

***EFFECTS OF FINANCIAL FACTORS ON FINANCIAL
PERFORMANCE OF SELECTED INSURANCE COMPANIES IN
ETHIOPIA***

*A THESIS SUBMITTED TO THE DEPARTMENT OF ACCOUNTING AND
FINANCE IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
AWARD OF MASTER'S DEGREE IN ACCOUNTING AND FINANCE (M.Sc.)*

PREPARED BY: MISGAN MULATIE



JIMMA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

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M.SC. PROGRAM IN ACCOUNTING AND FINANCE

JUNE, 2021

JIMMA, ETHIOPIA

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MAIN ADVISOR: GANFURE T (Asst. Proff.)

CO-ADVISOR: MUNIRA MOHAMMED (MSc)



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Statement of Declaration

I, the undersigned, declare that this thesis entitled “the effects of financial factors on financial performance of selected insurance companies in Ethiopia” in partial fulfillment of the requirement of the Master of Science degree in Accounting and Finance has done with the close guidance and support of my advisors Ganfure Tarekegn (Asst.Proff.) and *Munira Mohammed (M.Sc.)*. It is my original work, has not been presented for award in any other university and all sources of materials used for this thesis have been fully acknowledged.

Name: Misgan Mulatie

Signature _____

Date _____

Certificate

This is to certify that the thesis prepared by Misgan Mulatie entitles “Effect of Financial factors on financial performance of selected insurance companies in Ethiopia”, submitted to Jimma University for the award of master’s degree in accounting and finance (M.Sc.) complies with the regulations of the university and meets the accepted standards with respect to originality and quality.

Therefore, we hereby declare that no part of this thesis has been submitted to any other university or institutions for the award of any degree or diploma.

Main Adviser’s Name

Date

Signature

Co-Advisor’s Name

Date

Signature

Abstract

The purpose of this study was to empirically examine the effects of financial factors on financial performance of 11 purposively selected insurance companies in Ethiopia. Specifically, the study empirically examined the impact of leverage ratio, liquidity ratio, underwriting risk, Premium growth, and size of company, inflation rate, and gross domestic product on financial performance (return on asset) of insurance companies in Ethiopia. Under this study, the researcher used explanatory research design with quantitative approach and panel type of data. The data used in this study were secondary, collected from national bank of Ethiopia. Regarding to the sampling technique the researcher used purposive sampling technique based on the availability of data, year of establishment and operation life of the insurances. Finally, the data were analyzed through the use of descriptive statistics, correlation matrix and multiple linear Regressions model using EView10 software package. Accordingly, random effect regression model was chosen to run the regression. Then the results of random effect regression analysis revealed that liquidity ratio, Premium growth, and gross domestic product have positive and statistically significant effect on the financial performance of Ethiopian insurance companies whereas, company size also has positive effect but statistically insignificant. While other variables like: leverage, underwriting risk, and inflation rate have negative and significant effect on financial performance of Ethiopian insurance companies. Based on the above findings, the researcher recommended the insurance industry in Ethiopia, to give more focus on factors that could increase premium and liquidity ratio and also on factors that decreases leverage and underwriting risk in order to improve their operational and financial performance. Finally the researcher also recommended the managers of Ethiopian insurance companies to prepare themselves for macroeconomic changes by preparing financial plans, provide new product lines and making extensive advertisement that maximizes their market share.

Key words: *financial factors, financial performance, return on asset, insurance company*

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List of acronyms

CS	Company Size
CLRM	Classical Linear Regression Model
GDP	Gross Domestic Product
INF	Inflation
Lev	Financial Leverage
LIQ	Liquidity
LOR	Loss Ratio
MOFED	Ministry of finance and economic development
PG	Premium growth
ROA	Return on Asset
ROE	Return on Equity
ROI	Return on Investment
UR	Underwriting risk
NBE	National Bank of Ethiopia
OLS	Ordinary Least Square
PBIT	Profit before interest and tax

CHAPTER ONE

INTRODUCTION

This chapter of the study discusses the theoretical ground of the study, statements of the problem that the researcher tried to identify, objectives of the study, research questions, significance, Scope, Limitation and finally, the structure of the study

1.1 Background of the Study

In a modern economy, the importance of financial institutions such as Banks, Insurance, saving and credit unions and the likes is unarguable. These institutions play a great role in facilitating and lubricating the economy of nations (Melaku, (2019). Dereje, (2012) stated that financial institutions serve as a medium of exchange and facilitate business activities, support mobilization of resources through savings and allocate resources to activities with highest returns, follow up investments and exert corporate governance, and offer a diversity of financial instruments. They provide various financial services to the community. According to Abate, (2012) current business world without financial institutions such as insurance is unsustainable, in practice some economic units are in surplus whereas the others remain in deficit, in other way risky businesses do not have capacity to retain all types of risk in the uncertain environment.

Abate, (2012) stated that financial institutions such as banks, insurance companies play in insuring economic activity and contribute to the stability of the financial system in particular and the stability of the economy of concerned country in general. According to Naveed et al., (2011) the efficiency of financial intermediation and transfer of risk can affect economic growth while at the same time institutional insolvencies can result in systemic crises which have unfavorable consequences for the economy as a whole.

Having the above, Insurance companies are the one that they play significant role in the service-based economy and their services are now being integrated into wider financial industry. Insurance companies (both private and public) consisting the organizations which provides life, fire, accident, causality and many other forms of insurance services (Melaku, (2019). Haiss, P. and Sumegi, (2008) defines Insurance as a social device, in which a group of individuals (called “Insurds”) transfer risk to

another party (called the “insurer”) in order to combine loss experiences, which statistical prediction of losses and provides for payment of losses from fund contributed (premiums) by all members who transferred risk. Therefore, the current business world without insurance companies is unsustainable because risky businesses have no capacity to retain all types of risk in the current extremely uncertain environment.

According to Melaku, (2019), the insurance industry plays an important role in the economy of most developed and developing countries contributing to economic growth, efficient resource allocation, reduction of transaction costs, creation of liquidity, facilitation of economics of scale in investment, and spread of financial losses. Insurance companies have importance both for businesses and individuals as they indemnify the losses and put them in the same positions as they were before the occurrence of the loss. In addition, insurers provide economic and social benefits in the society that is prevention of losses, reduction in anxiousness, fear and increasing employment. Insurance is a financial product that legally binds the insurance company to pay losses of the policyholder when a specific event occurs. The insurer accepts the risk that the event will occur in exchange for a fee, the premium. The insurer, in turn, may pass on some of that risk to other insurers or reinsurers. Insurance makes possible ventures that would otherwise be prohibitively expensive if one party had to absorb all the risk.

From the above literature reviews it could be understood that the importance and the role that insurance companies play to a society in a modern economy is very crucial. On the other hand, Insurance companies can be reliable and sustainable and to be that they are financially strong. Consequently, they have to be profitable and make sure that they are dependable for policyholders (customers) in particular and the economy in general (Melaku, (2019). According to Tariku, (2019): profitability is one of the most important objectives of financial management since one goal of financial management is to maximize the owners ‘wealth. Profitability is very important measure of performance. A business that is not profitable cannot survive. Conversely, a business that is highly profitable has the ability to reward its owners with a large return on their investment. Hence, the ultimate goal of a business entity is to earn profit in order to make sure the sustainability of the business in prevailing market conditions (Taye, 2018) . Therefore; profitability and the factors affecting profitability of insurers is a great concern for the stakeholders: managers, policy makers, regulators, investors, customers, employees so on and To keep track of this financial soundness and reliability knowing the factors that affect insurers’ performance and identifying them clearly is important job for researchers and financial analysts.

Several empirical studies have been conducted regarding to the effects of factors on performance of insurance companies in different countries at different time as mentioned in the empirical review literature with different conclusions. For instance, (Bhattarai, 2020) in Nepal: (Kinyua, 2018) and (Mazviona,et al., 2017) in Zimbabwe. But those studies with regarding to effects of factors on performance of insurance companies are not conducted in Ethiopia. In Ethiopia limited studies such as (Taye, 2018) in Ethiopia, (Kanbiro & Ayneshet, 2019) in Hawassa city: (Mingizem, 2017) in dire-dawa, Tariku, (2019) and (Kishor & Temesgen, 2020) in Ethiopia examined the effects of factors on performance of insurance companies in Ethiopia. But the research results of many of these researchers regarding to the factors, such as liquidity, leverage, underwriting risk, premium growth, company size, Inflation and gross domestic product were not consistent and still controversial in that they have a negative and positive relationship with the firms of performance. Therefore, clearing this ambiguity is the aim of this research.

Then the objective of this study was to assess the effect of financial factors on financial performance of insurance companies in Ethiopia. In view of the existing concern on the effect of financial factors on the financial performance of insurance companies in Ethiopia, it is found vital to undertake this study because of the above mentioned reason and very little research has been done in this area. The discussion of the financial factors, its different components and its effects on financial performance leads to the problem statement which has analyzed. The problem statement which analyzed in this study was: “how and to what extent the financial factors affect financial performance of insurance companies?”

1.2. Statement of the Problem

A well-functioning financial system is very important for a country's economic growth. The insurance industry is a vital part of the entire financial system and which can play a vital role for economic growth of a country. Their success means the success of the economy; their failure means failure to the economy (Melaku, 2019). Insurance companies have the ability to remedy socioeconomic crashes stemming from the failure of enterprises due to economic disasters in addition to securing funds and reinvesting in the national economy (Haiss and Sumegi, 2008). Such specialized financial services range from the underwriting of risks inherent in economic entities and the mobilization of large amount of funds through premiums for long term investments (Melaku, 2019). The risk absorption role of insurers promotes financial stability in the financial markets and provides a sense of peace to economic entities. A well developed and evolved insurance industry is a boon for economic development as it provides long- term funds for development (Charumathi, 2012).

The insurance industry is expected to be financially solvent and strong as well as should be profitable in operation. At the micro level, profit is the essential prerequisite for the survival, growth and competitiveness of insurance firms and the cheapest source of funds. Without profits, insurers cannot attract outside capital to meet their set of objectives in this ever changing and competitive globalized environment. Profit does not only improve up on insurers' solvency state but it also plays an essential role in persuading policy holders and shareholders to supply funds to insurance firms (Malik, 2011) .

According to Hanna, (2015), Profitability is one of the major objectives of business companies. Besides, profit attracts investors and improves the level of solvency, and thus, strengthens consumers' confidence. It is the 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 and investment performance measures. Profit performance includes the profits measured in monetary terms. It is the difference between the revenues and expenses. These two factors, revenue and expenditure are in turn influenced by firm-specific characteristics, industry features and macroeconomic variables (Mwangi, M. & Murigu, 2015). Therefore; profitability and the factors affecting profitability of insurers is a great concern for the stakeholders: managers, policy makers, regulators, investors, customers, employees so on and To keep the track of this financial soundness and reliability, knowing the factors that affect insurers' performance and identifying them clearly is the important job for researchers and financial analysts.

To address the issue of factors affecting the financial performance of insurance companies several empirical studies have been conducted in different countries at different time as mentioned in the empirical review literature. For instance (Bhattarai, 2020) Examined the variables that influencing profitability of insurance in Nepalese: (Kinyua, 2018) Examined the effect of micro-factors on financial performance of insurance companies in Kenya: (Mazviona,et al., 2017) Examined factors affecting the performance of insurance companies in Zimbabwe. But those studies with regarding to the effect of factors on performance of insurance companies were conducted outside Ethiopia and they did not show the extent and directional effect of factors on financial performance of insurance companies' in Ethiopia.

In Ethiopia several studies have been also conducted to examine the effect of factors on profitability of insurance companies. Even though their result revealed different conclusions, for instance: the studies conducted by (Teklit & Jasmindeep, 2017) indicates that, **leverage** of the insurance companies is positively related with financial performance of insurance company. Whereas, the researchers such as: (Abate, 2012): (Hanna, 2015) Tariku, (2019) and (Kishor & Temesgen, 2020) and Tadese, Abiy & Mengistu, (2020) found the inverse relationship between **leverage** and financial performance of insurance companies in Ethiopia. According to (Kishor & Temesgen, 2020) and (Teklit & Jasmindeep, 2017) **liquidity** of insurance companies has a negative and significant relationship with their profitability. In contrary of this findings (Suheyli, 2016) and (Mazviona,et al., 2017) and Tadese, Abiy & Mengistu, (2020) showed that liquidity ratio has a positive and significant relationship with profitability. Other researches such as, (Taye, 2018): (Kishor & Temesgen, 2020), (Mazviona,et al., 2017): Tariku, (2019): Tadese, Abiy & Mengistu, (2020) and (Mingizem, 2017) all found that **underwriting risk** negatively and significantly affects the profitability of insurance company. In other way the study conducted by (Teklit & Jasmindeep, 2017) found that underwriting risk has insignificant effect on insurance companies profitability.

Tariku, (2019) found that **premium growth** of insurance companies has a positive and significant relationship with insurance companies profitability. In contrast the study conducted by Tadese, Abiy & Mengistu, (2020), concluded that premium growth of insurance companies has a negative and significant relationship with their profitability. On the other hand the study conducted by (Mazviona,et al., 2017) found that **size** of insurance negatively and significantly affects profitability. According to (Teklit & Jasmindeep, 2017), (Suheyli, 2016), Tadese, Abiy & Mengistu, (2020) and (Kishor & Temesgen, 2020) size has positive and significant effects on profitability. According to Tariku, (2019) **inflation** has positive and insignificant relationship with profitability of insurance companies. Against

this the study conducted by (Kanbiro & Ayneshet, 2019) showed that inflation has negative and significant effect on profitability, whereas Behailu, (2016), (Teklit & Jasmindeep, 2017), Tadese, Abiy & Mengistu, (2020) found as inflation rate has negative and insignificant effect on profitability. The study conducted by Behailu, (2016), (Teklit & Jasmindeep, 2017) and Tariku, (2019) concluded that **GDP** has a negative and significant influence on the performance of insurance companies. In contrary to this findings (Kishor & Temesgen, 2020) and Tadese, Abiy & Mengistu, (2020) showed as GDP has a positive impact on profitability of the insurance company.

Therefore as it can be seen from the literature, the research results of many of the researchers regarding to the effect of factors, such as liquidity, leverage, loss ratio, company size, premium growth, Inflation and GDP were not consistent and still controversial in that they have a negative and positive relationship with performance of insurance companies. Therefore, clearing this ambiguity was the aim of this study. Additionally, much of the studies were conducted on non-life insurances sector whereas this study incorporates both the life and non-life insurance companies that operating in Ethiopia.

Then by taking these in to account the researcher was motivated to conduct the study by focusing on the effects of financial factors (liquidity, leverage, loss ratio, company size, premium growth, Inflation and GDP) on financial performance of selected insurance companies in Ethiopia and this study contributed to the existing study by assuring which variables positively and negatively plus which variables significantly and insignificantly affect the financial performance of insurance companies in Ethiopia. Finally this study has filled the above explained knowledge gap by providing information about the above factors which affects the financial performance of insurance companies and through examining the untouched ones.

1.3. Research question

To fill the research gap the researcher developed the following research questions:

- i. What effects the company specific variables (Leverage, Liquidity, Underwriting Risk, premium growth and Company size) have on financial performance of selected insurance companies in Ethiopia?
- ii. What effect the macroeconomic variables (Inflation and Economic growth (GDP) have on the financial performance of selected insurance companies in Ethiopia?
- iii. To what extent the relationship exists between companies' specific, macro-economic variables and the financial performance of selected insurance companies in Ethiopia?

1.4. Research objective

1.4.1. General objective

The general objective of the study was to examine the effects of financial factors on financial performance of eleven purposively selected insurance companies in Ethiopia based on 10 years data from the year 2011 up to 2020.

1.4.2. Specific objective

To achieve the general objective, the following specific objectives were developed:

- I. To examine the effects of company specific variables (Leverage, Liquidity, Underwriting Risk, premium growth and Company size) on the financial performance of insurance companies in Ethiopia
- II. To examine the effects of macroeconomic variables (Inflation and Economic growth (GDP) on the financial performance of insurance companies in Ethiopia.
- III. To examine the extent of relationship that exists between companies specific, macro-economic variables and the financial performance of selected insurance companies in Ethiopia.

1.5. Scope of the Study

The study mainly focused on examining the effect of financial factors on financial performance of insurance companies in Ethiopia. From Eighteen public and private insurance company in Ethiopia which are fully engaged in insurance activities, the scope of the study was limited on eleven purposively selected insurance companies in Ethiopia which have enough experience and complete financial statement for the study period i.e. based on the age and availability of data with an operational life of 10 and above years to examine the effects of financial factors on financial performance of insurance companies in Ethiopia that were registered by NBE before 2011 and by taking evidence from these insurance company in Ethiopia for the period of ten years, from 2011 to 2020. These insurances were selected since they are senior insurance companies and are expected to have more experience on the activities. The study was conducted based explanatory research design with quantitative approach and on secondary data that were collected from the audited financial statements of those insurance companies in Ethiopia. The study covers a panel data of these insurances and regressed by multiple linear regressions model which was specifically run by random effect model.

1.6. Significance of the study

The finding of this study which details on the effect of financial factor on financial performance of purposively selected insurance companies in Ethiopia would have different advantages such as; The paper would have many advantages for all insurance firms' and academicians by identifying and providing useful information about financial factors and how these affect financial performance of insurance companies. The result of the study would contribute to the existing literature by providing evidence on the relation between financial factors and insurance financial performance and it may minimize the literature gap in the area of study particularly in Ethiopia. This study would also have important practical implications for insurance managers and regulatory authorities in dealing with how to control these factors affecting the performance of insurance companies. Moreover, it would also help other researchers as a source of reference and as a stepping stone for those who want to make further study on the issue of factors affecting performance in the Ethiopian insurance context afterwards. Finally, the study would benefit the researcher to obtain new knowledge about the problem under study and give a clear picture about the discipline called research.

1.7. Limitation of the Study

The study was focused on financial related variables only and did not consider the non-financial measure variables such as government regulations, management efficiency and age of the company that may have influence and might need a further investigation. Financial reports within ten years might be affected by different variables in the state of the economy which in turn influence the measurement of the actual effects of financial factors on financial performance of insurance companies. In addition due to accessibility of the required financial information, the researcher was obliged not to include more than the mentioned factor as a study variable.

1.8. Organization of the Paper

The thesis consisted five chapters. Chapter one is introduction, which presents background of the study, statement of the problem, research questions, objective of the study, significance of the study, scope of the study and organization of the paper. Chapter two presents literature review which combines both theoretical and empirical reviews, conclusion of literature and knowledge gap and conceptual framework of the study. Chapter three presents the research methodology contain: - research approach, research design, source and type of data, population, sample and sampling technique, operational definition and measurement, model specification and method of data analysis,

presentation. Chapter four also presents the result collected from the regression output and discussion of regression result. Finally, chapter five presented the summary of the study, conclusions of the results and the recommendations that is implication of the study for policy makers and regulators, practitioners and academicians including directions for further research relating to this study.

CHAPTER TWO

LITERATURE REVIEW

This chapter deals with the theoretical and empirical literature reviews. The theoretical Section includes historical highlights of insurance in Ethiopia, definition and concepts of Insurance, the role of Insurance in the economy, theories of profitability and factors affecting profitability of insurance companies and the empirical Section emphasize the empirical literature review on insurance profitability. Based on the two literature Conclusion and knowledge gap were formulated. Finally the whole reviews literatures were generalized with conceptual framework.

2.1. Theoretical Review

2.1.1. Evolution of Insurance Companies in Ethiopia

The history of insurance service is as far back as modern form of banking service in Ethiopia which was introduced in 1905. At the time, an agreement was reached between Emperor Menelik II and a representative of the British owned National Bank of Egypt to open a new bank in Ethiopia. Similarly, modern insurance service, which were introduced in Ethiopia by foreigners, mark out their origin as far back as 1905 when the bank of Abyssinia began to transact fire and marine insurance as an agent of a foreign insurance company. According to a survey made in 1954, there were nine insurance companies that were providing insurance service in the country. With the exception of Imperial Insurance Company that was established in 1951, all the remaining of the insurance companies were either branches or agents of foreign companies. In 1960, the number of insurance companies increased considerably and reached 33. At that time insurance business like any business undertaking was classified as trade and was administered by the provisions of the commercial code (Hailu, (2009).

According to Hailu, (2009) first significant event that the Ethiopian insurance market observation was the issuance of proclamation No. 281/1970 and this proclamation was issued to provide for the control & regulation of insurance business in Ethiopia. Consequently, it created an insurance council and an insurance controller's office, its strange impact in the sector. The controller of insurance licensed 15 domestic insurance companies, 36 agents, 7 brokers, 3 actuaries & 11 assessors in accordance with the provisions of the proclamation immediately in the year after the issuance of the law.

Accordingly as stated by the office mentioned above, the law required an insurer to be a domestic company whose share capital (fully subscribed) not to be less than Ethiopian Birr 400,000 for a general insurance business, Birr 600,000 in the case of long-term insurance business and Birr 1,000,000 to do both long-term & general insurance business. The proclamation defined 'domestic company' as a share company having its head office in Ethiopia and in the case of a company transacting a general insurance business at least 51% and in the case of a company transacting life insurance business, at least 30% of the paid-up capital must be held by Ethiopian nationals or national companies.

After four years that is after the enactment of the proclamation, the military government that came to power in 1974 put an end to all private enterprises. Then all insurance companies operating were nationalized and from January 1, 1975 onwards the government took over the ownership and control of these companies & merged them into a single unit called Ethiopian Insurance Corporation. In the years following nationalization, Ethiopian Insurance Corporation became the sole operator. After the change in the political environment in 1991, the proclamation for the licensing and supervision of insurance business heralded the beginning of a new era. Immediately after the enactment of the proclamation in the 1994, private insurance companies began to increase (NBE report 2nd quarter, 2016/2017).

2.1.2. Concepts of Insurance and Its Role in the Economy

Insurance is the pooling of fortuitous losses by transfer of such risks to insures, who agree to indemnify insured for such losses, to provide other pecuniary benefits on their occurrence, or to render services connected with the risk (Haiss, P. and Sumegi, 2008). According to the author concepts within the definitions are explained as follows. Pooling is the spread of losses incurred by the few over the entire group, so that in the process, average loss is substituted for actual loss, fortuitous loss is one that is unforeseen and unexpected and occurs as a result of chance. Risk transfer on the other hand means that the pure risk is transferred from the insured to the insurer, who typically is in a stronger financial position to pay the loss than the insured. The other characteristics of insurance are indemnification for loss which means that the insured is restored to his/her approximate financial position prior to the occurrence of the loss (Melaku, 2019).

Insurance is a contract in which the insured transfers risk of potential loss to the insurer who promises to compensate the former upon suffering loss. The insured then pays an agreed fee called a premium in consideration for this promise. The promisor is called insurer and the promisee is called the insured (Haiss, P. and Sumegi, 2008). Insurance premium is the monetary consideration paid by the insured to the insurer for the cover granted by the insurance policy. The Insurer takes on a number of clients (insured) who pay small premiums that form an aggregate fund called the premium fund Norman,

2000(as cited in (Behailu, 2016) . The likelihood of an event or loss may be mathematically calculated or it may be based on the statistical results of past experience in order to determine the amount of premiums that would be required to accumulate a common fund or pool, to meet the losses upon their arising Grose, 1992 (as cited in (Behailu, 2016) . According to (Mwangi & Murigu, 2015) Insurance is a financial product that legally binds the insurance company to pay losses of the policyholder when a specific event occurs. The insurer accepts the risk that the event will occur in exchange for a fee, the premium. The insurer, in turn, may pass on some of that risk to other insurers or reinsurers. Insurance makes possible ventures that would otherwise be prohibitively expensive if one party had to absorb all the risk. Insurance is an important and growing part of financial sector in virtually all developed and developing countries. A resilient and well regulated insurance industry can significantly contribute to economic growth through transfer of risk and mobilization of savings. In addition, it enhances financial system efficiency by reducing transaction cost, creating liquidity, and facilitating economies of scales in investment. The insurance industry is different from other financial services in that its main role is to spread financial loss. Policy- holders buy protection against the occurrence of defined events and insurers set reserves against the estimated total cost of claims. Insurance is founded on probability theory, where the price (insurance premium) is set before knowing the exact cost of the product (insurance contract, or policy). In line with financial stability forum (2000), we can classify insurance in to three major categories (i) life insurance (ii) non-life insurance and (iii) reinsurance.

Life insurance offers a variety of products with different degree of protection and investment components, including pensions, savings, permanent health and term assurance policies. In some developed markets, life insurance offers variety of products functions as contractual savings similar to deposits and in that respect the life insurance industry is concerned with asset accumulation in addition to risk transfer.

Non-life insurance is also called property and casualty insurance, property and liability insurance or general insurance. In buying non-life insurance, the customer is buying financial protection against specific insurable events, such as industrial injury. Policies are typically short-term (one year) indemnity contracts and normally there is no investment element or expectation of financial returns. Nevertheless, the liabilities arising from such contracts can continue for many years (e.g. an industrial injury or disease or a manufacturers liability to customers). Reinsurance is insurance for insurers. Reinsurance protects against peak exposures and the volatility of underwriting results. They provide both expertise and underwriting capacity to the primary market and are often systematically important to the primary insurance market. There exist four broad categories of reinsurance - proportional, non-proportional, facultative, and financial.

2.1.3. Role of insurance in the Economy

As Banks and Security firms, insurance companies are financial intermediaries. It is therefore appropriate to view the insurance sector simply as pass-through mechanisms for diversifying risk, under which the unfortunate few who suffer losses are compensated from funds collected from many policy holders. Insurance is an essential element in the operation of sophisticated national economies throughout the world today (Melaku, 2019). Without insurance coverage, the private commercial sector would be unable to perform their function (Melaku, 2019). (Haiss and Sumegi, 2008) identified several main contribution of insurance for instance, insurance promotes financial stability among households and firms by transferring risks to an entity better equipped to withstand them; it encourages individuals and firms to specialize, create wealth and undertake beneficial projects they would not be otherwise prepared to consider. Malik, (2011) insurance plays a crucial role in fostering commercial and infrastructural businesses. From the latter perspective, it promotes financial and social stability, mobilizes and channels savings, supports trade, commerce and entrepreneurial activity and improves the quality of the lives of individuals and the overall wellbeing in a country. Life insurance companies mobilize savings from the households sector and channel them to corporate and public sectors. The key difference between banks and insurance companies is that the maturity of bank liabilities is generally shorter than that of life insurance companies. This enables life insurers to play a large role in the long-term bond market. At the same time, life insurer's portfolios are typically more equipped than those of banks, which make them less prone to bank liquidity crises (Melaku, 2019).

A strong insurance industry can relieve pressure on government budget to the extent that provide private insurance reduces the demands on government social security programs and life insurance can be an important part of personal retirement planning program (Melaku, 2019).

According to (Melaku, 2019) insurance supports trade, commerce and entrepreneurial activity in general. Many sectors are heavily reliant on insurance; for example, manufacturing, shipping, aviation, the medical, legal, and accounting professions and (increasingly) banking through credit risk transfer. Insurance may actually lower total risk the economy faces since insurers have incentives to measure and manage the risks to which they are exposed, as well as promote risk mitigation activities. A number of empirical studies show evidence that the development of financial intermediaries, including insurance, has a strong correlation with economic growth (Melaku, 2019). (Dereje, 2012) suggests that financial sector can have either a supply- leading or demand following relationship with economic growth. In the supply-leading view, economic growth can be induced through supply of financial services, while in the demand following view; the demand for financial services can induce growth of

financial institutions and their assets. The insurance sector can also contribute to the development of capital markets by making a pool of funds accessible to both borrowers and issuers of securities. This is due to the fact that insurance companies have longer term liabilities than banks. (Dereje, 2012) study the relationship between the development of contractual savings (assets of pension funds and life insurance companies) and capital markets. The insurance industry has traditionally been regarded as a relatively stable segment of the financial system. Considerably lower liquidity of liabilities has prevented contagions run on insurance companies that have been seen in the banking sector. Nevertheless, insurance companies are not necessarily immune to crises particularly when they assimilate banking-type activities and /or have close business relationship with banks, including cross-shareholding, placement of deposits, and credit risk transfer. (Dereje, 2012) define financial crises in general as a situation in which a significant group of financial institutions have liabilities exceeding the market value of their assets, leading to runs and other portfolio shifts, collapse of some financial firms and government interventions.

2.1.4. The concept of profitability

Profitability means the ability to make profit from all the business activities of an organization. It shows how efficiently the management can make profit by using all the resources available in the market. Tadese, Abiy & Mengistu, (2020) profitability is the ability of a given investment to earn a return from its use. The term Profitability however is not synonymous with the term “Efficiency”. Profitability is a measure of efficiency; and is regarded as a measure of efficiency and management guide to greater efficiency. Profitability is one of the most important objectives of financial management because one goal of financial management is to maximize the owner`s wealth and profitability which in turn indicates better financial performance. Though, profitability is an important yardstick for measuring the efficiency, the degree of profitability cannot be taken as a final proof or indicator of efficiency. At times satisfactory profits can mark inefficiency and conversely, a proper degree of efficiency can be accompanied by an absence of profit. Sometimes people use the term Profit and Profitability interchangeably, but in real sense, there is a difference between the two. Profit is an absolute term, whereas, profitability is a relative concept or meaning. However, they are closely related and mutually interdependent, having distinct roles in business. Profit refers to the total income earned by the firm during the specified period of time, while profitability refers to the operating efficiency of the firm. It is the ability of the firm to make profit on sales. It is the ability of firm to get sufficient return on the capital and employees used in the business operation *ibid*.

(Malik, 2011) argued that the performance of insurance companies in financial terms is normally expressed in net premium earned, profitability from underwriting activities, annual turnover, return on investment, return on equity. These measures could be classified as underwriting performance (losses and expenses, which are affected by product pricing, risk selection, claims management, and marketing and administrative expenses) measures and investment performance (which is a function of asset allocation and asset management as well as asset leverage) measures M. Adams, 1999) as cited in (Behailu, 2016). Tadese, Abiy & Mengistu, (2020) suggested that, even if there are different ways to measure profitability, it is better to use ROA. Walsh (1996) as cited in (Behailu, 2016) stated that performance is measured by establishing the relationship between balance sheet and profit and loss statement values. Profit before interest and tax (PBIT) could be measured against total assets or capital employed or net worth. We could do likewise with profit before tax and profit after tax and gives us nine possible measures of performance. However, in most finance literatures profitability is measured by ROA (return on assets) which is defined as the profits before tax divided by total assets. Profit before interest and tax (PBIT) could be measured against total assets or capital employed or net worth. We could do likewise with profit before tax and profit after tax and gives us nine possible measures of performance through extortion, because of its monopoly power in the market.

Profitability consists of two words profit and ability. While the term Profitability is defined as the ability of a given investment to earn a return from its use. Profitability is one of the most important objectives of financial management because one goal of financial management is to maximize the owner`s wealth and profitability which in turn indicates better financial performance (Tariku, (2019). Return on total assets (ROA) looks at the operating efficiency of the total enterprise while return on equity (ROE) considers how that operating efficiency is translated in to benefits to the owners. Return on total assets provides the foundation necessary for company to deliver a good return on equity. A company without a good ROA finds it almost impossible to generate a satisfactory ROE. Therefore this ratio measures how well management uses the assets in the business to generate an operating surplus. Whichever method of calculation is adopted ROA uses three main operating variables of the business, total revenues, total cost, and asset employed. It is therefore the most comprehensive measure of total management performance available to us (Malik, 2011)

Gitman (2006) (as cited in (Behailu, 2016) return on total asset (ROA) often called the return on investment (ROI) measures the overall effectiveness of management in generating profits with in its available assets; the higher the rate the better. (Malik, 2011)stated that profitability ratios measure the earning power of a firm. They measure the management`s ability to control expenses in relation to

sales and reflect a firm's operating performance, riskiness, and leverage. Therefore from the above statements we can infer that return on asset is the safest and comprehensive measure of performance and serves as proxy to insurance companies' performance for this study.

2.1.5. Theories of insurer's profitability

There is no general theory that provides a unifying framework for the study determinant of the insurer's profitability. Because of this, this study tries to view some theories which are nearer to the concept of insurance profitability and its determinants.

2.1.5.1. Modern Portfolio Theory

Modern portfolio theory was developed by Harry Markowitz in 1952. The theory 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. It assists in selecting the most efficient investments by analyzing various possible portfolios of the given securities. By choosing securities that do not move exactly together, MPT model shows investors how to reduce their risk. It is based on expected returns (mean) and the standard deviation (variance) of the various portfolios. MPT attempts to maximize expected portfolio returns for a given amount of portfolio risk, or equivalently minimize risk for a given level of return by carefully choosing the proportions of various assets. It models a portfolio as a weighted combination of assets, so that the return of a portfolio is the weighted combination of the assets return.

Since insurance firms are investments by themselves its standard practice for them to invest in a diversified portfolio to minimize risk and harness the returns of the various investment options on offer. When choosing a portfolio investors should maximize the discounted (or capitalized) value of future returns. Since the future is not known with certainty, it must be expected or anticipated returns which are discounted. Through combining different assets whose returns are not perfectly positively correlated, MPT seeks to reduce the total variance of the portfolio return. MPT also assumes that investors are rational and the markets are efficient.

MPT emphasizes maximizing returns while minimizing risks, while giving recognition to the existence of systematic and non-systematic risks. These concepts are usually referred to when discussing financial investments. Insurance being influenced by risks and returns as well, also finds meaning through MPT. Diversification is the solution against being a victim of concentration risk. Over-reliance on similar assets' profitability and hopes that contingent liabilities do not become actual obligations are risks that can wipe-out risk- portfolios in an instant. Non-systematic risks and alphas are the main items

that give underwriting skills meaning. Non-systematic risks can be eliminated by widening the coverage of insurance over more assureds. In doing so, diversification is achieved.

Alphas, on the other hand, represent the surprise return or inherent profitability of an asset and in converting this concept onto the insurance industry, this is perhaps the inherent characteristics of an insured property and how the hazards and other circumstances are minimized, wherein it is more probable that the premiums paid by the assured will eventually be kept at the end of the insurance policy coverage period. While financial assets are capable of delivering abnormal returns, insurable risks are also able to remain abnormally intact and avoid transforming into real obligations for the insurance company. The fewer obligations an insurance company has, the more the profit they have.

2.1.5.2. Arbitrage Pricing Theory

Arbitrage Pricing Theory (APT) was proposed by Stephen Ross in 1976. APT agrees that though many different specific forces can influence the return of any individual firm, these particular effects tend to cancel out in large and well diversified portfolio. This is the principle of diversification and it has an influence in the field of insurance. An insurance company has no way of knowing whether any particular individual will become sick or will be involved in an accident, but the company is able to accurately predict its losses on a large pool of such risk. However, an insurance company is not entirely free of risk simply because it insures a large number of individuals. Natural disaster or changes in health care can have major influences on insurance losses by simultaneously affecting many claimants. Dereje, (2012) states that insurance companies are corporations and insurance policies can be interpreted as specific types of financial instrument or contingent claim thus it is natural to apply financial models to insurance pricing. The models are designed to estimate the insurance prices that would pertain in a competitive market. Charging a price at least as high as the competitive price (reservation price) increases the market value of the company. Charging a lower price would reduce the company's market value. Thus, financial models and financial prices are among the key items of information that insurers should have at their disposal when making financial decisions about tariff schedules, reinsurance contract terms, etc.

2.1.5.3. Dynamic theory

The dynamic theory of profit was developed by J.B Clark; according to this theory profit accrues because the society is dynamic in nature. When a society is said to be dynamic when there is a change in its population, change in peoples life trend, change in stock of capital ,change in the supply of entrepreneurs etc .since this dynamic nature of the society make future uncertain and any act result of

this has to come in future, involves risk. Thus profit is the price of risk taking and risk bearing. it arises only in a dynamic society which means a society where changes doesn't occur or static by nature the risk element disappear and the profit element does not exist at.

According Clark, profit is the result of an adjustment, which is brought about by the entrepreneurs themselves. In a dynamic economy, if an entrepreneur produces a new thing and creates demand for this product, then he is likely to obtain big profit. But the profit of the entrepreneurs cannot continue to exist for long period. Other entrepreneurs also adopt the innovation and produce similar product this will increase the total output as a result the profit gradually decreases. Thus, we find that the perpetual profits are the result of perpetual new successful innovation. Though, this theory is criticized by ignoring the future uncertainty

2.1.6. Financial factors affecting performance of insurance companies:

According to (Taye, 2018) the factors that affect the financial performance of insurance companies could be divided into three groups, the firm-specific factors, industry-Related factors and macroeconomic factors. The modern portfolio theory highly insight that, the organizational performance is influenced by those internal and industry related factors those related to internal efficiencies and be controlled by management of the companies. The internal factors (firm-specific factors) are always related to internal efficiencies and managerial decisions of the firm and they are controllable by the manager of the firm. In this way, firm-specific financial factors related determinants used in this study includes underwriting risk, financial leverage, liquidity and other variables used in this study. The industry specific variables are related to an external activity to some extent whereas the macroeconomic specific variables are totally related to external factors. The managers cannot change the external related variable immediately like that of firm-specific variables which are controllable. The modern portfolio theory also considers both firm specific and macro-economic related variables. On the other hand, the Arbitrage Pricing Theory considers the external factors affecting profit ability of an organization other than the internal factors. Thus, the macroeconomic factors that can affect organizational profitability include Growth Domestic Product and inflation rate are among variables discussed in the review of literature parts. Furthermore, considering the degree to which those variables affects the insurance company's financial performance and identifying the relationship among those variables was clearly discussed in this research, particularly in Ethiopian insurance industry. The theoretical considerations and empirical examinations of financial performance dominantly highlight company's specific factors, industry specific factors and macroeconomic factors as most important for insurance companies to identify the influence of financial performance (profitability).

2.1.6.1. Leverage

Leverage is the amount of debt used to finance company's assets. A company with significantly more debt than equity is considered to be highly leveraged. Leverage (also called solvency) considers the capital structure of the firm and the evaluation of the relative risk, and return associated with liabilities especially (long term debt) and equity or ownership. Most studies conducted on the effect of leverage on insurance profitability come up with different conclusions for instance, According to (Mazviona, et al., 2017) in Zimbabwe leverage ratio and profitability of the firm have a positive relationship. (Teklit & Jasmindeep, 2017) showed leverage ratio and the profitability of the firm have no statistically significant relationship at all. On the other hand (Abate, 2012), Tariku, (2019) and (Kishor & Temesgen, 2020) come up with different conclusions with the other studies; they concluded Leverage is negatively and significantly related with the performance of the insurance companies. This predicts that the performances of highly levered Ethiopian insurance companies are going to be less profitable and implies equity financing is better than debt financing in Ethiopian insurance companies. The leverage ratio level of the insurance companies affects their profitability negatively, which supports the hypothesis formulated for the study. Thus, from the result it is implied that highly profitable insurance companies are more likely relied on internally generated funds and equity capital than debt capital as the source of financing. This variable is measured by total debt to total equity value of the company.

In finance leverage may be divided into, operating leverage and financial leverage. Business risk depends in part on F. Bringham, 1995 (as cited in (Behailu, 2016) the extent to which a firm's costs are fixed. If fixed cost is high, even a small decline in sales can lead to a large decline in operating profits and ROE. Therefore, other things remain constant, the higher the fixed cost, the higher the business risk. Financial leverage refers to the use of fixed-income securities- debt and preferred stock and financial risk is the additional risk placed on common stock holders as a result of financial leverage. Leverage (also called solvency) considers the capital structure of the firm and the evaluation of the relative risk and return associated with liabilities especially (long term debt) and equity or ownership G. Giroux, 2003 (as cited in (Behailu, 2016) The debt to asset ratio is one of the most fundamental measures in corporate finance. The purpose of this ratio (D/A ratio) is to measure the mix of funds in the balance sheet and to make a comparison between funds that have been supplied by the owners (equity) and those which have been borrowed (debt). When a company raises its debt, it takes commitments to substantial fixed cash out flows for some times in to the future. The inflow may be most uncertain. The fixed cash outflow combined with an uncertain cash inflows give rise to financial

risk. It follows that the greater the loan, the greater the risk. The question is why do companies take this risk. The answer lies in the relative costs. Debt increase both profit and raise the job of the manager to maintain a proper balance between the two. Higher ratio indicates high debt and high amount of interest expense which in turn downs the profit. If the ratio is more than 60%, it is regarded as high, above 100% is very high. Less than 20% could be taken as low. The trade of theory suggests a positive relationship between profitability and leverage ratio and justified by taxes, agency costs and bankruptcy costs push more profitable firms towards higher leverage. Hence more profitable firms should prefer debt financing to get benefit from tax shield. Insurance leverage could be defined as reserves to surplus or debt to equity. The risk of an insurer may increase when it increases its leverage. Literatures in capital structure confirm that a firm's value will increase up to optimum point as leverage increases and then declines if leverage is further increased beyond that optimum level. Higher debt to finance the operation of the firm means that the firm is incurring more debt and brings more financial risk to the company. Besides more interest expense would be incurred in relation with the loan, which in turn reduces the profit of the business.

2.1.6.2. Liquidity

from the context of insurance companies liquidity is the probability of an insurer to pay liabilities which include operating expenses and payments for losses/benefits under insurance policies, when due then shows us that more current assets are held and idle if the ratio becomes more which could be invested in profitable investments. It shows the ability to convert an asset to cash quickly and also reflect the ability of the firm to manage its working capital when kept at normal level. A firm can use liquid assets to finance its activities and investments when external finance is not available or it is too costly (Suheyli, 2016). For an insurer, cash flow (mainly premium and investment income) and liquidation of assets are the main sources of liquidity Renbao Chen and Kie Ann Wong (2004) (as cited in (Abate, 2012). Empirical evidences with regard to the effect of liquidity on insurance profitability revealed almost inconsistent results. For instance, conducted by (Kishor & Temesgen, 2020) concluded that the liquidity of insurance companies has a negative and significant relationship with their profitability. In the contrary to this findings (Kinyua, 2018), (Mazviona, et al., 2017) and (Tadese, Abiy & Mengistu, (2020) showed that liquidity ratio has a positive relationship with profitability. This means when the liquidity of the firm improved the profitability will also improve. In addition the researchers revealed that companies with more liquid assets are less likely to fail because they can realize cash even in very difficult situation. It is therefore expected that insurance companies with more liquid assets will outperform those with less liquid assets.

2.1.6.3. Ratio/underwriting risk

Underwriting risk is a ratio of claims incurred to net earned premium. It is also expressed as loss ratio. It is the risk that the premiums collected will not be sufficient to cover the cost of coverage. (Abate, 2012): Insurance prices are established based on estimates of expected claim costs and the costs to issue and administer the policy. Insurers that undertake risky business and the diversification of underwriting risks help to mitigate exposure to underwriting losses and improve operational profits. (Taye, 2018): (Kishor & Temesgen, 2020), (Mazviona, et al., 2017) and (Mingizem, 2017) all found out that loss ratio negatively and significantly affects profitability. The study conducted by (Teklit & Jasmindeep, 2017), Tariku, (2019) and (Kinyua, 2018) loss ratio has insignificant effect on insurance companies profitability. Hence, the relationship is indifferent in this study.

Loss ratio or underwriting risk generally refers to the risk of loss on underwriting activity in the insurance and securities industries. In insurance, underwriting risk may either arise from an inaccurate assessment of the risks entailed in writing an insurance policy, or from factors wholly out of the control of the insurer/underwriter as a result the policy may cost the insurer much more than it has earned in premiums (www.investopedia.com). The estimates and assumptions used to develop policy pricing may prove to ultimately be inaccurate. This may be due to poor assumptions, changing legal environments, increased longevity, higher than expected weather catastrophes (Suheyli, 2016) Further, there is a positive relationship between claim count growth and changes in loss ratios, suggesting that claim count growth may be a preferred measure of underwriting risk. Underwriting risk as measured by the loss ratio is the claim cost incurred by an insurer to net premium earned. Therefore it may be learned that insurers should be effective enough in estimating their possible claim costs and other administrative expenses in handling the underwriting process and set appropriate price of delivering insurance services. The risk is therefore, if this is not achieved the company would be in a risky position not to cover losses due to insolvency and become loss maker. Therefore the correct assessment of costs, expenses, and premiums are the crucial step to be taken if an insurer is supposed to be profitable.

2.1.6.4. Size of company

It has been suggested that company size is positively related to profitability. The main reasons behind this can be summarized as follows. First, large insurance companies normally have greater capacity for dealing with adverse market fluctuations than small ones. Second, large firms usually can relatively easily recruit able employees with professional knowledge compared with small firms. Third, large insurance companies have economies of scale in terms of the labor cost, which is the most significant production factor for delivering insurance services (Kishor & Temesgen, 2020) and (Tadese, Abiy & Mengistu, (2020). Company size is computed as decimal logarithm of total assets of the insurance company. A positive linkage between company size and its profitability is expected, since larger firms have more resources, a better risk diversification, complex information systems and a better expenses management. The company size can be expressed by many variables such as number of employees, number of branches, or total assets. In most literatures the effect of size on insurance profitability are represented by total asset (Tadese, Abiy & Mengistu, (2020). (Asrat, L. & Tesfahun, 2016) indicated that size is used to capture the fact that larger firms are better placed than smaller firms in harnessing economies of scale in transactions and enjoy a higher level of profits. One of the most important questions underlying bank policy is which size optimizes bank profitability. According to (Asrat & Tesfahun, 2016), the effect of a growing size of a bank on profitability has been proved to be positive to a certain extent. Consequently, a positive relationship is expected between size and profitability by many insurance area researchers. However, for firms that become extremely large, the effect of size could be negative due to bureaucratic and other reasons (Kinyua, 2018). Hence, the size profitability relationship may be expected to be non-linear. Therefore most studies use the real assets in logarithm and their square in order to capture the possible non-linear relationship. As cited in Hanna, (2015) in general, majority of studies indicated that performance of large size insurance companies is better than small size companies. But the size growth should be limited to a certain stage, and that certain stage could be defined based on the ability of the management. If the company size keeps on increasing above the optimal point it is obvious that the increase in insurance's size provides diseconomies of scale, therefore, up to the optimal point increase in size gives the above mentioned advantages to the firm.

Therefore, from the above theoretical discussions it may be inferred that there is a positive relationship between size of a company and profitability as long as the size is manageable and to the optimum level. So size is one of the important factors of insurer's profitability.

2.1.6.5. Premium growth

Premium growth has been reported from related literature that premium growth is another important financial variable that influences the financial performance of insurance companies. Therefore, the growth in premium of the firm has been argued to have influenced on the financial performance of insurance companies and this has been studied frequently. Premium growth as measured by percentage change in total assets or sometimes as percentage change in premium of insurance companies (Abate, (2012). Empirical works came up with different findings. Some studies such as (Charumathi, 2012) and (Tadese, Abiy & Mengistu, (2020) concluded that the insurers with more premium growth will have low profitability due to increased underwriting risk and related provisioning for solvency margin. They further concluded that premium growth has negatively and significantly influenced the profitability of insurers. (Tariku, 2019) and (Abate, (2012) concluded the reverse in that premium growth has positive and significant influence on the performance of insurance companies. Based on their outcome, they argued further that growth in premium improves the profitability of the core operations of insurers and their overall performance. The study conducted by (Kanbiro & Ayneshet, 2019) also Tried to generalize that growth in premium of Ethiopian insurance companies has positive and strong impact on their profit. The sound positive change in premium collection from year to year, improves the profit growth in insurance companies. But, it needs great care of risk management techniques, because as collection in premium increases, the probability of risk bearing of insurance companies also increases with the same direction. Higher premium collection does not necessarily mean that there is always higher profit unless sound risk management techniques applied. In this result, the coefficient is very weak even if it has positive contribution to profitability. This may be due to that amount of premium collected (the insurance penetration rate) in Ethiopian insurance industry is very low as (Charumathi, 2012) stated in their study.

2.1.6.6. Inflation

Inflation is represented by the average annual change in the consumer price index. It plays a role in insurance and has adverse impact on many aspects of insurance operations, such as claims, other expenses and salary expenses. Inflation particularly affects the profitability of insurance products because it alters consumption patterns. Hence, insurance companies may not adequately serve the interests of individuals or business.

According to (Suheyli, 2016) inflation on profitability is statistically significant and negative, suggesting that higher levels of inflation cause higher interest rates and lower bond prices which in turn reduce portfolio returns. (Suheyli, 2016) although they have studied the reason that drives the

development of insurance sector, the development is somehow is related to profitability. They stated on their policy research working paper that inflation is expected to have a negative effect on the demand for life insurance, then after examining both life and non-life premiums over 90 countries during the period 2000 to 2008 and found that insurance activities are significantly hampered in high inflation countries, especially in the life sector. They explain the reason is the value of life policies is significantly eroded by high inflation, triggering a contraction in demand. Behailu, (2016) revealed negative and insignificant relationship between profitability and inflation, suggesting that higher inflationary periods reduce the profitability of firm by leads the insurance company to higher amount of indemnity for the risk occur in the firm.

2.1.6.7. GDP Growth

GDP growth rate is measured by the real annual GDP growth rate, is expected to impress insurance profitability positively. Economic growth can enhance the insurance companies' profitability by increasing income of the individuals i.e. GDP per capita income and then households. Increase in income of individuals, households and businesses will increase the demand for security (the need to be secured against risk in case of life, businesses and other properties in general). Fear of risk or uncertainty initiates to buy an insurance policy by paying premium according to their desire for life, non-life and health insurance to be insured. Therefore, increased in premium will lead to increase in profits of insurance companies assuming that the claims to be paid in normal condition (Tadese, Abiy & Mengistu, (2020).

GDP growth is defined as GDP at the time of t less GDP at the time of t minus one divided by GDP at the time of t minus 1. GDP is one of the primary macroeconomic indicators used to measure the health of the economy of a country, and it is a measure of the overall economic output within a country over a particular time, usually a year. (Teklit & Jasmindeep, 2017) stated that GDP is one of the macroeconomic indicators used to measure the health of the economy of a country, and it is a measure of the overall economic output within a country's borders over a particular time, usually a year. (Kishor & Temesgen, 2020) stated that GDP growth positively affects insurers profitability that is, growth of overall economic activity encourage demand for insurers services and indirectly result in higher insurers income. On the other hand some researches indicated that the relationship between GDP and profitability would be negative Behailu, (2016) and .Growth Rates of GDP = $(GDP(t) - GDP(t - 1)) / GDP(t - 1)$

2.2. Empirical Review literature

Mingizem, (2017) assessed factors affecting profitability of Nile Insurance in Dire Dawa branch. The researcher used descriptive research designs together with primary and secondary data. The result showed that size, leverage, tangibility of asset, loss ratio/ risk, firm growth and managerial efficiency are identified as significant determinants of profitability. Liquidity and age of the company have medium significant determinants of profitability.

Kanbiro & Ayneshet, (2019) investigated the factors affecting financial performance of insurance companies operating in Hawassa city Administration, Ethiopia. In this study, the researchers have employed causal research design with mixed research approach. The researchers used Purposive sampling technique and secondary data source. Ordinary least square model has employed by the researchers to analysis the data through SPSS version 20.0. The finding of the researchers showed that underwriting, premium growth, solvency ratio, growth rate of GDP, and inflation rate have significant effect on financial performance of the insurance companies operating in Hawassa city Administration. Whereas, the reinsurance dependence, company size and interest rate have no significant effect on financial performance of the insurance company of Hawassa city Administration.

Bhattarai, (2020) Examined the variables that influencing profitability of Nepalese insurance companies based on 10 insurance companies panel data for 2012/13 to 2017/18 over five year period. He has been taken Return on Equity (ROE) as profitability measures and as dependent variables. The data has been processing with the help of SPSS 25 Software. The results revealed that expenses ratio other independent variables have positive relationship found. The researcher concluded that the financial leverage and size have major determinants of profitability in Nepalese insurance companies.

Kinyua, (2018) Examined the effect of micro-factors on financial performance of insurance companies in Kenya. He used descriptive research design. The population of the study was 6 listed insurance companies. The researcher used fixed regression model to analysis through. Results of the study revealed positive and no significant effect of liquidity on financial performance of listed insurance companies in Kenya. Secondly, company size had inverse and significant effect on financial performance of listed insurance companies in Kenya. Moreover, retention ratio and claims ratio had inverse and non-significant effect on financial performance of listed insurance companies in Kenya. The researcher concluded that there is need for insurance companies to continuously evaluate their working capital management strategies, asset accumulation strategies, market penetration strategies and claims evaluation strategies

Taye, (2018) Examined the factors which affect the financial performance of Ethiopian Insurance Companies. The researcher applied quantitative approach, explanatory research design and purposive sampling. The researcher used Secondary data collected from 12 insurance companies out of 17 and (NBE) for a period of 2011 to 2016. Descriptive statistics and Random Effect econometric model applied for data analysis. The researcher finding indicated that previous profit performance and volume of capital positively and significantly affects the financial performance but solvency margin and loss ratio have negative association and significant effect. The lag GDP rate and current inflation have positive and significant impact on ROA whereas the lag inflation and exchange rate had negative and significant influence. The researcher recommended that it is better for companies to improve their solvency margin and, the government to stabilize the currency exchange rate

Mazviona,et al., (2017) examined factors affecting the performance of insurance companies in Zimbabwe. They utilized secondary data from twenty short-term insurance companies for the period from 2010 to 2014. Finally they used factor analysis and multiple linear regressions. Their findings revealed that expense ratio, claims ratio and the size of a company significantly affect insurance companies' performance negatively. On the other hand leverage and liquidity affects performance positively. They recommend that insurance companies should introduce a mechanism that reduces operational costs such as automated systems.

Kishor & Temesgen, (2020) examined the association between insurance specific factors and macro-economic factors with the financial performance of insurance companies in Ethiopia. Explanatory analysis with quantitative approach was applied by adopting inferential statistics with a balanced panel data of nine insurance companies for 15 years (2002–2016). They found that GDP per capital and size of the companies demonstrate a positive and significant association, whereas leverage, liquidity, and underwriting risk are negative but significant with returns of assets. They recommended that reduction of underwriting risk by transferring surplus risk to the reinsurers, managing capital structure with minimum dependence on borrowed capital, and deployment of premium earned in return fetching investments speed up the financial performance of insurance companies.

Teklit & Jasmindeep, (2017) identified the key factors that affect profitability of insurance companies in Ethiopia. They used fixed effect model and Panel data covering 10 years period from 2005-06 to 2014-15 for seventeen (17) insurance companies. Results of their regression analysis revealed that size of insurance, capital adequacy, and liquidity ratio and growth rate of GDP were the major factors that significantly affect the profitability of insurance companies. On the other hand, leverage ratio, loss ratio, market share and inflation rate were found to have insignificant effect on insurance companies

profitability. Finally, they suggested that managers of insurance companies as well as the policy makers in the country should take crucial measures by framing policies and strategies that aimed in improving the overall profitability of insurers.

Hanna, (2015) examined internal and external factors affecting insurance companies' profitability in Ethiopia. Profitability is proxied by ROA. Panel data covering the period of 2005 to 2014 are analyzed for nine insurance companies. Multiple linear regression models and fixed effect technique has been applied. The result of their finding showed that from internal factors leverage, firm growth and tangibility of assets are the most significant determinants of profitability of insurance companies in Ethiopia, of which, firm growth has positive impact, on the other hand leverage and tangibility of assets have negative impact on profitability of insurers. From macroeconomic factors, inflation has a negative and significant impact on insurers' profitability. The result also revealed that company size, company age and GDP growth shows positive but insignificant relationship with insurers' profitability. And liquidity has negative and insignificant relationship with insurers' profitability.

Behailu, (2016) examined factors affecting the profitability of insurance companies in Ethiopia. The researcher used quantitative research approach with Panel data covering ten-year period from 2006–2015 for nine insurance companies. He used linear regression model. Data was analyzed with a software Eviws8. The findings of his study showed that Size of company, Loss ratio and leverage have statistically significant relationship with insurers' profitability. However, reinsurance dependence has negative but insignificant relationship with profitability. On the other hand, variables like Motor insurance, market share have positive and statistically insignificant relationship with insurers' profitability. Motor insurance is the other most important factor affecting profitability. In addition; GDP and inflation have negative and insignificant influence on profitability. The researcher recommended that Ethiopian insurance companies should give due consideration to these factors to appropriately address profitability issues.

Tariku, (2019) investigate the most important determinant of profitability in the insurance sector of Ethiopia. This study was based on entirely secondary data collected from NBE and MOFEC which covers the time period from 2003 – 2017. Explanatory research design and fixed effect model were used. The regression result reveals that company age; market share and GDP have significant impact on the profitability of Ethiopian insurance companies measured by both return on asset and return on equity in addition to those three variables premium growth also have positive significant effect on profitability of Ethiopian insurance companies. While other variables included in the research have insignificant effect on profitability of Ethiopian insurance companies measured by both models.

Finally, the study suggests the managers of Ethiopian insurance companies to prepare themselves for macroeconomic changes by preparing financial plans and to provide new product lines and making extensive advertisement that maximizes their market share.

Tadese, Abiy & Mengistu, (2020) examined the factors affecting profitability of insurance companies in Ethiopia for the period of 2014-2018. They employed descriptive research design. The target populations were 17 insurance companies and they have taken all by census method. The researchers employed secondary sources of data from audited financial statement of National bank of Ethiopia. The researchers used multiple regression models which were run by using random effect model through Stata software version 14. The researchers found that the positive and significant relationship between ROA and liquidity, capital adequacy, real GDP as well as real effective exchange rate. Contrary, ROA has negative and significant relation with leverage, underwriting risk, premium growth. Besides, ROA has positive and insignificant relation with age and size whereas negative and insignificant relation with inflation. The researchers recommended as the Insurance industry should give emphasis on liquidity ratio, and capital adequacy ratio to sustain its profitability.

2.3. Conclusion and Knowledge Gap

As clearly shown above in the Empirical review to address the issue of factors affecting the financial performance of insurance companies several empirical studies have been conducted in different countries at different time. For instance (Bhattarai, 2020) in Nepal: (Kinyua, 2018) in Kenya: (Mazviona, et al., 2017) in Zimbabwe conducted their study on the factors affecting the profitability of insurance companies. But those studies with regarding to the effect of factors on performance of insurance companies were conducted outside Ethiopia and they did not show the extent and directional effect of factors on financial performance of insurance companies' in Ethiopia.

In Ethiopia several studies have been conducted to examine the effect of factors on profitability of insurance companies. Even though their result revealed different conclusions, for instance: the studies conducted by (Teklit & Jasmindeep, 2017) indicates that, **leverage** of the insurance companies is positively related with financial performance of insurance company. Whereas, the researchers such as: (Abate, 2012): (Hanna, 2015) Tariku, (2019) and (Kishor & Temesgen, 2020) and Tadese, Abiy & Mengistu, (2020) found the inverse relationship between **leverage** and financial performance of insurance companies in Ethiopia. According to (Kishor & Temesgen, 2020) and (Teklit & Jasmindeep, 2017) **liquidity** of insurance companies has a negative and significant relationship with their profitability. In contrary of this findings (Suheyli, 2016) and (Mazviona, et al., 2017) and Tadese, Abiy

& Mengistu, (2020) showed that liquidity ratio has a positive and significant relationship with profitability. Other researches such as, (Taye, 2018): (Kishor & Temesgen, 2020), (Mazviona, et al., 2017): Tariku, (2019): Tadese, Abiy & Mengistu, (2020) and (Mingizem, 2017) all found that **underwriting risk** negatively and significantly affects the profitability of insurance company. In other way the study conducted by (Teklit & Jasmindeep, 2017) found that underwriting risk has insignificant effect on insurance companies profitability.

Tariku, (2019) found that **premium growth** of insurance companies has a positive and significant relationship with insurance companies profitability. In contrast the study conducted by Tadese, Abiy & Mengistu, (2020), concluded that premium growth of insurance companies has a negative and significant relationship with their profitability. On the other hand the study conducted by (Mazviona, et al., 2017) found that **size** of insurance negatively and significantly affects profitability. According to (Teklit & Jasmindeep, 2017), (Suheyli, 2016), Tadese, Abiy & Mengistu, (2020) and (Kishor & Temesgen, 2020) size has positive and significant effects on profitability. According to Tariku, (2019) **inflation** has positive and insignificant relationship with profitability of insurance companies. Against this the study conducted by (Kanbiro & Ayneshet, 2019) showed that inflation has negative and significant effect on profitability, whereas Behailu, (2016), (Teklit & Jasmindeep, 2017), Tadese, Abiy & Mengistu, (2020) found as inflation rate has negative and insignificant effect on profitability. The study conducted by Behailu, (2016), (Teklit & Jasmindeep, 2017) and Tariku, (2019) concluded that **GDP** has a negative and significant influence on the performance of insurance companies. In contrary to this findings (Kishor & Temesgen, 2020) and Tadese, Abiy & Mengistu, (2020) showed as GDP has a positive impact on profitability of the insurance company.

Therefore as it can be seen from the literature, the research results of many of the researchers regarding to the effect of factors, such as liquidity, leverage, loss ratio, company size, premium growth, Inflation and GDP were not consistent and still controversial in that they have a negative and positive relationship with performance of insurance companies. Therefore, clearing this ambiguity was the aim of this study. Additionally, much of the studies were conducted on non-life insurances sector whereas this study incorporates both the life and non-life insurances company that operating in Ethiopia.

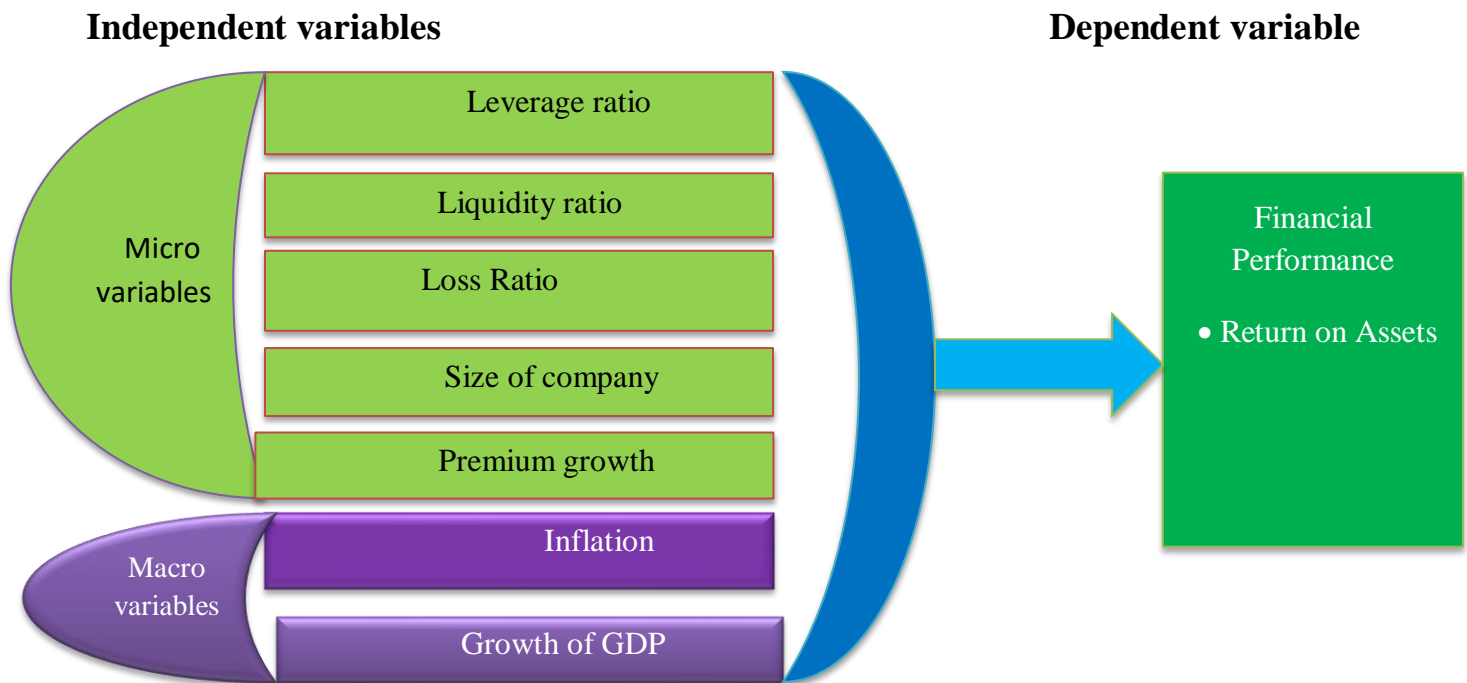
Then by taking these in to account the researcher was motivated to conduct the study by focusng on the effects of financial factors (liquidity, leverage, loss ratio, company size, premium growth, Inflation and GDP) on financial performance of selected insurance companies in Ethiopia and this study contributed to the existing study by assuring which variables positively and negatively plus which variables

significantly and insignificantly affect the financial performance of insurance companies in Ethiopia. Finally this study has filled the above explained knowledge gap by providing information about the above factors which affects the financial performance of insurance companies and through examining the untouched ones.

2.4. Conceptual Framework

A conceptual framework is a diagrammatic presentation of variables, showing the relationship between the independent variables and dependent variable. The study sought to investigate how the independent variables influence the financial performance of insurance firms in Ethiopia. Financial performance is measured using return on assets. Return on assets is the financial ratio that shows the percentage of the net profit in relation to the total assets. The study is conceptualized in a framework in explaining the relationship between the independent variables and the dependent variables as shown in the schematic diagram below

Figure 2. 1. Conceptual Framework



Source: developed by researcher

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

This chapter discussed the methodology that the researcher used in gathering, processing, and translating the collected data into meaningful information. It provides the steps and procedures of the study that used to find out the financial factors affecting the profitability of insurance companies in Ethiopia. This chapter explained the research design, research approaches, population and sample size, sampling technique, data type and source, data collection instrument, data analysis techniques, model specification and variable definitions which encompasses a choice of the dependent variable and independent variables.

3.1. Research Design

Research design refers to the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data. It is a specific outline detailing how your chosen method will be applied to answer a particular research question (Kothari, 2011). To achieve the objective of the study the researcher used explanatory type of research design which helps the researcher to identify and evaluate the causal relationships between different variables under consideration. So that, in the study the explanatory research design would employed to examine the relationship of the stated variables

3.2. Research Approach

There are three approaches that are used in conducting a given research. These are quantitative, qualitative and mixed research approach. Quantitative research is a means for testing objective theories by examining the relationship among variables and it is based on the measurement of quantity or amount. It is applicable to phenomena that can be expressed in terms of quantity. On the other hand, qualitative research approach is a means for exploring and understanding the meaning of individuals or groups ascribe to a social or human problem with intent of developing a theory or pattern inductively. Finally, mixed methods approach is an approach in which the researchers emphasize the research problem and use all approaches available to understand it (Kothari, 2011). In line with the objective of the study under this study the researcher used quantitative research approach for testing objective

theories by examining the relationship among variables and by constructing an empirical model and hypothesizing the linear relationship between dependent and independent variables.

3.3. Sampling design

The target population of the study was all insurance companies registered by the National Bank of Ethiopia (NBE) and operating in Ethiopia. Currently, there are 18 insurance companies in the Ethiopian insurance companies industry. To select sample insurance companies the researcher used purposive sampling technique. In the sample, insurance companies that have enough experience and complete financial statement for the study period were included purposively i.e. based on the age and availability of data for the study period. According to the information obtained from National Bank of Ethiopia there are only 11 insurance companies that have enough experience and complete financial statements for the study period namely Awash, Africa, Ethiopia insurance corporation, Lion, Global, National, Nib, Nile, Nyla, Oromia and United and these 11 insurance companies were selected as a sample from the total insurance companies operating in Ethiopia since they are senior insurance companies and are expected to have more experience on the activities (NBE, 2020).

Table3.1. List of insurance companies

S/N	Name	Establishment Year
1	Abay Insurance Company	2010
2	Africa Insurance Company S.C	1995
3	Awash insurance company S.C	1994
4	Berhan Insurance Company S.C	2011
5	Buna insurance company	2013
6	Ethiopian Insurance Corporation	1995
7	Ethiopia life and general insurance company	2008
8	Global Insurance Company S.C	1997
9	Lion Insurance Company S.C	2007
10	Lucy insurance company	2012
11	National insurance company	1994
12	NIB insurance company	2002
13	Nile insurance company	1995
14	Nyala Insurance company S.C	1995
15	Oromia insurance company	2009
16	Tsehay insurance company	2012
17	The United Insurance S.C	1997
18	Zemen insurance company	2020

Source, NBE, 2021

3.4. Types of data

For this study the researcher used a panel data type which combines both the attributes of cross sectional (inter-firm) and time series data (inter-period). The advantage of panel data analysis is that more reliable estimates of the parameters in the model can be obtained (Gujarat, 2004)

3.5. Source of Data

In line with the objective of the study and type of analysis techniques, the researcher used secondary source of data which is based on the audited annual financial statement of the insurances companies summited to and filed by national bank of Ethiopia.

3.6. Data collection instrument

In order to analyze the effect of financial factors on financial performance of insurance company's secondary source of data were collected from the audited financial statements of the sampled insurance companies and their annual reports submitted to and filed by NBE over a period of ten years from (2011-2020).

3.7. Data Presentation and Analysis Techniques

The collected panel data has been analyzed using descriptive statistics, correlation matrix and multiple linear regression analysis. The descriptive statistics presents an overview of all variables used in the analysis and the mean, minimum, maximum; standard deviations of the variables were also produced for the variables under study for the period 2011 to 2020. The correlation matrix measures the strength or degree of linear association between dependent and independent variables but it has no meaning for describing nonlinear relations.

A multiple linear regression model would be used to determine the relationship between the profitability of insurance companies and the financial factors, such as leverage ratio, Liquidity ratio, premium growth, company size, Loss ratio, inflation and gross domestic product and the model was run by using random effect model through E-views 10 software package. The model was conducted by the ordinary least square (OLS) method. The rationale for choosing OLS is that, if the Classical Linear Regression Model (CLRM) assumptions hold true, then the estimators determined by OLS will have a number of desirable properties (Brooks, 2008). Furthermore, various diagnostic tests such as normality, heteroscedasticity, autocorrelation and multi-collinearity test have been conducted to decide whether the model used in the study was appropriate or not and to fulfill the assumption of classical linear regression model.

3.8. Model Specification

The model adopted for this study was underpinned to the model of financial Factors affecting insurance companies' profitability in Ethiopia: The specification of a model is dependent on the availability of information relevant to the study as embedded in standard theories and other major empirical works(Kothari, 2011). In order to determine the inter-relationship between insurance industry financial performance and its determinants empirical model has been used by (Behailu, 2016) and (Hanna, 2015). Then based on empirical and other inputs the researcher formulated the econometric model which is a representation of the basic features of an economic phenomenon to achieve the broad objective of the study. The nature of data was enabled the researcher to use panel data model which is deemed to have advantages over cross sectional and time series data methodology. Panel data involves

the pooling of observations on the cross-sectional over several time periods (Brooks, 2008). A panel data regression model can be estimated in different ways depending on regression coefficients, and error term.

Accordingly, the fixed effects model, and the random effects model were widely used models in panel data analysis. To choose one of the two Hausman test is used to test or identify appropriate model to be carried out for estimation. On the other hand, it helps in identifying whether fixed effect model is appropriate or random effect model is appropriate. The researcher used Hausman test to select appropriate model and based on Hausman test, the researcher under this study used random effect model.

The multiple linear regression equation which takes into consideration seven independent variables for the 11 insurance companies from 2011 to 2020 period was presented as follows:

$$ROA_{it} = \beta_0 + \beta_1 SIZE_{it} + \beta_2 LV_{it} + \beta_3 LOR_{it} + \beta_4 LQ_{it} + \beta_5 PG_{it} + \beta_6 INF_{it} + \beta_7 GDP_{it} + \varepsilon$$

Where; ROA_{it} = Performance of insurance companies

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7$ = Regression coefficients

β_0 = Constant/Y intercept

- I. Size: company size was measured by total assets in log value
- II. LV: is leverage ratio which was proxy by the ratio of total debt to total asset of the company
- III. LOR = Ratio of claims incurred to net earned premium
- IV. LQ: Liquidity (Current assets divided by current liabilities)
- V. PG: Premium growth = $(GWP(t) - GWP(t-1)) / GWP(t-1)$
- VI. INF; inflation = $(I(t) - I(t-1)) / I(t-1)$
- VII. GDP: Gross domestic product = $(GDP(t) - GDP(t-1)) / GDP(t-1)$
- VIII. ε is error term

3.9. Description of variables and measurements

For this study the researcher focused on the following variables which were selected based on alternative theories and previous empirical studies related to financial factors and firms performance. In accordance with the theory and empirical studies, the dependent and independent variables of the study which the researcher focused were identified in order to examine the effect of financial factors on financial performance of insurance companies.

3.9.1. Dependent variable

The dependent variable is the variable that is the effect or is the result or outcome of other (independent) variables. In this study financial performance (profitability) is taken as dependent variable which can be measured by the ratio of the Return on Equity (ROE), Return on Assets (ROA), and return on investment (ROI). The researcher decided to use ROA as the indicator of financial performance in the regression analysis because ROA is the key ratio for the evaluation of insurances profitability given that ROA is not distorted by high equity multipliers, while ROE disregards the risks associated with high financial leverage (Malik, 2011). As ROA is the most comprehensive accounting measure of a insurances overall performance, many regulators believe return on assets as the best measure of insurance efficiency and it emerges as the key ratio for the evaluation of insurances profitability (IMF, 2002). Return on asset (ROA) is calculated by the ratio between net income and total asset (for ROA)

1. Return on Asset (ROA) - measures the overall efficiency of management. It gives an idea as to how efficient management is at using its assets to generate earnings.

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

3.9.2. Independent variables

This subsection describes the independent variables that are used in the econometric model to estimate the dependent variable. To measure the predictor variables of insurance companies' profitability, seven measures were used as independent variables which were identified by the researcher. The variables are; company size, Leverage, Liquidity, Loss ratio/underwriting risk, premium growth, inflation and GDP.

3.9.2.1. Leverage

Leverage has been considered as a fundamental variable in explaining firm performance. It is seen as an important factor in explaining the financial performance of insurance companies. Leverage is the amount of debt used to finance company's assets. A company with significantly more debt than equity is considered to be highly leveraged. Leverage (also called solvency) considers the capital structure of the firm and the evaluation of the relative risk, and return associated with liabilities especially (long term debt) and equity or ownership. The empirical studies of leverage on insurance companies profitability are inconsistencies; for instance, According to (Mazviona,et al., 2017) in Zimbabwe leverage ratio has positive and significant relationship with profitability of insurance companies.

(Teklit & Jasmindeep, 2017) also found as leverage ratio has positive and insignificant relationship with insurance profitability. On the other hand (Abate, 2012): (Hanna, 2015) Tariku, (2019) and (Kishor & Temesgen, 2020) and (Tadese, Abiy & Mengistu, (2020) come up with different conclusion with the other studies in that they concluded as Leverage is negatively and significantly related with the performance of the insurance companies. This predicts that the performances of highly levered Ethiopian insurance companies are going to be less profitable and implies equity financing is better than debt financing in Ethiopian insurance companies. The leverage ratio level of the insurance companies affects their profitability negatively, which supports the hypothesis formulated for the study. Thus, from the result it is implied that highly profitable insurance companies are more likely relied on internally generated funds and equity capital than debt capital as the source of financing. This variable is measured by total debt to total asset value of the company.

H0. Leverage has a negative and significant effect on financial performance of insurance Companies in Ethiopia.

3.9.2.2. Liquidity

From the context of insurance companies' liquidity is the probability of an insurer to pay liabilities which include operating expenses and payments for losses/benefits under insurance policies. It shows the ability to convert an asset to cash quickly and also reflect the ability of the firm to manage its working capital when kept at normal level. A firm can use liquid assets to finance its activities and investments when external finance is not available or it is too costly (Suheyli, 2016). For an insurer, cash flow (mainly premium and investment income) and liquidation of assets are the main sources of liquidity (Abate, 2012). Empirical evidences with regard to liquidity revealed almost inconsistent results. For instance (Kishor & Temesgen, 2020) and (Teklit & Jasmindeep, 2017) concluded that liquidity of insurance companies has a negative and significant relationship with their profitability. In the contrary to this findings (Kinyua, 2018), (Suheyli, 2016) and (Mazviona, et al., 2017) and Tadese, Abiy & Mengistu, (2020) found that liquidity ratio has a positive and significant relationship with profitability. This means when the liquidity of the firm improved the profitability will also improve. In addition the researchers revealed that companies with more liquid assets are less likely to fail because they can realize cash even in very difficult situation. It is therefore expected that insurance companies with more liquid assets will outperform those with less liquid assets. It is, measured by dividing total current assets to total current liabilities.

H0. Liquidity has a positive and significant effect on financial performance of Insurance Companies in Ethiopia

3.9.2.3. Loss ratio/underwriting risk

Insurance prices are established based on estimates of expected claim costs, the costs to issue and administer the policy. Underwriting risk is concerned on the risk of loss and adverse changes in the value of insurance liabilities which occur due to inadequate pricing, inadequate amount of premium written by the companies and lack of clear determination in their provisioning. It is the risk that the premiums collected will not be sufficient to cover the cost of coverage.(Abate, 2012). Insurers that undertake risky business and the diversification of underwriting risks help to mitigate exposure to underwriting losses and improve operational profits. Several studies have been conducted to examine the effect of underwriting risk on firm profitability. However, the empirical evidences of the linkages were somewhat inconsistent. For instance, (Taye, 2018): (Kishor & Temesgen, 2020), (Mazviona,et al., 2017): Tariku, (2019): Tadese, Abiy & Mengistu, (2020) and (Mingizem, 2017) all found that loss ratio negatively and significantly affects profitability of insurance companies in Ethiopia. In contrast, the study conducted by (Teklit & Jasmindeep, 2017) and (Kinyua, 2018) showed that loss ratio has insignificant effect on insurance companies profitability. It is measured by dividing the claim incurred to the annual premium earned.

H0. Underwriting risk has a negative and significant effect on financial performance of insurance Companies in Ethiopia

3.9.2.4. Premium growth

Premium revenue is the source of revenue for most insurers and it persistent than other revenue sources. Premium growth has been reported from related literature as it is another important financial variable that influences the financial performance of insurance companies. Therefore, the growth in premium of the firm has been argued to have influence on the financial performance of insurance companies and this has been studied frequently. Premium growth as measured by percentage change in total assets or sometimes as percentage change in premium of insurance companies (Abate, (2012). Empirical works came up with different findings regarding to its effect on profitability. For instance the study conducted by Tariku, (2019) found that premium growth of insurance companies has a positive and significant relationship with insurance companies profitability. In contrast the study conducted by Tadese, Abiy & Mengistu, (2020), concluded that premium growth of insurance companies has a negative and significant relationship with their profitability. Premium growth is measured by percentage change in premium of insurance companies = $(GWP (t) - GWP (t-1)) / GWP (t-1)$.

H0. Premium growth has a positive and significant effect on performance of insurance Companies in Ethiopia.

3.9.2.5. Company size

It is found that size is very important determinant of insurer's profitability. It is much harder for smaller companies to write insurance premiums than for bigger ones since smaller company cannot secure their clients in the cases of aggregate uncertainty or big catastrophe event. Larger insurers can achieve operating cost efficiencies through increasing output i.e. they are able to realize economies of scale especially in terms of labor costs, which is the most important factor for delivering insurance services. Several studies have been conducted to examine the effect of size on firm profitability. However, the empirical evidences are somewhat inconsistent. For instance, (Kinyua, 2018) and (Mazviona, et al., 2017) found that size negatively and significantly affects profitability. According to (Teklit & Jasmindeep, 2017), (Suheyli, 2016), Tadese, Abiy & Mengistu, (2020) and (Kishor & Temesgen, 2020) size has positive and significant effects on profitability. The positive relationship between size and ROA implies that size is used to capture the fact that larger insurance companies are better placed than smaller once in harnessing economies of scale in transactions and enjoy a higher level of profits. In different studies different researchers use different measurements of company size such as number of employees and total assets of a company. However, most of the researchers use the log value of total assets as a measure of size in such area. Therefore, for this study company size is measured by total assets in log value.

H0. Company size has positive and significant relationship with financial performance of Insurance Companies in Ethiopia.

3.9.2.6. Inflation

Inflation is a general increase in the pattern of price level of goods and services and occurs when the prices of goods and services increase over time. Inflation cannot be measured by an increase in the cost of one product or service, or even several products or services. Rather, inflation is a general increase in the overall price level of the goods and services in the economy of a particular country; specifically it leads to a fall in the value of money. If one's country inflation rate is significantly increased, the total goods and services of the country will significantly fall (Suheyli, 2016). Inflation itself is unlikely to seriously impact on the performance of insurance companies. Nevertheless, if inflation is significantly greater than expected, it could cause insurance companies financial difficulty. The inflation could affect insurance companies' profitability by influencing both their liabilities and assets. According to Tariku, (2019) inflation has positive and insignificant relationship with profitability of insurance companies. Study conducted by (Kanbiro & Ayneshet, 2019) showed that inflation has negative and

significant effect on profitability, whereas Behailu, (2016), (Teklit & Jasmindeep, 2017), Tadese, Abiy & Mengistu, (2020) found as inflation rate has negative and insignificant effect on profitability . Inflation rates is measured by percentage change = $(I(t) - I(t-1)) / I(t-1)$

H0. Inflation has negative and significant impact on profitability of insurance companies in Ethiopia.

3.9.2.7. Economic growth (GDP)

GDP is one of the primary macroeconomic indicators used to measure the health of the economy of a country, and it is a measure of the overall economic output within a country over a particular time, usually a year. (Teklit & Jasmindeep, 2017) stated that GDP is one of the macroeconomic indicators used to measure the health of the economy of a country and it is a measure of the overall economic output within a country's borders over a particular time, usually a year. Several studies tried to measure the influence of GDP on the insurance companies profitability, for instance, (Hanna, 2015) showed as GDP has positive and insignificant relationship with profitability. But studies conducted by Behailu, (2016), (Teklit & Jasmindeep, 2017) and Tariku, (2019) concluded that GDP has a negative and significant influence on the performance of insurance companies. In the contrary to this findings (Kishor & Temesgen, 2020) and Tadese, Abiy & Mengistu, (2020) showed as GDP has a positive impact on profitability of the insurance companies, which means as GDP increase profitability of insurance companies will also increase. It is measured by percentage change in growth of gross domestic products of the country= $(GDP(t) - GDP(t-1)) / GDP(t-1)$.

H0. Economic growth has positive and significant impact on profitability of insurance companies in Ethiopia.

Table 3.2: Summary of Variables symbols, Measurement and expected results

Variables		Symbol	Measurement	Source	Expected Sign
Dependent Variable	Return on Asset	ROA	Net Profit after tax/ Total assets	Tadese, Abiy & Mengistu, (2020)	NA
Independent Variables	Leverage	LV	Total Debt /Total Asset	Tadese, Abiy & Mengistu, (2020)	-
	Liquidity	LQ	Current Assets / Current Liabilities	Tadese, Abiy & Mengistu, (2020)	+
	Underwriting Risk	UR	Claim incurred/Annual premium earned	Tariku, (2019)	-
	Premium growth	PG	$(GWP(t) - GWP(t-1)) / GWP(t-1)$	Tariku, (2019)	+
	Company size	SIZE	total assets in log value	Tadese, Abiy & Mengistu, (2020)	+
	Inflation	INF	$(I(t) - I(t-1)) / I(t-1)$	Tariku, (2019)	-
	Economic growth(GDP)	GDP	$(GDP(t) - GDP(t-1)) / GDP(t-1)$	Tariku, (2019)	+

Source: Developed by the researcher

CHAPTER FOUR

RESEARCH RESULTS AND DISCUSSION

This chapter focuses on the analysis of the study based on the stated objectives and hypothesis developed. The chapter contains three parts. The first sections deals about descriptive statistics of dependent and independent variables. The second part deals test of CLRM assumptions. The third part present and explains the result of regression outputs regarding to the effect of financial factors on financial performance of insurance companies in Ethiopian.

4.1. Descriptive Statistics

This part concerned on the descriptive statistics of dependent and independent variables used in the study for the sampled insurance companies. The dependent variable used in this study was financial performance which was measured by return on asset and the independent variables were leverage, underwriting risk, premium growth, firm size, liquidity ratio, Inflation rate and gross domestic product. The total observation for dependent and independent variables was 110 (i.e. from the data of eleven insurance companies for the period of 10 year from 2011 to 2020). Therefore, the descriptive statistics below the table showed the mean, maximum, minimum and standard deviation of the study variables.

Table 4.1: The following table shows the descriptive statistics of study variables

	ROA	LV	LQ	UR	PG	SIZE	INF	GDP
Mean	0.075121	0.642781	1.113540	0.659980	0.138000	8.813724	0.125700	0.090600
Median	0.074600	0.640000	1.112150	0.640000	0.155000	8.810000	0.130500	0.094500
Maximum	0.122000	0.925000	1.370000	0.850000	0.900000	9.731000	0.199000	0.104000
Minimum	-0.004700	0.503000	0.800000	0.521000	-0.410000	8.020000	0.074000	0.061000
Std. Dev.	0.026573	0.074160	0.161092	0.089056	0.238254	0.403470	0.041456	0.013768
Observations	110	110	110	110	110	110	110	110

Source: E-Views 10 Output

Based on the table 4.1 above the average values of all variables included in the model were limited within the range of 8.8 to 0.075. The maximum mean value is registered by size of the company where as the minimum value is registered by return on asset. Accordingly the above table indicated that all variables comprised 110 observations

Regarding to the dependent variable, the financial performance measure used in this study was **Return on asset (ROA)**, the minimum value was -0.5% and a maximum value was 12%. That means the most profitable and least profitable insurance companies among the sampled insurance companies earned 12 cents and lost 0.5 cents of net income after tax for a single birr invested in the total assets of the firm respectively. Since ROA indicates the efficiency of the management of a company in generating net profit after tax from all the resources of the institutions, the higher ROA shows that the company is more efficient in using its resources. The mean value of return on asset has 7.5% with the standard deviation is 3%. This showed as ROA deviates from the average value both sides by 3%, which implies the presence of high variations among the values of profitability across the insurance companies. The standard deviation shows the return on asset variation between the selected insurers. In context to this, (Brooks, 2008), indicates that a low standard deviation shows data are very close to the mean, whereas high standard deviation shows that the data are spread out over a large range of values. Therefore, this result indicates that the insurers need to optimize the profit to increase the return on their assets.

As presented in table 4.1 above, the mean value of **leverage ratio** was 64% and its standard deviation was 7.4%. This indicates as the insurers used debt than equity for their financing purpose and also there are great differences among leverage status of the insurance companies that measured by debt to total asset ratio. The minimum value of the leverage ratio was 50% which is financed by global insurance and the maximum value of the leverage ratio was 93% which is financed by national insurance company. This indicates that the highest leveraged insurance companies compared with others was national insurance Company with 93% of the source finance obtained from leverage compared with its equity financing by having an insurance business experience of twenty six years. It implies that there was more debt financing for the company than using equity financing in generating profit over the study period. This action might be due to the existence of quality of the management's and good corporate governance in using debt to increase profit and difficulty for raising more fund through issuing share to the public at large since there is no active stock market for security issuance. This may need care over the future operation of the insurance company because having more debt in the capital structure will have more risk. The lowest leveraged insurance company was global insurance Company

with 0.50. This indicates that there was no great difference between its debt financing and equity financing over the study period.

As presented in table 4.1, the mean value of **liquidity ratio** for Ethiopian insurance companies revealed 1.11. This average liquidity position is less when it is compared with the average international accepted bench mark which is 2:1 ratio. This puts in question the solvency position of the insurance companies in meeting their current liabilities with the current resources they have and its standard deviation was 16%. This implies that deviation in liquidity ratio across the selected insurance companies of Ethiopia was 0.16 from the average mean value of 1.11. This implies that on average the insurance companies have 1.11 cents current assets to pay their every 1 birr current liabilities. The minimum and maximum value for liquidity ratio was 8% and 137% respectively. This implies that the Ethiopian insurance companies those have more liquid asset is more profitable than those insurance companies own less liquid asset. It also indicates the existence of some variation among the liquidity ratio for insurance companies operating in Ethiopia for the study under consideration

Concerning the **underwriting risk** variable, which is measured by claim incurred, divided by annual premium earned; the mean of incurred claims to annual earned premium ratio was 66%. It is to mean that from the net premium collected over the study period; about 66% was paid as a claim to policy holders on average. This may point out that there was more risk on asset on average that resulted from the insurance business to pay more than half of the premium they collected in the form of compensation for the asset or life damaged within these ten years. From this the highly loss incurred by Africa insurance company paid about 85% from its net premium collected. Which implies the insured asset or life highly exposed to risk and the less loss incurred by Ethiopia insurance company paid only about 52% in the same period. This indicates that there is high variation in underwriting risk in Ethiopia insurance industry during the study period of 2011-2020.

As presented in table 4.1, the mean value of **premium growth** (PG) was 14% and the standard deviation was 24%. This implies that on average, the insurance companies' gross premium increased by 14 percent over the study period. The maximum value of premium growth was 0.9 and minimum value of premium growth was -0.41 respectively. This increase and decrease in premium growth for insurance company in a particular year indicates that the existence of unstable premium underwritings over the last 10 years.

The mean of the logarithm of total assets over the period 2011 to 2020 was 8.81. **Size** of insurance companies was highly dispersed from its mean value (i.e. 8.81) with the standard deviation of 0.40. The maximum and minimum values were 9.73 and 8.02 respectively. From this the maximum value of

the size was indicated by the Ethiopian Insurance Corporation (EIC) and the minimum value of the company size was showed by some privately owned insurance companies such as Global and Nice among the sampled insurance companies.

One of the macroeconomic variables employed in this study, **inflation rate** of the country on average over the past ten years was 12.6%. The maximum inflation was recorded in the year 2020 which is 19.9% and the minimum was in the year 2017 it was about 7.4%. The rate of inflation was highly dispersed over the periods under study towards its mean with standard deviation of 4.2 %. This implies that inflation rate in Ethiopia during the study period was somehow unstable which may affect the insurance companies profitability.

Finally, regarding to major macroeconomic factor **GDP**, the mean value of real GDP growth rate was 9.1% and this indicating the average real growth rate of the country's economy over the past 10 years. The maximum growth of the economy was recorded in the year 2011 and 2015 which was about 10.4% and the minimum was in the year 2020 which was 6.1%. The country has been recording double digit decline growth rate with high dispersion towards the average over the period under study with the standard deviation of 1.4%. This indicates that economic growth in Ethiopia during the period of 2011 to 2020 remains unstable.

4.2. Classical Linear Regression Model (CLRM) Assumptions and Diagnostic tests

This section presents the test for the assumptions of classical linear regression model (CLRM) namely, the error have zero mean, heteroskedasticity, autocorrelation, multicollinearity and, normality.

4.2.1. Zero Mean Value of Errors

The first assumption required in the classical linear regression model is that the average value of the errors term is zero. In fact, if a constant term is included in the regression equation, this assumption could never be violated (Brooks, 2008). Hence, a constant term is included in the model of this study to satisfy the first assumption of the classical linear regression model that requires the value of the errors to be zero.

4.2.2. Heteroskedasticity

The homoscedasticity is one of the assumptions of the CLRM which states that the variance of the errors term must be constant. If the errors do not have a constant variance, they are said to be heteroskedastic (Chris B., 2008). If heteroskedasticity occur, the estimators of the ordinary least square methods are inefficient and hypothesis testing is no longer reliable or valid as it will under estimate the

variances and standard errors. White test was used to test heteroskedasticity with null hypothesis that variance of errors is homoscedastic. If the test statistic has a p-value greater than an appropriate threshold ($p > 0.05$) then the heteroscedasticity is not assumed and the null hypothesis of homoscedasticity is failed to reject. Therefore, the hypotheses of the heteroscedasticity test were formulated as follows:

H0: There is No Heteroskedasticity problem in the model.

H1: There is Heteroskedasticity problem in the model.

Decision Rule: Reject H0 if p-value smaller than significance level. Otherwise, do not reject H0.

Table 4.2: Heteroskedasticity test

Heteroskedasticity Test: White

F-statistic	0.957183	Prob. F(35,74)	0.5458
Obs*R-squared	34.28005	Prob. Chi-Square(35)	0.5027
Scaled explained SS	33.73387	Prob. Chi-Square(35)	0.5292

Source: E-Views 10 Output

In this study which was indicated above in table 4.2; the test result presented on both F – statistics and Chi Square were showed that there is no evidence for that there is heteroscedasticity, because the result in the P value is more than 0.05. Therefore, the result of this test was statistically insignificant indicating not existence of heteroscedasticity

4.2.3. Autocorrelation

This assumption states that the covariance between the error terms over time is zero. According to (Brooks, 2008). It is assumed that the errors are uncorrelated with one another. If the error is not uncorrelated with one another, it would be stated that they are auto-correlated or they are serially correlated. To check the presence of autocorrelation in this study, the researcher used Breusch-Godfrey test, which allow the examination of the relationship between error terms. Under this, If the test statistic has a p-value greater than an appropriate threshold ($p > 0.05$) then the autocorrelation is not assumed and the null hypothesis of no autocorrelation is failed to reject Therefore, to test it, the hypotheses of the autocorrelation test were formulated as follows:

H0: There is no autocorrelation problem in the model

H1: There is autocorrelation in the model. $\alpha = 0.05$

Decision Rule: Reject H0 if p-value less than threshold significant level. Otherwise, do not reject H0

Table 4.3 Result of Autocorrelation Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.113118	Prob. F(2,100)	0.3326
Obs*R-squared	2.395530	Prob. Chi-Square(2)	0.3019

Source: E-Views 10 Output

As it can be seen from the table 4.3 above both versions (X2 and F-statistics) of the test were greater than the significant value, in this case, the null hypothesis of no autocorrelation should be not-rejected since the P-value are greater than 0.05.

4.2.4. Multicollinearity

Multicollinearity means there is a linear relationship between the explanatory variables which may cause the regression model biased (Gujarat, 2004). There are two classes of multicollinearity these are; perfect and near multicollinearity. Perfect multicollinearity occurs when there is an exact relationship between two or more variables and this causes a difficulty in explaining which independent variables are affecting the dependent variables. In addition to this If multicollinearity is perfect, the regression coefficients of the explanatory variables are indeterminate and their standard errors are infinite. The second one is much more likely to occur in practice and would arise when there was a non-negligible, but not perfect, relationship between the two independent variables. Then, the simplest method to investigate the existence of multicollinearity problem is looking at the matrix of correlations between individual variables. According to (Gujarat, 2004) multicollinearity could only be a problem if the pair-wise correlation coefficient among regressors is above 0.80

Table 4.4: Multicollinearity test by correlation coefficient

Correlation	LV	LQ	UR	PG	SIZE	INF	GDP
LV	1.000000						
LQ	-0.184997	1.000000					
UR	0.354605	-0.501147	1.000000				
PG	0.110037	0.051588	-0.290497	1.000000			
SIZE	-0.266417	0.020178	-0.103548	-0.046366	1.000000		
INF	0.102963	-0.008290	-0.018108	0.186757	0.027088	1.000000	
GDP	0.100141	0.017930	0.082829	0.011612	-0.389356	-0.552024	1.000000

Source: E-Views 10 Output

Table 4.4 above showed that there is no strong pair-wise correlation between the explanatory variables (LV, LQ, UR, PG, SIZE, INF and GDP). In this study the highest correlation coefficient was -0.552024 between GDP and INF. Thus, it can be concluded that using the rule of (Gujarat, 2004), all variables have low correlation power which is below 0.80. This implies no multicollinearity problem in the explanatory variables of this study.

4.2.5. Normality test

The normality test for this study is shown in figure 4.1 below. If the residuals are normally distributed, the histogram would be bell-shaped and the Bera-Jarque statistic would not be significant meaning disturbance to be normally distributed around the mean. This means that the p-value given at the bottom of the normality test screen should be bigger than 0.05 to not reject the null hypothesis of normality at the 5% significance level. A normal distribution is not skewed and is defined to have a coefficient of kurtosis of 3 (Chris B., 2008).

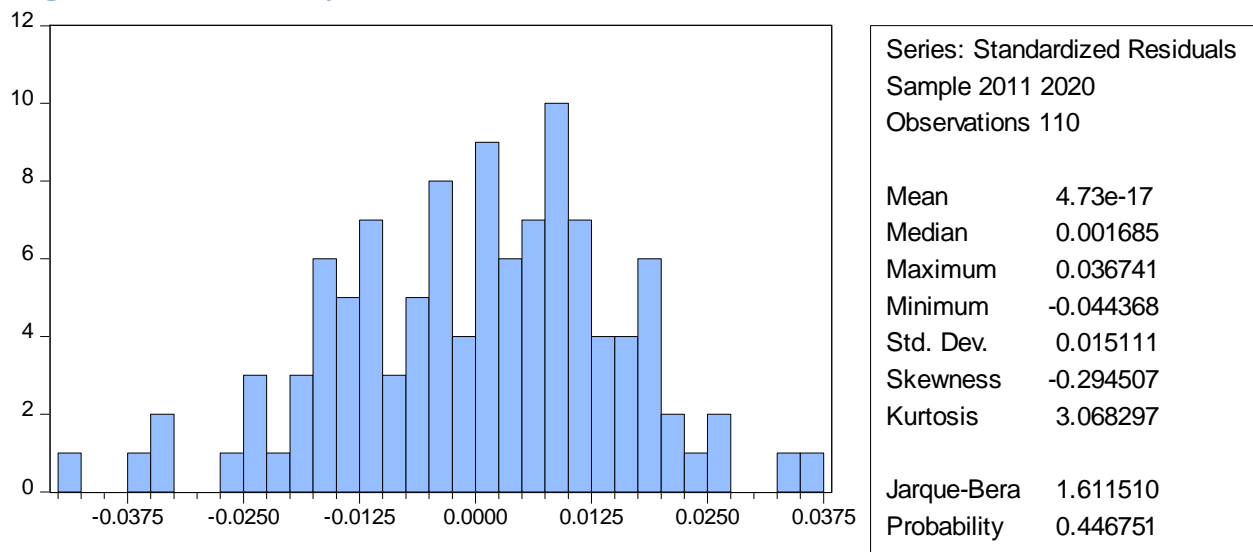
The hypothesis for the normality test were formulated as follow

H0: Error term is normally distributed

H1: the error term is not normally distributed

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

Figure 4.1. Normality test for ROA model



Source: E-Views 10 Output

As it can be seen from the figure 4.1 above the residual is normally distributed. Because the p-value of the test is greater than 0.05 and its kurtosis value is 3. In this case, the null hypothesis of Error term is normally distributed should be not-rejected since the P-value is greater than 0.05.

4.2.6. Model Selection and specification

To achieve an overall objective of the study, the researcher employed panel data model techniques. A panel data regression model can be estimated in different ways depending on regression coefficients, and error term. Accordingly, the fixed effects model, and the random effects model were widely used models in panel data analysis.

(Gujarat, 2004) noted that if the number of time series data (T) is large and the number of cross-sectional units (N) is small, there is a likely to be little difference in the values of the parameters which estimated by fixed effect model and random effect model.

According to (Brooks, 2008), a panel estimator approaches that can be applied for the researches such as fixed effects models and random effects models. The random effect model is always allowing the heterogeneity or individuality among the selected companies by allowing its own intercept value. It is time invariant in nature but show different value from one company to another; whereas the fixed effect model has common mean value for the intercept which is time variant. In order to make choice among random and fixed effect model, the researcher make the decision value which provided as “if statistically significant P-value from the Hausmann test is more significant only at 5% significance level, the fixed effect model is preferred instead of random effect, otherwise the random effect model is preferable.” The rationale behind is that, the p-value for Hausmann test is greater than 5%, indicating that the random effects model is appropriate.

According to Hausmann the researcher can choose between fixed effects and random effects models by running the Hausmann specification test at 5% significance levels. Therefore, even if there are different tests used to select the model, under this study the researcher used Hausman test to select appropriate model. Since, the Hausman test is used to test or identify appropriate model to be carried out for estimation. On the other hand, it helps in identifying whether fixed effect model is appropriate or random effect model is appropriate. Based on this the Hausmann test hypotheses were formulated as follows;

H0: Random effect model is appropriate

H1: Fixed effect model is appropriate. $\alpha = 0.05$

Decision Rule: Reject H0 if p-value less than significant level. Otherwise, do not reject H0

Table 4.5 Hausmann tests of either fixed or random

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	7	1.0000

Source: E-Views 10 Output

The above table 4.5 shows that, Hausman test has a P-value of 1.0000 which is more than 0.05 (5%) level of significance. The conclusion from the above Hausman test result was that the null hypothesis of the random effect would not reject. This implies that for this study random effect was more appropriate than fixed effect.

4.3. Regression result and analysis

This section presents the overall results of the regression analysis on the effect of financial factors on financial performance of Ethiopian insurance companies. In this study ROA was used as proxy for profitability measure.

Table 4.6 below shows the regression analysis. In this regression analysis the dependent variable was ROA while the independent variables were company size, leverage, liquidity, premium growth, underwriting risk, growth rate of GDP and inflation. Under the following regression output, it is common to find the beta coefficient to be negative or positive. The beta value indicates that each variable's level of influence on the dependent variables. The P-value indicates at what percent or precision level of each variable is significant. The R-squared value measures how well the regression model explains the actual variations in the dependent variables (Brooks, 2008).

Table 4.6: Regression result

Dependent Variable: ROA

Method: Panel EGLS (Cross-section random effects)

Date: 05/19/21 Time: 08:10

Sample: 2011 2020

Periods included: 10

Cross-sections included: 11

Total panel (balanced) observations: 110

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LV	-0.074506	0.024645	-3.023144	0.0032
LQ	0.049660	0.010951	4.534911	0.0000
UR	-0.128201	0.021701	-5.907638	0.0000
PG	0.024332	0.006523	3.729931	0.0003
SIZE	0.000542	0.004925	0.110016	0.9126
INF	-0.109461	0.043213	-2.533059	0.0128
GDP	0.335605	0.143575	2.337493	0.0214
C	0.127543	0.060562	2.105983	0.0377

Effects Specification

	S.D.	Rho
Cross-section random	0.004449	0.0883
Idiosyncratic random	0.014295	0.9117

Weighted Statistics

R-squared	0.653035	Mean dependent var	0.053543
Adjusted R-squared	0.629223	S.D. dependent var	0.024340
S.E. of regression	0.014821	Sum squared resid	0.022406
F-statistic	27.42535	Durbin-Watson stat	1.764970
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.676654	Mean dependent var	0.075121
Sum squared resid	0.024888	Durbin-Watson stat	1.588970

Source: E-Views 10 Output

Significant level presented at 1% and 5% significance level respectively.

The linear function for the study regression equation is denoted as below:

$$\text{ROA} = 0.128 - 0.075 \cdot \text{LV} + 0.0497 \cdot \text{LQ} - 0.128 \cdot \text{UR} + 0.024 \cdot \text{PG} + 0.000542 \cdot \text{SIZE} - 0.1095 \cdot \text{INF} + 0.336 \cdot \text{GDP} + [\text{CX}=\text{R}]$$

As it can be seen from the table 4.6 above the explanatory variables such as: leverage, liquidity, underwriting risk, premium growth, inflation rate and GDP have lower than 5% significance level influence on financial performance of insurance companies. In Contra Company size has no statistical significance impact on financial performance of sampled insurance companies measured by Return on asset with above 10% significance level. The values of R square and adjusted R square were 0.653 and 0.629 respectively. This is an indication that the model is a good fit. The R-squared value 0.653 (65.3 %) implies that 65.3% of fitness can be observed in the sample regression line. This can be further explained as 65.3% of the total variation in ROA is explained by the independent variables. The remaining 34.7% of the change is explained by other factors which were not included in the model. The F- statistic of 27.43 with P- value of zero is also significant, suggesting that variations in the dependent variable are well enough explained by the regression in the model. This implies that the overall model is highly significant and that all the independent variables except company size are jointly significant in causing variation in return on asset at lower than 1% and 5% significance level.

4.3.1. Leverage and financial performance (Return on asset)

Leverage measures the degree to which a business is utilizing debt fund. Financing with debt funds is sometimes advantageous to the shareholders return on their investment by making use of tax benefits associated with the borrowed funds. And it is measured by debt ratio (LV).

As indicated in the table 4.6 above, the coefficient of leverage ratio was negative (-0.074506) and statistically significant with p-value of 0.0032 which is lower than 0.01. The negative result showed that the inverse relationship between leverage and ROA. This means, if leverage increase by 1%, then the return on asset will decrease by 7.5% with the relationship statistically significant at lower than 1 % of significance level. To support this theory of capital structure tells us that the insurance companies with lower leverage will generally report higher ROA and the reverse is true. Then based on this the researcher accepts the null hypothesis that there is

negative and significant relationship between leverage and ROA. This means, there is sufficient evidence that support the negative relationship between leverage and ROA. This negative relationship is expected and consistence with some previous studies, for instance (Abate, 2012) : (Tariku, (2019) , (Kishor & Temesgen, 2020) and Tadesse, Abiy & Mengistu, (2020) found a negative relationship between leverage and ROA. This shows higher the insurance companies assets financed through debt the lower will be its return on asset. But this finding is against with some previous studies, for instance a study conducted by (Mazviona,et al., 2017) showed that the positive and significant relationship between leverage and financial performance of insurance companies. Totally according to this study, the researcher concluded that when company's assets more financed with leverage made the company performance low that might be due to lower the capital required for an insurer to operate business and made lower market value thereby reducing the firm's profit and leading to solvency problem and the reverse is true. Companies that are highly leveraged may be at risk of bankruptcy if they were unable to make payments on their debt and unable to find new lenders in the future.

4.3.2. Liquidity and financial performance (Return on asset)

Liquidity is measured by Current Ratio (CR) and it shows the capacity of an insurance company to pay their short term liabilities to policyholders and other creditors without having liquidate financial assets when they due. Good liquidity helps an insurance industry to meet the need of policyholder's obligations punctually. A high degree of liquidity enhances an insurer to meet the unexpected loss or cash requirements without untimely sale of investments which may cause losses due to temporary market conditions.

The above table showed that, the coefficient of liquidity measured by current assets to current liability was 0.049660 and its P-value is 0.0000. Holding other independent variables constant at their average value and when liquidity increased by 1%, return on asset (ROA) of sampled Ethiopian insurance companies would increase by 4.96% with the relationship statistically very significant at lower than 1 % of significance level. In other words, there is significant positive relationship between liquidity and return on asset (ROA) of sampled Ethiopian insurance companies. Therefore, based on this the researcher accepts the null hypothesis that there is positive and significant relationship between liquidity and ROA. This means, there is sufficient

evidence that support the positive relationship between liquidity and ROA. This positive relationship is expected and consistence with previous studies which found a positive relationship between liquidity and ROA, for instance, (Kinyua, 2018), (Suheyli, 2016) (Mazviona,et al., 2017) and Tadese, Abiy & Mengistu, (2020) found the positive relationship between liquidity and ROA. In contrary, the study conducted by (Kishor & Temesgen, 2020) found that a negative and significant relationship between liquidity and financial performance of insurance companies. Based on the regression output of this study, the researcher concluded that, the increment of liquidity ratio increases the profitability of insurance companies in Ethiopia and it enhance the insurer's ability to settle their current obligations without selling their long term investments or to borrow money.

4.3.3. Premium growth and financial performance (Return on asset)

As presented in table 4.6 the coefficient of premium growth is 0.024332 with the p-value of 0.0003, which is lower than at 1% significance level. The results of the regression model showed that there is a positive and statistically very significant relationship between premium growth and financial performance (ROA) of sampled Ethiopian insurance companies. The positive coefficient of premium growth indicates as there is a direct relationship between growth of premium and ROA. It implies that Insurance companies underwrite more premium over the years have better chance of being profitable for the reason that they gain return from premium collected and when there is excessive attention on marketing to grow premiums with a proportionate allocation of resources towards the management of their investment portfolios is given. Then based on this the researcher accepts the null hypothesis that there is positive and significant relationship between leverage and ROA. This means, there is sufficient evidence that support the positive relationship between premium growth and ROA. This positive relationship is consistence with previous studies, for instance Tariku, (2019) reveled that a positive and significant relationship between premium growth and financial performance of insurance companies. But the finding is against the finding of Tadese, Abiy & Mengistu, (2020) in that there is negative and significant relationship between premium growth and financial performance of insurance companies. Regarding to this, the researcher concluded that premium growth has positive and significant effect on profitability of insurance companies in Ethiopia

since; insurers with more premium growth would have high profitability if they improving their underwriting performance through techniques like product selections, increase claims handling practice, detailing subject matter of insurance before agreement with the insured, accurately estimate the future claims or losses and expenses and finally through correctly price the insurance contracts provided by their companies

4.3.4. Underwriting risk and financial performance (Return on asset)

As indicated in table 4.6 above, the coefficient of underwriting risk is -0.128201 with the p-value of 0.0000, which is lower than at 1% significance level. The results of the model indicated that the negative and statistically significant relationship between underwriting risk and financial performance (ROA) of sampled insurance companies in Ethiopia. This means that when underwriting risk is increase by 1%, the return on asset will decrease by 12.8% with the relationship statistically very significant at lower than 1 % of significance level. Then based on this the researcher accepts the null hypothesis that there is negative and significant relationship between underwriting risk and ROA. This means, there is sufficient evidence that support the negative relationship between underwriting risk and ROA. Therefore this result is in accordance with the result expected by the researcher and consistent with some previous studies. For instance, (Taye, 2018): Tadese, Abiy & Mengistu, (2020): (Kishor & Temesgen, 2020), (Mazviona, et al., 2017): Tariku, (2019) and (Mingizem, 2017) found that the negative and significant relationship between profitability and underwriting risk. In contra the finding is against the finding of (Teklit & Jasmindeep, 2017) and (Kinyua, 2018) in that there is insignificant relationship between underwriting risk and financial performance of insurance companies. Based on the regression result of this study, the researcher concluded that the existence of negative and significant relationship between underwriting risk and ROA. Regarding to this, the high claim ratios indicates premium rate are too low, for a given level of risk and companies" profitability will be endangered, because higher underwriting risk leads the insurers to pay higher unexpected payments or expenses, whereas the low claim ratio indicates an insurers are underwriting profitable business.

4.3.5. Company size and financial performance (Return on asset)

As presented in table 4.6 the coefficient of Company size is 0.000542 with the p-value of 0.9126, which is higher than at 10% significance level. The regression result of this study showed that the variable size is positively related to profitability and statistically insignificant at higher than 10% level of significance. This indicates that profitability of large insurance companies is better than small size companies. Profitability is likely to increase in size, because large insurance companies normally have greater capacity for dealing with adverse market fluctuations than small insurance companies and have more economies of scale in terms of the unit cost, which is the most significant production factor for delivering insurance services, complex information systems and a better expenses management. The finding of this study is consistent with (Abate, 2012), (Suheyli, 2016), Tadese, Abiy & Mengistu, (2020) and (Kishor & Temesgen, 2020) in that they found that large size enables the firm to effectively diversify their assumed risks and respond more quickly to changes in market conditions. An increase in total assets such as the establishment of more branches and the adoption of new technologies enables an insurer to underwrite more policies which may increase the underwriting profit and the total net profit. Hence, this study supports the hypothesis that size of the insurance is positive determinant of insurer's financial performance in Ethiopia but it does not support its significances. Even though the finding is inconsistency with some previous studies, for instance (Kinyua, 2018) and (Mazviona, et al., 2017) found that size has a negative and significantly effects on profitability because of its difficulty to manage larger company efficiently and effectively.

4.3.6. Inflation and financial performance (Return on asset)

Inflation is described to changes in the overall level of prices within the economy and it's measured by the growth in selling price of products in the country. Inflation affects insurance companies' profitability through influencing both their liabilities and assets. Inflation increases, claim payments increases and consequently reduce technical result and profitability.

As presented in table 4.6 the coefficient of inflation rate is -0.109461 with the p-value of 0.0128, which is lower than at 5% significance level. The results of the regression model show that there is a negative and statistically significant relationship between inflation and financial performance (ROA) of sampled insurance companies. Mean that when inflation increased by one percent, the

return on asset would be decreased by 10.9%. The result of this study is then in line with the finding of the previous studies conducted by (Kanbiro & Ayneshet, 2019) in that inflation is negatively and significantly related to the financial performance of insurance companies in Ethiopia. In contrary, some of the previous study conducted by Tariku, (2019) and (Teklit & Jasmindeep, 2017) found that positive and significant relationship between inflation rate and financial performance of insurance companies. Totally based on the above result, the researcher concluded that inflation has negative and significant effect on profitability of insurance companies due to it has reducing effect on the demand and willingness of citizens to purchase insurance goods and service by reducing their purchasing power on luxury products and finally by reducing the solvency of the firm.

4.3.7. Gross Domestic Product and financial performance (Return on asset)

Gross Domestic Product is the total value of goods produced and services provided in a country during a year and it is measured by the growth in gross domestic products of the country.

As presented in table 4.6 above, the coefficient of Gross Domestic Product is 0.335605 with the p-value of 0.0214, which is lower than at 5% significance level. It is interpreted as, when Gross Domestic Product increased by one percent, the return on asset of sampled insurance companies would be increased by 33.6% with the relationship statistically significant at lower than 5 % of significance level. This shows that there is a positive and statistically significant relationship between Gross Domestic Product and financial performance (ROA) of sampled insurance companies in Ethiopia. The higher the growth rate of the country also the higher will be the insurance industries performance. The result of regression output in this study is then consistent with some of the previous studies. For instance, (Kishor & Temesgen, 2020) and Tadese, Abiy & Mengistu, (2020) stated that GDP has positive coefficient and statistically significant with the profitability which measured by ROA. But in contra the finding is against the finding of some previous studies. For instance Behailu, (2016) and Tariku, (2019) found a negative relationship between economic growth and ROA. Then based on this result the researcher concluded when the economy of the country increased, the society demand and wants increased towards insurance product and services which maximizes the profitability of the insurance industries

Table 4.7: Summary and comparison of expected hypothesis result and actual hypothesis result and its significant test

Independent variables	Expected hypothesis Result	Actual hypothesis result	Status of hypothesis result	Dependent variable
LV	Negative & Significant	Negative & Significant	Accepted	ROA
LQ	Positive & Significant	Positive & Significant	Accepted	
UR	Negative & Significant	Negative & Significant	Accepted	
PG	Positive & Significant	Positive & Significant	Accepted	
SIZE	Positive & Significant	Positive & insignificant	Failed Accept	
INF	Negative & Significant	Negative & Significant	Accepted	
GDP	Positive & Significant	Positive & Significant	Accepted	

Source: - Developed by the researcher.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Based on the finding of the study summary and conclusions were drawn and possible recommendations were forwarded. Accordingly, the first section presents the summary and conclusion part and the second section present the possible recommendations.

5.1. Summary

The main objective of this study was to examine the effect of financial factors on financial performance of insurance companies in Ethiopia by considering both internal and external factors. Internal factors are factors that are under the control of insurance companies' management and also called company specific factors. Those factors include leverage, liquidity, premium growth, underwriting risk and company size. Furthermore, external factors represent events outside the control of insurance companies such as growth rate of GDP and inflation. In this study ROA measures the financial performance of insurance companies in Ethiopia.

The empirical analysis of examining the effect of financial factors on financial performance of insurance companies in Ethiopia was conducted using a panel data set consisting of financial data of eleven insurers over the period of 2011 to 2020, which were analyzed using descriptive statistics, and multiple linear regression analysis. The analyses were made in line with the specific research objectives and stated hypotheses formulated in the study. Data used for the insurance specific factors were obtained from each insurance company audited financial reports from NBE, whereas data of external factors were obtained from NBE. Before making regression analysis, the study goes through all diagnostic tests, including the errors have zero mean, multicollinearity, heteroscedasticity; normality and autocorrelation were made for the classical linear regression model by using E-views 10 software. Regression Analysis was identified as the most appropriate tool for econometric analysis of the data. The assumptions needed to be fulfilled for OLS were tested and found to be homoscedastic, free of autocorrelation, free of Multi-collinearity and normally distributed.

In relation to the regression result measured by ROA; liquidity, premium growth, and gross-domestic products have positive and significant impact on the financial performance of Ethiopian

insurance companies but company size has positive and insignificant effect , on the other hand leverage, underwriting risk and inflation have negative and significant impact at lower than 5% significance level. To sum up except company size all independent variables were in agreement with the research hypothesis. The explanatory variables included in this study jointly explain about 65.3% of the variation in return on asset.

5.2. Conclusion

The purpose of this study was to examine the effect of financial factors on the financial performance of insurance companies in Ethiopia that were in operation over the periods of 2011 to 2020. To achieve this broad objective, the study used quantitative research approach. To this end, the collected data from a sample size of eleven Ethiopian insurance companies over the period of 2011 to 2020 were analyzed using descriptive statistics and multiple linear regression analysis. The analyses were made in line with the stated hypotheses and specific research questions formulated in the study. In doing so, previous studies on determinants of insurances profitability have been reviewed and as per the literature financial performance of selected insurance usually expressed as a function of internal and external determinants. Based on the findings, the appropriate model that has selected for this study was Random effect model and diagnostic test of all assumption included as the errors have zero mean, multicollinearity, hetroskadacitsity, normality and autocorrelation are valid and met. As a result it is possible to summarize that the model is adequate, statistically good fit, and data's were represented reliably. The econometric regression analysis of Random effect model revealed the following conclusions.

- ❖ The result of leverage showed a negative and statistical significant relationship with financial performance of insurance companies and which is as expected. This showed that the performances of highly leveraged insurers are less profitable than less levered insurance companies. This implies that equity financing is better than debt financing in Ethiopian insurance companies and this indicates that highly profitable insurance companies are more likely depend on equity capital than debt capital for the source of financing the firm. In addition Companies that are highly leveraged may be at risk of bankruptcy if they were unable to make payments on their debt and unable to find new lenders in the future.

- ❖ The regression result of liquidity showed that a positive and significant effect on the financial performance of insurance companies in Ethiopia. This implies that the increment of liquidity ratio increases the profitability of insurance companies in Ethiopia and it enhances the insurer's ability to settle their current obligations without selling their long term investments or to borrow money and the reverse is true. This implies that the insurance company with more liquid asset performs better than those with less liquid assets.
- ❖ Based on the regression results, underwriting risk has negative and significant relationship with ROA. this indicates that, the high claim ratios indicates premium rate too low and companies' profitability will be endangered, because higher underwriting risk leads the insurers to pay higher unexpected payments or expenses, whereas the low claim ratio indicates an insurers are underwriting profitable business.
- ❖ Regarding to premium growth, the regression result showed a positive and significant effect on Ethiopian insurance companies' financial performance. This means, the increase in premiums collection contributes significantly to insurance companies' profitability. This indicates that the higher underwriting premium will increase the profitability of the existing insurance industry onwards in terms of premium income, if they improving their underwriting performance through techniques like product selections, increase claims handling practice, detailing subject matter of insurance before agreement with the insured and finally through correctly price the insurance contracts provided to their customers.
- ❖ The research result of company size indicates a positive and insignificant impact on Ethiopian insurance companies' profitability. That means profitability of large insurance companies is better than small size companies even though it has insignificant effect. Because large insurance companies normally have greater capacity for dealing with adverse market fluctuations than small insurance companies and have more economies of scale in terms of the unit cost, which is the most significant production factor for delivering insurance services, complex information systems and a better expenses management.

- ❖ Regarding to the inflation rate, the regression result indicates a negative and significant relationship with financial performance of insurance companies due to it has reducing effect on the demand and willingness of citizens to purchase insurance goods and service by reducing their purchasing power on luxury products and finally by reducing the solvency of the firm.
- ❖ The regression result of GDP showed the positive and significant relationship with financial performance of insurance companies. This indicates that, when the economy of the country increased, the society demand and wants increased towards insurance product and services which maximizes the profitability of the insurance industries and the reverse is true.
- ❖ **Generally**, the study concludes that there is a strong relationship between explanatory variables: - leverage, liquidity, premium growth, underwriting risk, gross domestic product, inflation and explained variable i.e. financial performance of insurance companies in Ethiopia and those insurance companies with higher liquidity ratio, higher premium growth, lower underwriting risk, lower leverage ratio, lower inflation rate and high gross domestic product have better financial performance in Ethiopia.
- ❖ .As explained by the model variables explanatory power R-Square was 0.653, which means insurers financial performance is 65.3% explained by explanatory variables and it is explained 34.7% by variables other than the studied variables.

5.3. Recommendations

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

- ❖ As the regression result of this study showed, underwriting risk has negative and statistically significant effect on financial performance of insurance companies. Therefore, to reduce the negative impact of underwriting risk (amount of losses), the researcher recommended the insurance companies to improve their underwriting activity through techniques like product selections, increase claims handling practice and gathering sufficient information or detail about subject matter of insurance before agreement with the insured and correctly price the insurance contracts. In addition to this the researcher recommended the insurance companies to reduce their underwriting risk by transferring surplus risk to the reinsurers and by adopting

risk management and better risk differentiation strategy that enables the company to minimize risk and optimize their performance.

- ❖ The insurance sectors were operating at low liquidity position and this may bring liquidity risk, then to avoid this, the researcher recommended the insurers to have sufficient amount of liquidity ratio through continuously evaluating their working capital management strategies, asset accumulation strategies, market penetration strategies, claims evaluation strategies to discharge their responsibility for the time of accident and to cover their short term obligation. However, the liquidity ratio should not be too high or too low so, as to keep companies' profitability and build public confidence. In addition the researcher recommended the insurers to closely review their liquidity risk and to use a cash flow forecast to reduce the high liquidity risk.
- ❖ Leverage ratio results showed that the higher portion of the total asset financed through liability and will lower the profitability. So, the researcher recommended the insurers to issue common stock and other equity shares to increase their total asset composition or set their optimum mix of debt to asset to have leverage which contributes positively to profit.
- ❖ Even though, there is no significant relationship between company size and profitability, there is a direct relationship between the two. So the researcher recommended the insurance Company owners to give enough attention to the size of their company as a part of their long run strategy in achieving higher profitability and market share. Because the size of the company is an important factor to influence their competitive power and to earn higher performance.
- ❖ Insurance companies should also strive for increasing the Premium growth rate of the company as measured by the percentage increase in gross written premiums by improving their underwriting performance through applying techniques which enables to reduce underwriting risk like product selections, detailing subject matter of insurance before agreement with the insured and through correctly price the insurance contracts provided to their customers. Because the effective increase in this variable has strong association with higher profitability of the company.
- ❖ Even though, macroeconomic factors are not controlled by the management, the researcher recommended the insurance companies to prepare themselves for the change of GDP and

inflation rate by preparing financial plans like cash budget, and pro-forma balance sheet and income statement. This will help Insurance companies to easily adopt the economic changes of the country.

- ❖ Generally Ethiopian insurance companies should pay greater attention to the significant variables such as: leverage, liquidity, premium growth, underwriting risk, inflations and gross domestic product.

5.4.Suggestion for future researches

This study examines the effect of financial factors on financial performance of selected insurance companies in Ethiopian by examining only limited financial variables and by using 10 years' data .However, the variables used in this study did not include all factors specially the non-financial factors that can affect Ethiopian insurances financial performances. Therefore, the researcher recommend that the future researchers should conduct on the financial performance of Ethiopian insurance companies by increasing the number of observations through the use of large sample size and longer years of data and include the rest unseen insurance specific and macroeconomic variables.

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APPENDIX

Appendix 1: Descriptive statistics

Date: 05/24/21

Time: 09:23

Sample: 2011 2020

	LV	LQ	UR	PG	SIZE	INF	GDP
Mean	0.642781	1.113540	0.659980	0.138000	8.813724	0.125700	0.090600
Median	0.640000	1.112150	0.640000	0.155000	8.810000	0.130500	0.094500
Maximum	0.925000	1.370000	0.850000	0.900000	9.731000	0.199000	0.104000
Minimum	0.503000	0.800000	0.521000	-0.410000	8.020000	0.074000	0.061000
Std. Dev.	0.074160	0.161092	0.089056	0.238254	0.403470	0.041456	0.013768
Skewness	0.529364	-0.225503	0.443840	-0.104292	0.094278	0.297460	-0.825473
Kurtosis	3.512069	1.963471	2.113592	3.257250	2.539312	1.927150	2.605901
Jarque-Bera	6.339305	5.856572	7.212770	0.502722	1.135690	6.897630	13.20430
Probability	0.042018	0.053489	0.027150	0.777741	0.566746	0.031783	0.001357
Sum	70.70590	122.4894	72.59780	15.18000	969.5096	13.82700	9.966000
Sum Sq. Dev.	0.599476	2.828616	0.864466	6.187360	17.74388	0.187331	0.020662
Observations	110	110	110	110	110	110	110

Appendix 2: Heteroscedacity test

Heteroskedasticity Test: White

F-statistic	0.957183	Prob. F(35,74)	0.5458
Obs*R-squared	34.28005	Prob. Chi-Square(35)	0.5027
Scaled explained SS	33.73387	Prob. Chi-Square(35)	0.5292

Appendix 3: Autocorrelation test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.113118	Prob. F(2,100)	0.3326
Obs*R-squared	2.395530	Prob. Chi-Square(2)	0.3019

Appendix 4: Multicollinearity

Variance Inflation Factors

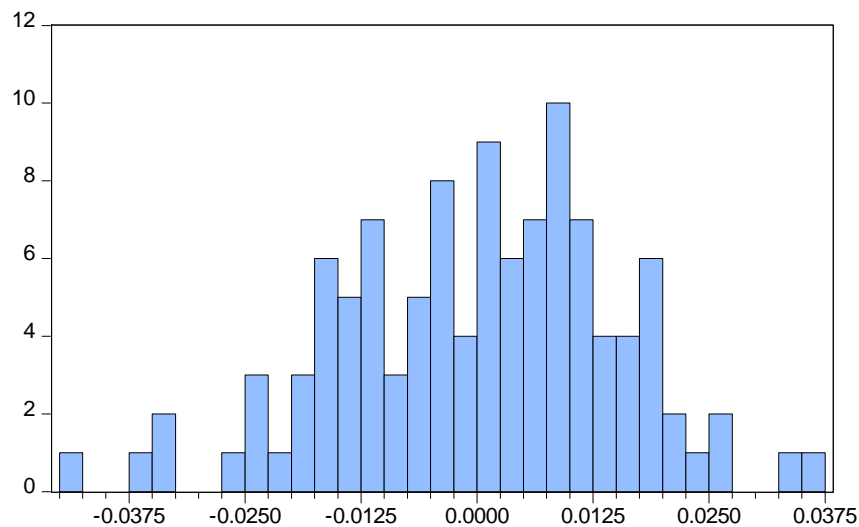
Date: 05/24/21 Time: 09:45

Sample: 1 110

Included observations: 110

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
LV	0.000521	99.50563	1.295418
LQ	0.000116	67.14452	1.364162
UR	0.000480	97.02221	1.719488
PG	4.82E-05	1.654519	1.236037
SIZE	1.79E-05	633.9780	1.313743
INF	0.002117	16.89837	1.644134
GDP	0.021738	83.22930	1.862008
C	0.002900	1322.253	NA

Appendix 5: Normality test



Series: Standardized Residuals

Sample 2011 2020

Observations 110

Mean 4.73e-17
 Median 0.001685
 Maximum 0.036741
 Minimum -0.044368
 Std. Dev. 0.015111
 Skewness -0.294507
 Kurtosis 3.068297

Jarque-Bera 1.611510
 Probability 0.446751

Appendix 4.6: The result of Hausman test suggests Random effect

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	7	1.0000

* Cross-section test variance is invalid. Hausman statistic set to zero.

Appendix 7: Regression result

Dependent Variable: LV
 Method: Panel EGLS (Cross-section random effects)
 Date: 05/24/21 Time: 09:21
 Sample: 2011 2020
 Periods included: 10
 Cross-sections included: 11
 Total panel (balanced) observations: 110
 Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LQ	-0.053112	0.038701	-1.372351	0.1729
UR	0.185917	0.073194	2.540046	0.0126
PG	0.030938	0.021280	1.453869	0.1490
SIZE	-0.038268	0.021092	-1.814300	0.0725
INF	0.241739	0.142739	1.693573	0.0934
GDP	0.409896	0.511737	0.800988	0.4250
C	0.844711	0.240038	3.519067	0.0006

Effects Specification		S.D.	Rho
Cross-section random		0.035551	0.3734
Idiosyncratic random		0.046055	0.6266

Weighted Statistics			
R-squared	0.214070	Mean dependent var	0.243665
Adjusted R-squared	0.168288	S.D. dependent var	0.052679
S.E. of regression	0.048042	Sum squared resid	0.237731
F-statistic	4.675830	Durbin-Watson stat	1.200198
Prob(F-statistic)	0.000303		

Unweighted Statistics			
R-squared	0.205896	Mean dependent var	0.642781
Sum squared resid	0.476046	Durbin-Watson stat	0.599362

Appendix 8: List of insurance companies

S/N	Name	Establishment Year
1	Abay Insurance Company	2010
2	Africa Insurance Company S.C	1995
3	Awash insurance company S.C	1994
4	Berhan Insurance Company S.C	2011
5	Buna insurance company	2013
6	Ethiopian Insurance Corporation	1995
7	Ethiopia life and general insurance company	2008
8	Global Insurance Company S.C	1997
9	Lion Insurance Company S.C	2007
10	Lucy insurance company	2012
11	National insurance company	1994
12	NIB insurance company	2002
13	Nile insurance company	1995
14	Nyala Insurance company S.C	1995
15	Oromia insurance company	2009
16	Tsehay insurance company	2012
17	The United Insurance S.C	1997
18	Zemen insurance company	2020

Appendix 9: Data used for analysis

Insurance	Year	ROA	LV	LQ	UR	PG	SIZE	INF	GDP
Africa	2011	0.04	0.75	0.931	0.82	0.37	8.68	0.181	0.104
Africa	2012	0.042	0.74	0.881	0.85	0.2	8.75	0.141	0.087
Africa	2013	0.046	0.69	0.82	0.85	-0.09	8.75	0.135	0.099
Africa	2014	0.06	0.66	0.86	0.8	-0.03	8.81	0.081	0.103
Africa	2015	0.0622	0.599	0.82	0.81	-0.07	8.86	0.077	0.104
Africa	2016	0.05	0.61	0.82	0.82	-0.41	8.885	0.097	0.08
Africa	2017	0.0641	0.59	0.965	0.8	-0.39	8.94	0.074	0.101
Africa	2018	0.053	0.68	1.05	0.82	0.32	9.05	0.146	0.077
Africa	2019	-0.0023	0.697	1.01	0.84	0.11	9.04	0.126	0.09
Africa	2020	0.062	0.734	0.94	0.742	0.31	9.16	0.199	0.061
Awash	2011	0.06	0.683	0.92	0.62	0.4	8.56	0.181	0.104
Awash	2012	0.052	0.71	0.96	0.66	0.15	8.71	0.141	0.087
Awash	2013	0.101	0.63	1.0999	0.61	0.41	8.822	0.135	0.099
Awash	2014	0.075	0.581	1.11	0.64	-0.09	8.85	0.081	0.103
Awash	2015	0.082	0.583	1.05	0.64	0.05	8.896	0.077	0.104
Awash	2016	0.062	0.58	1.023	0.63	0.16	9.0034	0.097	0.08
Awash	2017	0.075	0.56	1.101	0.62	0.31	9.071	0.074	0.101
Awash	2018	0.054	0.57	0.95	0.62	-0.07	9.38	0.146	0.077
Awash	2019	0.0642	0.534	1.05	0.654	0.16	9.397	0.126	0.09
Awash	2020	0.066	0.54	0.91	0.56	0.22	9.46	0.199	0.061
EIC	2011	0.07	0.64	1.264	0.74	0.04	9.22	0.181	0.104
EIC	2012	0.07	0.6	0.94	0.56	0.42	9.352	0.141	0.087
EIC	2013	0.088	0.67	1.22	0.67	0.18	9.42	0.135	0.099
EIC	2014	0.11	0.656	1.26	0.6	0.2	9.464	0.081	0.103
EIC	2015	0.11	0.66	1.24	0.62	0.01	9.499	0.077	0.104
EIC	2016	0.11	0.634	1.296	0.61	0.11	9.541	0.097	0.08
EIC	2017	0.12	0.601	1.351	0.62	0.37	9.614	0.074	0.101
EIC	2018	0.12	0.557	1.34	0.521	0.41	9.651	0.146	0.077
EIC	2019	0.09	0.654	1.182	0.62	-0.03	9.6742	0.126	0.09
EIC	2020	0.077	0.698	1.061	0.7	-0.09	9.731	0.199	0.061
Global	2011	0.03	0.5742	0.92	0.79	-0.3	8.02	0.181	0.104
Global	2012	0.02	0.682	0.92	0.8	0.19	8.06	0.141	0.087
Global	2013	0.113	0.65	1.14	0.57	0.9	8.094	0.135	0.099
Global	2014	0.12	0.57	1.352	0.53	0.22	8.188	0.081	0.103
Global	2015	0.11	0.594	1.32	0.55	-0.11	8.271	0.077	0.104
Global	2016	0.096	0.503	1.37	0.6	0	8.344	0.097	0.08
Global	2017	0.08	0.6011	1.25	0.74	-0.35	8.28	0.074	0.101
Global	2018	0.071	0.514	1.299	0.54	-0.39	8.482	0.146	0.077
Global	2019	0.06	0.554	1.22	0.65	-0.39	8.571	0.126	0.09
Global	2020	0.087	0.54	1.31	0.64	0.18	8.63	0.199	0.061
Lion	2011	0.053	0.78	1.02	0.62	0.28	8.043	0.181	0.104
Lion	2012	0.1	0.652	1.064	0.61	0.54	8.0796	0.141	0.087

Lion	2013	0.082	0.703	1.19	0.64	0.47	8.204	0.135	0.099
Lion	2014	0.072	0.64	0.87	0.66	0.29	8.36	0.081	0.103
Lion	2015	0.064	0.68	0.851	0.79	0.22	8.43	0.077	0.104
Lion	2016	-0.0047	0.731	0.82	0.8	-0.09	8.53	0.097	0.08
Lion	2017	0.04	0.781	0.8	0.82	0.2	8.611	0.074	0.101
Lion	2018	0.05	0.76	0.9	0.5952	0.35	8.782	0.146	0.077
Lion	2019	0.06	0.733	1.01	0.62	0.4	8.86	0.126	0.09
Lion	2020	0.062	0.71	1.055	0.5952	0.52	8.93	0.199	0.061
National	2011	0.03	0.925	1.121	0.781	-0.09	8.04	0.181	0.104
National	2012	0.12	0.631	1.053	0.59	0.42	8.1598	0.141	0.087
National	2013	0.095	0.73	1.16	0.7	0.54	8.345	0.135	0.099
National	2014	0.063	0.74	1.12	0.68	0.09	8.41	0.081	0.103
National	2015	0.084	0.68	1.21	0.67	0.1	8.45	0.077	0.104
National	2016	0.083	0.72	1.074	0.65	-0.29	8.53	0.097	0.08
National	2017	0.085	0.699	1.094	0.68	0.35	8.602	0.074	0.101
National	2018	0.084	0.6996	1.31	0.62	0.26	8.694	0.146	0.077
National	2019	0.082	0.683	1.32	0.594	0.05	8.711	0.126	0.09
National	2020	0.081	0.67	1.36	0.594	0.05	8.71	0.199	0.061
Nib	2011	0.072	0.71	1.05	0.69	0.3	8.514	0.181	0.104
Nib	2012	0.071	0.76	1.02	0.73	0.26	8.699	0.141	0.087
Nib	2013	0.084	0.71	1.09	0.67	0.26	8.74	0.135	0.099
Nib	2014	0.091	0.674	1.2	0.63	-0.03	8.84	0.081	0.103
Nib	2015	0.07	0.66	1.13	0.73	0.07	8.904	0.077	0.104
Nib	2016	0.05	0.624	1.105	0.78	-0.07	8.942	0.097	0.08
Nib	2017	0.05	0.64	1.08	0.76	-0.07	8.998	0.074	0.101
Nib	2018	0.05	0.733	1.11	0.78	-0.07	9.124	0.146	0.077
Nib	2019	0.065	0.694	1.19	0.74	0.07	9.186	0.126	0.09
Nib	2020	0.084	0.65	1.21	0.62	0.09	9.24	0.199	0.061
Nile	2011	0.078	0.62	1.05	0.71	-0.15	8.474	0.181	0.104
Nile	2012	0.093	0.61	1.17	0.71	0.5	8.5995	0.141	0.087
Nile	2013	0.0895	0.59	1.22	0.73	0.01	8.67	0.135	0.099
Nile	2014	0.101	0.597	1.25	0.7	0.08	8.74	0.081	0.103
Nile	2015	0.073	0.573	1.31	0.69	0.27	8.811	0.077	0.104
Nile	2016	0.03	0.61	1.01	0.78	-0.25	8.87	0.097	0.08
Nile	2017	0.11	0.59	0.96	0.641	0.23	8.95	0.074	0.101
Nile	2018	0.057	0.5901	1.05	0.58	0.07	9.05	0.146	0.077
Nile	2019	0.058	0.58	1.194	0.5644	0.07	9.141	0.126	0.09
Nile	2020	0.0552	0.562	1.14	0.564	0.06	9.192	0.199	0.061
Nyala	2011	0.11	0.53	1.21	0.55	0.23	8.395	0.181	0.104
Nyala	2012	0.122	0.524	1.33	0.54	0.35	8.55	0.141	0.087
Nyala	2013	0.12	0.594	1.24	0.53	0.37	8.68	0.135	0.099
Nyala	2014	0.11	0.581	1.32	0.54	-0.18	8.791	0.081	0.103
Nyala	2015	0.096	0.64	1.26	0.57	0.18	8.921	0.077	0.104
Nyala	2016	0.089	0.64	1.22	0.56	0.11	8.992	0.097	0.08
Nyala	2017	0.12	0.611	1.33	0.56	0.44	9.0921	0.074	0.101

Nyala	2018	0.074	0.63	1.2701	0.572	0.27	9.281	0.146	0.077
Nyala	2019	0.12	0.59	1.18	0.54	0.34	9.31	0.126	0.09
Nyala	2020	0.067	0.58	1.11	0.61	0.3	9.323	0.199	0.061
Oromia	2011	0.0224	0.7513	1.054	0.722	0.19	8.14	0.181	0.104
Oromia	2012	0.0612	0.7875	1.1143	0.661	0.22	8.267	0.141	0.087
Oromia	2013	0.084	0.75	1.35	0.54	0.26	8.42	0.135	0.099
Oromia	2014	0.072	0.71	1.21	0.57	0.15	8.59	0.081	0.103
Oromia	2015	0.098	0.702	1.2031	0.591	0.25	8.67	0.077	0.104
Oromia	2016	0.056	0.723	1.18	0.663	0.07	8.78	0.097	0.08
Oromia	2017	0.066	0.68	1.23	0.79	0.07	8.83	0.074	0.101
Oromia	2018	0.081	0.67	1.264	0.573	-0.15	8.952	0.146	0.077
Oromia	2019	0.08	0.68	1.288	0.6	-0.23	9.05	0.126	0.09
Oromia	2020	0.05	0.62	1.28	0.75	0.14	9.16	0.199	0.061
United	2011	0.08	0.575	1.333	0.71	-0.11	8.47	0.181	0.104
United	2012	0.09	0.59	1.36	0.64	0.58	8.61	0.141	0.087
United	2013	0.122	0.56	1.352	0.55	0.52	8.691	0.135	0.099
United	2014	0.11	0.5481	1.013	0.54	0.01	8.77	0.081	0.103
United	2015	0.093	0.632	0.881	0.573	0.14	8.81	0.077	0.104
United	2016	0.078	0.625	0.893	0.662	-0.23	8.893	0.097	0.08
United	2017	0.077	0.53	0.824	0.71	0.25	8.963	0.074	0.101
United	2018	0.0733	0.55	1.011	0.684	0.14	9.13	0.146	0.077
United	2019	0.0742	0.532	0.86	0.58	0.25	9.182	0.126	0.09
United	2020	0.03	0.572	0.852	0.731	0.3	9.45	0.199	0.061