, the operational definition and measurement of each variable must be explained (Creswell, 2009), which are provided below for this study.

Return on Asset (ROA); this is the dependent variable of this study which used to measure the profitability of insurers. This 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.

Income Received; this refers to income in which the insurance company made in its equity investment. It is measured as the natural logarithm of total equity investment.

Investment in Properties; Investment in properties is a measure of capital spending. Any type of investments which have tangible natures within the specific period of time, such as building, capital assets, equipment, 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.

Liability; this measures the total liability that the company owed. This can be measured as the natural logarithmic of total liability of Ethio Life and General insurance S.C.

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

Insurance Size; it is measured 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.

3.7.3 Assumptions of Classical Linear Regression Model and Post-Estimation Tests

To determine whether the assumptions of the classical linear regression model (CLRM) is valid or not the model requires diagnostic tests. Consequently, the basic CLRM assumptions to be tested and validated in this research includes; homoscedasticity, multicollinearity, normality and model specification. For this purpose, the post-estimation tests of normality, multicollinearity, heteroskedasticity and model specification have been conducted.

Heteroskedasticity is one of the basic assumptions for the ordinary least squares regression which is about 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 is conducted.

Normality of the error distribution assumes 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 a normal distribution superimposed on the graph.

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

Model specification is the other post-estimation test in the CLRM used to check whether the model is correctly specified with all the necessary variables. Omitted variable test estimation is used in checking the correct specification of the model.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

4.1 Introduction

Data analysis and interpretation of the result are presented in this chapter. Descriptive statistics, correlation analysis, econometrics regression result, and the post-estimation test assumptions and results are presented in this chapter.

4.2 Descriptive Statistics

In this section the main descriptive parameters of the inferential statistics are explained and discussed. The descriptive statistics of the main investment components of Ethio Life and General insurance company and their respective returns on asset have been displayed. In the descriptive analysis the researcher used the ten-year annual statement of the company. Based on this data the statistical descriptions are presented in the table (Table 4.1) below. In the table the main statistical measures of mean, standard deviation, minimum and maximum values are displayed.

Table 4.1 Statistical summary of descriptive analysis

Variable	Obs.	Mean	Std. Dev.	Min	Max
ROA	10	0.0202526	.061543	-.1294041	.0661898
INC	10	1.33e+07	1.19e+07	3010.9	3.00e+07
PRINV	10	1.13e+07	4367883	1499973	1.44e+07
SHINV	10	1.57e+07	9077344	981490	3.29e+07
LIAB	10	2.48e+08	2.01e+08	8765696	5.28e+08
SIZE	10	19.33589	1.079878	17.38435	20.43849
AGE	10	9.5	3.02765	5	14
LRATIO	10	1.969072	.8712627	1.353533	4.047054

Source; Obtained from the balance sheet of Ethio Life and General insurance using STATA15

The descriptive statistics given above in the table (Table 4.1), explained the statistical summaries of the financial statement of Ethio Life and General insurance company. Based on the last ten-years of data, it is observed that the average rate of return on asset (profitability) recorded at 0.0202526 units with the highest return reached at 0.0661898 in 2017 and the lowest

value of return on asset registered at -0.1294041 in 2013. Here, we can observe that the rate of return is not related to the age and size of the company but with the overall economic performance.

Regarding with the equity investment and income received from investment in share, they both registered their minimum value in the year 2013 and reached maximum in 2022. Thus, the returns from these two forms of investment (equity and share investments) have increased overtime and reached maximum very recently. Unlike this, the return from property investment reached its climax in 2019 from its smallest return in 2013.

The size of the firm exhibits increasing trend over the study period whereas the liquidity ratio is decreasing over time. Total liability of the firm was increasing until 2021. But, at the end of 2022 the total liability of the firm experienced decreasing trend compared to the 2021 total liability.

4.3 Correlation Analysis

Correlation between the variables depends on its coefficient, which ranges between positive one and negative one. The 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 illustrated the correlation matrix of the study;

Table 4.2 correlation matrix

	ROA	LNINC	LNPRINV	LNSHINV	LNLIAB	SIZE	AGE	LRATIO
ROA	1.0000							
LNINC	0.6161	1.0000						
LNPRINV	0.4395	0.2474	1.0000					
LNSHINV	0.5580	0.4466	0.5243	1.0000				
LNLIAB	0.7410	0.3689	0.4663	0.1121	1.0000			
SIZE	0.4109	0.3557	0.3428	0.2001	0.3971	1.0000		
AGE	0.6547	0.5020	0.2116	0.4951	0.2442	0.2576	1.0000	
LRATIO	-0.5457	-0.5401	-0.2525	-0.5451	-0.4492	-0.3250	-0.3252	1.0000

Source; Obtained from the balance sheet of Ethio Life and General insurance using STATA15

The figures in the above table (Table 4.2) shows that, except the liquidity ratio, all of the returns from different forms of investment, insurance size and age of the insurance have a positive correlation with return on asset, profitability. This implies that an increase in each type of investments would result in an increase in performance of Ethio Life and General insurance. The correlation matrix above shows that there is no independent variable in the model which is highly correlated (all the correlation coefficients are below 75%). This indicates the validity of one of the key assumptions of multiple linear regression. If two independent variables are highly correlated, problem of multicollinearity will be occurred. Therefore, according to the result, there is no multicollinearity problem in this model.

4.4 Regression Analysis

As the main parts of the analysis, this sub-section discussed the result of the multiple linear regression model. In the analysis, the researcher used robust regression technique which used to overcome the problem of heteroskedasticity. Based on the data obtained from the balance sheet of Ethio Life and General insurance company and STATA15 software, the estimation result of the hypothetical model developed in equation (eq 3.3) of the previous section estimated and explained in the equation (eq 4.1) below;

$$\text{Number of obs.} = 10 \qquad Prob > F = 0.0000$$
$$F(7,2) = 84022.49 \qquad R-squared = 0.9991$$

$$ROA = -0.05 - 0.02LNINC + 0.08LNPRINV - 0.03LNSHINV + 0.58LNLIAB - 0.64SIZE + 0.02AGE + 0.28LRATIO + \varepsilon_i \ldots \ldots \ldots eq\ 4.1$$

$$(4.08) \quad (-6.42) \qquad (7.09) \qquad (-5.27) \qquad (5.39) \quad (-8.60) \quad (-6.95)$$

The values in the parenthesis are the respective t-values

The regression result explained above in equation (eq 4.1), relates the impacts of each investment parameters on the profitability (ROA) of Ethio Life and General insurance company. As explained in the coefficient of determination (R^2), 99.91% of the profitability or return on asset is obtained from company's liability, investments in equity, property and shares. The analysis also explained that the rate of return is impacted by size, age and liquidity ratio of the firm. Being significant, the probability value of the F-statistic explained that the overall model is fitted and appropriate.

The t-values in the parenthesis are all above 1.96. Using the rule of thumb, we can conclude that all the explanatory variables are significant to affect the return on asset. Except the return from equity investment (LNINC), which is significant at 5% level of significance, all the explanatory variables are significant to affect the return on asset at 1% level of significant. The p-values in the regression result (Appendix C) also verified this fact of the estimation.

Investment in properties, liquidity ratio, total liability of the company and its operation time have contributed positively to return on asset. Accordingly, a percentage increase in property investment, liquidity ratio and total liability will raise the profitability rate by 0.08, 0.28 and 0.58 percentage level, respectively. Being active in the market, the firm will raise its profitability rate by 0.02 percentage level in each additional year.

Investment in equities and shares, and total asset (size) of the firm have negative impact on the firm's profitability. When Ethio Life and General insurance S.C. increase its investment in equities and shares by one percentage level, its profitability will decrease by 0.02 and 0.03 percentage level. Similarly, an attempt of the company to increase its size by one percentage level requires to cost its profit by 0.64 percentage level.

Property investment is usually related to building fixed asset to the company. This capital investment on real property will raise the confidence and credibility of the company. The firm will build a great bargaining power so that to get loan and other running capitals. Therefore, property investment is important to contribute for the rate of return both in the short-run and long-run operations of the firm.

Liquidity preference is one of the determinants of demand for money in the concept of modern economic thoughts. So, when the firm has greater liquidity ability, it can provide credit and premium payments for the needy customers. Taking this in to account, new customers will be going to have purchase insurance services which contributes to the rate of return positively. Increased total liability has also contributed positively to the accelerated rate of return. The rate of return has also positive correlations with the active age of operation.

Investment in equities and shares requires deduction of firm's dividend from the company's return. For the given time period, investments on equity and share have negative impact on the rate of return. This holds true for the case of total asset of the company in which it requires

investment expenditure for the sake of long-run return. Enlarging the size of the company is usually associated with huge investments which requires time to reap its benefit. So, any business decision to raise total asset isn't usually associated with immediate increment of profit.

Generally, it is obvious that the firm should forgone some of its profits if it wishes to invest on equities and shares which enlarges its size. Nevertheless, when the firm invests more in properties using financial capital from borrowers and when it has relatively improved liquidity ratios, its profitability will be enhanced and increased. Similarly, as time goes in the insurance industry, the firm will acquire experiences and there will be learning by doing which improves profitability of the company.

4.5 Post-estimation Tests

Diagnostic tests of multicollinearity, model specification and normality were conducted and declared that the estimation technique has not model specification problem. In order to overcome the problem of heteroskedasticity, the researcher conducted robust regression analysis. For multicollinearity, the variance inflation factor (vif) was used and the value obtained from the test (4.93) indicated that, there is no perfect collinearity among the regressors.

For the model specification, omitted variable test (ovtest) was conducted. The test result indicated that we can't reject the null hypothesis of model has no omitted variable at 5 percent level of significance. Multivariate normality test was conducted using Doornik-Hansen test of normality and according to the result of the test we fail to reject the null of normally distributed at the default 5 percent level of significance.

CHAPTER FIVE
CONCLUSION AND RECOMMENDATIONS

This section summarized the main findings of the study and the relevant recommendations suggested to the concerned parties.

5.1 Conclusion

This research was conducted to identify the impacts of different forms of investment on profitability of insurance companies in Ethiopia with special consideration of Ethio Life and General insurance S.C. The level of profitability is measured using return on asset. After the review of various literatures, the researcher find that it is appropriate to conduct research on the profitability of insurance firms in Ethiopia.

Different areas of investment including equity investment, property investment, investment in share and return from liability were taken as the main determinants of firm profitability. In addition to the explanatory variables, other control variables such as insurance size, age of the firm and liquidity ratio were considered.

Both descriptive and econometrics methods were used to analyze and interpret the data. According to the descriptive statistics, the returns from different investment components has increased overtime though it was affected by the overall economic performance of the country. Correlation analysis was the other estimation conducted before the regression analysis and it suggested that there is less likely of the occurrence of the problem of perfect collinearity among the independent variables individually with the dependent variable.

Multiple linear regression model was developed and used in the econometrics analysis. A regression analysis was conducted using return on asset against the different forms of investment and the aforementioned control variables. According to the result, income received from equity, property, and share investments, and the returns from liability, size, age and liquidity ratio of the firm all have significant impacts to affect profitability, return on asset.

Liquidity ratio of the firm and its return from property investment and liability, and duration of the firm has positive contribution to its profitability. These parameters have positive relation with the return on asset, profitability of Ethio Life and General insurance S.C. However, the

impact of income receipt from investment in share and total equity investment, and insurance size on profitability was obtained as negative and causes firm's profitability to decrease.

Finally, different tests were conducted to check the model fitness and reliability of the research method used in this study. A robust regression was conducted to reduce the problem of heteroskedasticity. Variance inflation factor, omitted variable test and Doornik-Hansen tests were taken to check the problem of multicollinearity, model specification and normality, respectively. These tests confirmed that there is no problem of misspecification of the model in the study.

5.2 Recommendations

According to the result of the study, Ethio Life and General insurance S.C. is recommended;

➢ To invest more on properties and to expand its liabilities for re-investment.

➢ Increasing the liquidity ratio is the other recommendation for the firm to increase its return on asset.

➢ The result also suggested that the return from increased liability has positive and significant effect on profitability.

➢ On the other hand, Ethio Life and General insurance S.C. is recommended to reduce its investment in shares and total equities.

➢ Enlarging the size of the firm from equity and share investment will have negative consequence on profitability, return on asset.

➢ The other important recommendation to the firm is regarding with its active age of operation.
    o Being exist in the market for longer periods of operations enables the firm to enjoy the gain from return on asset.

➢ Taking notes from this financial performance new firms are recommended to join the insurance market.

➢ Lastly, the researcher would like to recommend future researchers to conduct their researches in the financial sector, to be more specific in the insurance sub-sector.
    o On the one hand the sector is growing and the capital market is coming. On the other hand, there are extensive problems in the sector to which should be investigated for better performance of the financial sectors.

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APPENDIXES

Appendix-A; Descriptive statistics

. sum ROA INC PRINV SHINV LIAB SIZE AGE LRATIO

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	10	.0202526	.061543	-.1294041	.0661898
INC	10	1.33e+07	1.19e+07	3010.9	3.00e+07
PRINV	10	1.13e+07	4367883	1499973	1.44e+07
SHINV	10	1.57e+07	9077344	981490	3.29e+07
LIAB	10	2.48e+08	2.01e+08	8765696	5.28e+08
SIZE	10	19.33589	1.079878	17.38435	20.43849
AGE	10	9.5	3.02765	5	14
LRATIO	10	1.969072	.8712627	1.353533	4.047054

.

Appendix-B; Correlation analysis

. cor ROA LNINC LNPRINV LNSHINV LNLIAB SIZE AGE LRATIO
(obs=10)

	ROA	LNINC	LNPRINV	LNSHINV	LNLIAB	SIZE	AGE	LRATIO
ROA	1.0000							
LNINC	0.6161	1.0000						
LNPRINV	0.4395	0.2474	1.0000					
LNSHINV	0.5580	0.4466	0.5243	1.0000				
LNLIAB	0.7410	0.3689	0.4663	0.1121	1.0000			
SIZE	0.4109	0.3557	0.3428	0.2001	0.3971	1.0000		
AGE	0.6547	0.5020	0.2116	0.4951	0.2442	0.2576	1.0000	
LRATIO	-0.5457	-0.5401	-0.2525	-0.5451	-0.4492	-0.3250	-0.3252	1.0000

Appendix-C; Regression Analysis

```
. reg ROA LNINC LNPRINV LNSHINV LNLIAB SIZE AGE LRATIO, robust

Linear regression                               Number of obs    =        10
                                                F(7, 2)          =  84022.49
                                                Prob > F         =    0.0000
                                                R-squared        =    0.9991
                                                Root MSE         =    .00401

                           Robust
        ROA     Coef.    Std. Err.      t     P>|t|    [95% Conf. Interval]

     LNINC    .0147157    .003609     4.08    0.055   -.0008123    .0302438
   LNPRINV   -.0827972   .0128956    -6.42    0.023   -.1382823   -.0273121
   LNSHINV    .0271053   .0038223     7.09    0.019    .0106593    .0435512
    LNLIAB   -.5821462   .1104328    -5.27    0.034     -1.0573   -.1069924
      SIZE    .6351425   .1178048     5.39    0.033    .1282694    1.142016
       AGE   -.0181994   .0021169    -8.60    0.013   -.0273075   -.0090913
    LRATIO   -.2805162   .0403566    -6.95    0.020   -.4541567   -.1068756
     _cons    .0472978   .0675046     0.70    0.556   -.2431511    .3377466
```

.

Appendix-D; Post-estimation tests

i. Multicollinearity test

```
.       vif

    Variable        VIF       1/VIF

     LNLIAB        2.52     0.396825
       SIZE        1.06     0.943396
     LRATIO        2.04     0.490196
    LNPRINV        1.17     0.854700
      LNINC        1.14     0.877192
        AGE        1.05     0.952380
    LNSHINV        1.74     0.574712

    Mean VIF        4.93
```

ii. Model specification/omitted variable test

```
. ovtest

Ramsey RESET test using powers of the fitted values of ROA
     Ho:  model has no omitted variables
               F(3, 2) =      16.94
               Prob > F =      0.6562
```

iii. Normality test

```
Test for multivariate normality


    Doornik-Hansen              chi2(16) =   15.360   Prob>chi2 = 0.4984
```