



ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF ACCOUNTING AND FINANCE

**FACTORS AFFECTING FINANCIAL PERFORMANCE OF NON-LIFE
INSURANCES COMPANIES IN ETHIOPIA**

Prepared by:

Dagim Ayalew

Advisor: Sewale A. (PhD)

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Addis Ababa University

School of Graduate Studies

Certification

This is to certify that the thesis prepared by **Dagim Ayalew**, entitled: **Factors Affecting Financial Performance Of Non-life Insurances Companies in Ethiopia**” and submitted in partial fulfillment of the requirements for the degree of Master of Science in Accounting and Finance complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

Approved by:

External Examiner: _____Signature_____ Date_____

Internal Examiner:_____Signature_____ Date_____

Advisor: Sewale Abate (Phd) Signature_____ Date_____

Place and date of submission: Addis Ababa University, June 2019

Statement of Declaration

I, **Daagim Ayalew**, have carried out independently a research work on “Factors Affecting Financial Performance of Non-life Insurance Companies in Ethiopia: A Panel Evidence Review” in partial fulfillment of the requirement of the M.SC program in Accounting and Finance with the guidance and support of the research advisor. This study is my own work that has not been submitted for any degree or diploma program in this or any other institution, and that all references materials contained therein have been duly acknowledged.

Name: Dagim Ayalew

Advisor’s Name: Dr. Sewale Abate

Name----- Signature-----

Abstract

Addis Ababa University, June, 2019

This study intends to investigate the determinants of financial performance of selected non-life insurance companies in Ethiopia on the basis of secondary data eight years (2010-2017) period. The study selected sample of seven (7) non-life insurance companies to study them for a period of eight years (2010-2017) with total of 56 observations through panel data. Accordingly, the study used documentary analysis of companies' audited financial statements of non-life insurers which obtained from NBE and head office of each insurance company. The key explanatory variables were selected to disclose their relationship and influence on profitability measured by return on asset (ROA) from the prominent previous studies. The CLRM assumptions needed to be fulfilled for OLS that were tested and the residual was found to be homoscedastic, free of Multicollinearity, free of autocorrelation and normally distributed. The results of panel least square regression analysis indicated that company size, liquidity ratio, and efficiency have statistically significant and positive relationship with Non-life insurance business profitability. On the other hand, Reinsurer dependency, Inflation rate, Interest rate, and Leverage have a negative and statistically significant relationship with general insurance companies' profitability. Based on this finding, the study suggests that, the management bodies of the insurance companies should give high attention on firm and industry related variables, particularly on increasing their company size and efficiency to achieve superior profitability.

Keywords: Insurance, Profitability, Firm specific, Macroeconomic, Ethiopia

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List of Acronyms

AIC Awash Insurance Companies

APT Arbitrage Portfolio Theory

CAPM Capital Asset Pricing Model

CLRM Classical Linear Regression Model

DW Durban-Watson

EIC Ethiopian Insurance Corporation

FEM Fixed Effect Model

IFRS International Financial Reporting standard

IFR Inflations

ITR Interest Rate

LEV Leverage

LIQ Liquidity

MoFed Ministry of Finance and Economic Development

MPT Modern Portfolio Theory

MST Market Structure Theories

MSR Market Share

NBE National Bank of Ethiopia

NICE National Insurance companies

OLS Ordinary Least Square

RED Reinsurance dependence

REM Random Effect Model

RMP Relative Market Hypothesis

ROA Return on Asset

ROE Return on Equity

ROI Return on Investment

UNIC United Insurance Companies

VOE Volume of Equity

Chapter One

1. Introduction

1.1. Background of the Study

The role of financial institutions in the economy of a country in general and insurance companies in particular and it means their efficient and effective financial system through savings mobilization, risk transfer and intermediation. Therefore, financial institutions, channel funds and transfers risks from one economic unit to another economic units so as to facilitate trade and resources arrangement. Recent research, as surveyed by Naveed et al (2011), shows that 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. Hence, the important role that financial institutions such as insurance companies remain in financing and 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 is part of immune and repair system of the economy.

Performance represents a difficult concept, both in terms of definition and quantification. It was defined as output of activity, and the appropriate measure selected to assess corporate performance is considered according to the organization type and objectives of evaluation. Researchers in strategic management have offered a variety of models that can be used to analyze financial performance. Nevertheless, there is no consensus on what constitutes a valid set of performance criteria (Ostroff & Schmidt, 1993).

Profitability, defined as proxy of financial performance, is one of the main objectives of insurance companies' management. Profit is an essential prerequisite for an increasing competitiveness of a company that operates in a globalized market. In addition, profit attracts investors and improves the level of solvency, and thus, strengthens consumers' confidence. The financial analysis of a company is an important tool used by actuaries in the process of decision-making on underwriting and investment activities of the insurance company. The financial performance of insurance companies is also relevant within the macroeconomic context since the

insurance industry is one of the financial system' components, fostering economic growth and stability (Ana-Maria & Ghiorghie, 2014).

The financial performance of insurance companies can be analyzed at micro and macroeconomic level, being determined both by internal factors represented by specific characteristics of the company, and external factors regarding connected institutions and macroeconomic environment. Identifying the factors that contribute to insurance companies' profitability is useful for investors, researchers, financial analysts and supervisory authorities. Therefore, the purpose of this paper is to clearly identify the key determinants of financial performance of insurance companies in the country.

1.1.1. 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 (NBE, 2018).

According to Hailu (2007), the 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 and 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.

Currently, there are 17 insurance companies in operation. Both public owned and private insurance companies which are operating as on January 2019 throughout the country are listed in the following table 1.1

Table 1.1: List of insurance companies operating in Ethiopia as of 2018

No.	Name	Type	Establishment Year
1	Ethiopian Insurance Corporation	General	1975
2	Africa Insurance company S.C	General	1994
3	Awash insurance company S.C	General	1994
4	National Insurance company of Ethiopia S.C	General	1994
5	Nyala Insurance company S.C	General	1995
6	Nile Insurance company S.C	General	1995
7	The United Insurance S.C	General	1997
8	Global Insurance Company S.C	General	1997
9	NIB insurance company	General	2002
10	Lion Insurance Company S.C	General	2007
11	Ethio-Life Insurance S.C	Life	2008
12	Oromia Insurance Company S.C	General	2009
13	Abay Insurance Company	General	2010
14	Birhan Insurance company S.C	General	2011
15	Tsehay Insurance S.C.	General	2012
16	Lucy insurance share company	General	2012
17	Buna insurance company	General	2013

Source: NBE (2018)

Therefore it requires empirical investigation so as to sort out what are the important factors affecting financial performance of insurance companies and this will help concerned bodies to focus on the relevant factors. Hence the efficient performance of the institutions has become important and investigations by different researchers focus on what factors determine the performance especially the financial performance of the sector.

1.2. Statement of the Problem

The best performance of any industry in general and any firm in particular plays the role of increasing the market value of that specific firm coupled with the role of leading towards the

growth of the whole industry which ultimately leads to the overall success of the economy. Measuring the performance of financial institutions has gained the relevance in the corporate finance literature because as intermediaries, these companies in the sector are not only providing the mechanism of saving money and transferring risk but also helps to channel funds in an appropriate way from surplus economic units to deficit economic units so as to support the investment activities in the economy (Teklit and Jasmindeep, 2017).

The insurance industry in particular is part of immune and repair system of an economy and successful operation of the industry can set energy for other industries and development of an economy. To do so the insurance industry is expected to be financially solvent and strong through being profitable in operation. Hence, not only measuring the financial performance of insurance companies but also clear insight about factors affecting financial performance in the industry is then the problem to be investigated. Therefore, the determinants of insurance company's performance have attracted the interest of academicians, practitioners and institutional supervisors (Teklit and Jasmindeep, 2017).

Particularly, the Ethiopian insurance sector are also remains underdeveloped and they are targeted at the corporate market, focusing on general insurance and almost 90 percent of the population does not have any type of formal insurance (Gieger and Moller, 2015).

An investigation of the factors affecting profitability has been more of focus on digging theoretical and empirical studies in finance research. A large number of studies has been investigated on the factors determining profitability in different jurisdictions. But a scanty of study had been conducted in the selected area from developing countries as far as the researcher concerned and they are also insufficient in amount. For instance, in order to conduct this study, some of the literatures were taken from Pakistan, Kenya, India, Taiwan, Nigeria and other Europe countries for an intention of identifying non-life insurance business profitability determinants. Some of the previous researches that conducted on these jurisdictions as well as in Ethiopia have also documented unclear results on relationship between profitability which measured by return on asset and some other variables used to measure it as a proxy. For instance, Mazviona et.al., (2017), Sumaira and Amjad (2013) and Lee and Lee (2012) indicates that, financial leverage of the non-life insurance companies is positively related with profitability.

Whereas, Kozak (2011) and Kazeem (2015) found inverse relationship between leverage and profitability of non-life insurer's. Despite to that, Mazviona et.al., (2017), Daare (2016), Kazeem (2015) and Lee and Lee (2012) found positive relationship between ROA and the firm liquidity.

To add on this inconsistent and controversial results among the variable used in their study and profitability. For instance, Suyehli (2015) found positive and significant relationship between profitability and liquidity whereas Mehari and Aemiro (2013) found positive insignificant relationship between profitability and liquidity. In opposite to that, Ayele and Sambasivam (2013), Meaza (2014), Mistire (2015), Hanna (2015), Hadush (2015), Teklit and Jasmindeep (2017), Suyehli (2015), Demis (2016), Mehari and Aemiro (2013) and Asrat and Tesfahun (2016) states that liquidity have negative impact on profitability of insurance companies in.

Therefore, from literature reviews the researcher identified the following gaps to study;

- 1) The explanatory variables used to study factors affecting financial performance of insurance companies resulted inconsistent relationship with the dependent variable and hence, the researcher wanted to check and explain the relationship of liquidity ratio, leverage, and inflation rate with ROA.
- 2) Previous researches made on the topic only used inflation rate and GDP as a macro-economic factors and they over looked an important macro-economic factor, lending interest rate. So the researcher assessed the impact of lending interest rate on ROA.
- 3) The lack of sufficient research on the determinants of non-life profitability in context of Ethiopia, depict the existence of knowledge gap.

Therefore, the present study was an attempt to fill the aforementioned research gap by providing information about the endogenous, industry specific and macroeconomic factors influencing the profitability of Ethiopian General insurance companies particularly.

1.3. Objectives of the Study

1.3.1. General Objective of the Study

The major objective of this study was to investigate the factors influencing the profitability of Ethiopian non-life insurance companies for the period 2010 to 2017. Based on firm specific, industry specific and macro-economic factors that are found to significantly influence profitability in the prior studies, this study investigate the determinant factor that Ethiopian insurance companies must consider in improving their profitability.

Specifically, the study investigated whether profitability of Ethiopian non-life insurance companies is affected by the firm's market share, reinsurer dependence, liquidity ratio, leverage and macroeconomic factors inflation and interest rate.

1.3.2. Specific Objectives of the Study

Based on the above general objective, we elucidate the following specific objectives:

- ❖ To examine the level and direction effect of company size on performance of selected non-life insurance companies in Ethiopia.
- ❖ To examine the level and direction effect of reinsurer dependence on performance of selected non-life insurance companies in Ethiopia.
- ❖ To examine the level and direction effect of liquidity ratio on performance of selected non-life insurance companies in Ethiopia.
- ❖ To examine the level and direction effect of inflation rate on performance of selected non-life insurance companies in Ethiopia.
- ❖ To examine the level and direction effect of market lending interest rate on performance of selected non-life insurance companies in Ethiopia.
- ❖ To examine the level and direction effect of leverage on performance of selected non-life insurance companies in Ethiopia.
- ❖ To examine the level and direction effect of efficiency on performance of selected non-life insurance companies in Ethiopia.

1.4. Significance of the Study

Most of the studies previously focused on banks not on insurance companies as well as some focused on only analysis of financial performance not on factors affecting financial performance. Therefore, this study is expected to provide empirical evidence on the profitability of non-life insurance companies in Ethiopia. Furthermore, many parties would benefit from the results that will emerge from the results of the study. Administration interested in identifying indicators of success and failure to take the necessary actions to improve the performance of the company and choose the right decisions. Government interested in knowing which companies operate successfully or failed to take the necessary measures to avoid crises of the bankruptcy in these companies. Investors interested in such studies in order to protect their investment, and directing it to the most feasible investment option. Customers interested in knowing the ability of insurance companies to pay their obligations based on the indicators of success of the companies. This study can potentially serve as a stepping stone for further research in the area.

1.5. Scope and Limitation of the Study

Even though there are other formal, semiformal and informal financial institutions, the study focused only on the determinants of financial performance of non-life insurance companies in Ethiopia and also the scope of the study confined merely on the quantitative measure of determinates of non-life insurance companies financial performance in Ethiopia without any overall performance measurement tool. And also the study only focused on the purposefully selected insurance companies' panel data for 8 years.

Financial statement presentations of the studied insurance companies have been different from each other, even in a single company different financial statement format used over the years. It was difficult to take the intended data but the researchers unravel these difficulties by contacting respective insurance companies department which is responsible for issuing financial statement.

1.6. Organization of the Paper

The reminder of this paper is organized as follows: chapter two deals with review of related literatures. The third chapter is about methodology of the study and the fourth chapter includes

data analysis and interpretations. Finally, the last chapter presents the summary, conclusion and recommendations of the paper.

Chapter Two

2. Literature Review

The first chapter introduced the problem that expected to be investigated in this research along with purpose and research hypothesis. In this chapter, the possible relationship between non-life insurance company profitability and the determinants influencing is reviewed in order to put the study within the context of the existing literature, the subsequent sections of this chapter present the theoretical review, factor affecting profitability, empirical review, conclusion and knowledge part from literature, and conceptual frame work used in order to conduct the study.

2.1. Theoretical review

2.1.1. Theories of Profitability:

Profit is an income distributed to the owner in a profitable market production process (business). It also is a measure of profitability which is the owner's major interest in income formation process of market production. However theories of profit define profit differently.

Theory of profit is generally recognized to be one of the most unsatisfactory parts of economic doctrine. Theories of profit in fact bring out the source of profit or determinants of profit (D.N. Dwvedi, 2002, p: 498).

There are various theories of profit which have been advanced from time to time regarding the nature of profit in a competitive economy. Almost all of them differ basically from one another and are inadequate to explain the actual role of profit in the operation of free economy. The most important theories are:

2.1.1.1. Dynamic theory of profit:

The dynamic theory of profit was formulated by J.B. Clark. According to him profit accrues because the society is dynamic by nature. Since the dynamic nature of society makes future uncertain and any act, the result of which 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 in a society where changes does not occur i.e. it is static by nature the risk element disappears and hence the profit element does not exist there.

Actually, a society is said to be dynamic when there is a change in its population, change in trends of the people, change in stock of the capital, change in the supply of entrepreneurs etc. when all these factors becomes constant, the future also becomes certain and the risk element disappears from the society.

According to Clark, profit is the result of an adjustment, which is brought about by the entrepreneurs themselves. They may find new techniques of production by inventing new machines. Their use reduces the cost of production and reduces the course of time as well and gives the entrepreneur higher profits. But when the use of machinery and production becomes common and used by the other entrepreneur operating in the economy, the supply of goods then increase and the prices fall. Hence the profit margin also goes down. Under this situation the profit is determined by the demand and supply of enterprise at a point where they are equal.

In a dynamic economy, if an entrepreneur produces a new thing and creates demand for his products, then he is likely to obtain big profits. But the profits of the entrepreneur cannot continue to exist for long period. The other entrepreneurs also adopt the innovation and produce similar products. As total output increases, the profits, gradually come down. Thus, we find that perpetual profits are the result of perpetual new successful innovation. Though, this theory is criticized, since Clark completely ignores the future or uncertainty. Prof, Knight has criticized the Clark Theory of profit on the ground that it is wrong to attribute all profits to dynamic changes.

According to Knight, there are certain changes which are of a recurring and calculable nature. They can be anticipated and the output can be adjusted according to that. The profits do not arise on those regular changes but on those which are unforeseen or unpredictable. Thus, he observes that: "It is not dynamic changes or any changes as such which cause profits but he divergence the actual conditions from those which have been expected and on the basis of which business arrangements have been made"

2.1.1.2. Uncertainty bearing theory of profit:

The theory of uncertainty bearing theory of profit was developed by Prof. F.H. Knight in 1921.

According to him, profits are the reward for uncertainty bearing rather than risk taking. He has divided the risk into insurable risks and non-insurable risks. Non-insurable risk is also known as uncertainty.

A. Insurable risks:

The risk whose statistical probability can always be computed like the risk of fire, theft and accident are known as insurable risks. These risks can be insured and the entrepreneur can reduce such risks. No entrepreneurs feel fear on this type of risk because such risk can be transferred to insurance agency by paying suitable premium.

B. Non-insurable risk:

The risk which is neither definite nor foreseen is called non-insurable or uncertainties risk. It cannot be guarded against because no insurance companies afford an insurance against such uncertainties. Its statistical probability also cannot be computed. Non-insurable risk arises due to business cycle, technological changes, unhealthy competition among business firms, change in government policy etc.

According to Prof. Knight the main function of the organization is to bear such non-insurable risks or uncertainties and profit is the reward for bearing such risks.

To this theory the uncertainty is caused by the following factors: competitors' behavior, innovations, consumers' behavior (like fashions, tastes...etc), government policy interventions, wage and labor policies, income of people, movement of prices, technological changes, natural disturbances, etc. Even though, this theory of profit is criticized, since it does not show a direct relationship between profit and uncertainty, Ignores other determinants of profits, and it is a one sided theory (Nabraj Lama, 2013).

2.1.1.3. Risk bearing theory of profits:

The risk bearing theory of profit was developed by F.B Hawley in 1907 A.D. According to him, profit is a reward of risk bearing. The main function of entrepreneur is to bear risk. Production involves various kinds of risks and other emergency expenses. Nobody will bear risk unless there is expectation of profit.

Profit is the main motive for taking risk. Thus, profit is reward for taking risk. Risk differs from industry to industry. Some productive activities are more risky while others are less. The rate of profit is also different from industry to industry. Profit is the reward for taking risk. Higher the risk, higher will be the profit and vice versa (Nabraj Lama, 2013).

This theory is also a windfall theory of profits since windfall profits result as a result of increase in the price while the costs of production remain unchanged.

The price increases are caused, as per this theory, by expected movements in price and income of consumers, inventory management, reimbursement for risks, differences in efficiency, differences in the nature of production, monopoly profits, windfall profits in a branch of industry, and general windfall profits. However, this theory is criticized, since this theory does not show the relationship between profit and risks, it is a narrow theory, and it excludes the dynamic function of entrepreneurs/organization.

2.1.1.4. Monopoly theory of Profit:

This theory is established by Kalocki and he said that there is no doubt that profits arise from dynamic changes, innovations and from making a correct estimate of future economic conditions. However in his point of view, monopoly and monopolistic competitions in the market also give rise to profits. The firms under monopoly or monopolistic competition have greater control over the price of the product. They are the price makers rather than the price takers. As such they raise prices by restricting the level of output and thus keep profit at higher level. Monopoly power, thus, is the basic sources of business profits.

Nevertheless, this theory is also criticized because, monopoly is no doubt an important cause and source of monopoly profits but it does not replace other theories. Monopoly power only supplements other theories (www.economicsconcepts.com).

2.1.1.5. Marginal Productivity theory of profits:

This theory of profit was established by Chapman, Stigler, Stonier and Hague, and holds that profit always equals to the marginal productivity of the entrepreneur.

The marginal productivity of the entrepreneur cannot be evaluated in the case of the firm because there is only one entrepreneur in a firm. It is however can be easily done in an industry where the

number of the firms can be calculated and hence the marginal productivity of various entrepreneurs can be measured.

According to this theory the profit depends upon the marginal production. Greater the marginal production greater will be the profit (www.guesspapers.net).

Even so, Chapman et al.'s theory of profit was criticized by the unit of factor, i.e., the enterprise is very large, if for finding out the marginal net productivity of the entrepreneur, we withdraw it from the business, and then it will disorganize the entire productive organization. Thus, it becomes very difficult to ascertain the marginal net productivity of the labor.

2.1.1.6. Innovation theory of profits:

This theory was pioneered by Joseph Schumpeter, holds that profit is a residue and it is the cost of entrepreneurial ability used. The residual difference between price and costs is increased (hence profit increases) due to the reductions in costs due to innovations such as introduction of new goods, differentiated goods, discovery of new source of raw materials, development of new markets, use of new organizational forms.

According to this theory innovations result in a reduction in the prices of the factors of production, thus the costs of production decreases resulting in an increase in the difference between the price and the costs of production, i.e. the residual profits.

But in a competitive economy and without patent laws, the existing competitors or the new firms will soon adopt any successful innovation and profits would be eliminated. However, in a competitive and progressive economy the entrepreneurs always continue to introduce new innovations and thus profits continue emerging out of them; unless one can construct a permanent monopoly (www.tutorsland.com/).

Moreover, modern economists said that “after they discuss various theories of determination of profits, they come to this conclusion that all these theories are defective in one way or the other”. Similarly, they said that “The basic defect (criticism) with these theories is that they particularize certain aspects of the function of an entrepreneur to the neglect of others. While, the fact is that profit functions are many and various. For instance, profit can arise due to dynamic nature of

society, monopolistic position of the entrepreneur or adoption of innovation or sheer chance or some of the factors stated above”.

Thus, they conclude that “there is not a single theory of profit which gives a correct and comprehensive explanation of the nature and determination of the profits. Such a theory is yet to be propounded”.

2.1.2 Overview of Insurance

The financial system comprises of financial institutions, financial instruments and financial markets that provide an effective payment, credit system and risk transfer and thereby facilitate channelizing of funds from savers to the investors of the economy (Boadi et al., 2013). As part of financial institution, social welfare created by insurance companies is unquestionable. A well-developed and evolved insurance sector is a boon for economic development as it provides long-term funds for infrastructure development at the same time strengthening the risk taking ability of the country (Charumathi 2012). Chen and Wong (2004) also suggests that a strong and healthy insurance sector is of utmost importance for all groups and sectors of the economy.

Insurance serves a number of valuable economic functions that are similar and largely distinct from other types of financial intermediaries. According to Malik (2011) insurance plays a crucial role in development 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. Michael Koller (as cited in Abate 2012) suggests that insurance companies are playing the role of transferring risk and channeling funds from one unit to the other (financial intermediation). This implies that insurance companies are helping the economy of a country one way by transferring and sharing of risk which can create confidence over the occurrences of uncertain event and in another way insurance companies like other financial institutions plays the role of financial intermediation so as to channel financial resources from one to the other.

Even if there are numerous type of insurances it can be divide in to two broad categories based on their role to the economy. Those are general insurance companies and life insurance

companies. General insurance companies and life insurance companies are different each other in terms of operation, investment activities, vulnerability and duration of liabilities. Life insurers are said to function as financial intermediaries while general insurers function as risk takers (Chen and Wong 2004).

Insurance firms are in the business of taking risks. Worldwide these firms underwrite policies that deal with specific risks, and in many cases, even underwrite exotic risks. In carrying its core activities, i.e., pricing, underwriting, claims handling and reinsurance management, an insurer will face a wide range of risks which are often interlinked and if not properly managed, could threaten the ability of the institution to achieve and sustain its viability (Adams and Buckle, 2013).

2.1.3. The Concept of Financial Performance

Financial performance is one of many different measures to evaluate how well a firm is using its resources to generate income. Good examples of financial performance include operating income, earnings before interest and taxes, and net asset value (Ngui, 2010). Business executives use financial statements to draft a comprehensive financial plan that will maximize shareholders wealth and minimize possible risks that may preexist. Financial statements evaluate the financial position and performance of a firm. These statements are prepared and produced for external stakeholders for example: shareholders, government agencies and lenders (Ramadhan, 2010). Assessment of a firm's performance should take into account many different measures as there are several factors that determine the performance of economic organization including asset base, leverage, performance of the loan book, corporate governance and the quality of staff and regulations in the industry. The essence of financial performance measurement is to provide the organization with the maximum return on the capital employed in the business (Ngui, 2010).

The financial performance measures the financial soundness and health of the organization in monetary terms and thus, can be used to compare the performance of different corporations within any particular industry or between the industries. The financial performance of the insurance firm's plays a pivotal role in the growth of the industry as a whole, which ultimately contributes to the success of an economy (Iswatia, & Anshoria, 2007). Insurers' profitability is influenced by both internal and external factors. Whereas internal factors focus on an insurer's-

specific characteristics, the external factors concern both industry features and macroeconomic variables. The profitability of insurance firms can also be appraised at the micro, industry and macro levels of the economy. The micro level refers to how firm-specific factors such as size, capital, efficiency, age, and ownership structure affect profitability. The industry and macro levels refer to the influence of support-institutions and macroeconomic factors respectively. At the micro level, profit is the essential pre-requisite for the survival, growth and competitiveness of insurance firms and the cheapest source of funds (Buyinza et al., 2010).

The financial performance of a general insurance underwriter would be affected by how much of the available funds are deployed in assets that earn a return and also how big that rate of return is (Chen and Wong, 2004). Losses incurred or total claims expense to premiums earned denotes the underwriting results or essentially the quality of business underwritten. The lower the loss ratio, the better the financial performance. Expense ratio is the total expenses (excluding claims) to premiums written and basically indicates the operational efficiency in managing the general insurance firm. The higher the expense ratio, the worse the financial performance. The sum of the loss and expense ratios is referred to as the combined ratio, and the lower it is the better the financial performance (Leverty and Grace, 2010; Chen and Wong, 2004; and Hirao and Inoue, 2004).

Financial performances represent the operation to carry out monetary actions. Generally, financial performance indicates measures to which economic goals being or has been achieved. Economic activities are course of action of measuring the outcome of an organization's guidelines and action in fiscal shape. It is used to calculate organization's overall economic fitness over particular time period. The financial performance of the organizations can be calculated by its economic outcome and by its size of earnings. Risk and profitability are two main components which together decide the significance of organization. Financial conclusion which enlarges uncertainty will reduce the value of organization and on the other hand financial conclusions which boost up the profitability will enlarge value of the organization. Risk and profitability are two essential elements of business organization.

2.1.4. Profitability Related Theories

Different researchers have been come up with different conclusions regarding the determinants of profitability. But, there is no single theory which gives a correct and comprehensive explanation on the nature and determinants of profit. It is familiar that without profitability, the business will not survive in the long-run since the profitability is the measure the goal of all business ventures and success of the business economic unit. Therefore, to achieve better profitability, the insurance firm should consider the theories which discussed in different finance literatures and they must relate those theories with their operational activities.

2.1.4.1. Market Structure Theories (MST)

Traditionally, the Market Structure Theory (MST) of the firm was assumed that a firm's objective is simply to maximize a profits. In the societies of modern industries, this theory is not applicable in practice, because most of the modern industries are involved in providing a variety of products/services, and they faced with much more complex decisions to be taken in a dynamic and uncertain business environment (Rasiah, 2010). The overall assumption of the market structure theory is focus on the consideration of industry structure (measured by market concentration level in term of market share ratio) which has an impact on profitability of insurance companies.

There are two theories that are proposed in MST. The first theory is structure-conduct-performance hypothesis (SCP) (also referred to as the Relative-market-power hypothesis (RMP)) states that a more concentrated sector favors high profitability and motivated by benefits of greater market power, which reflects the setting of prices that are less favorable to consumers (high policy holders, higher Gross Written Premium) as a result of competitive imperfections in markets (monopoly profits). Existence of superior management and high market share will lead the company to raise their profit (Berger,1995; Berger and Hannan,1989). Goddard et.al., (2004) noted that, the relationship between market concentration and profitability is based on the SCP hypothesis and they have empirically positive relationship.

The second formulation of theoretical framework of Market Structure Theory is the efficient structure hypothesis (ESH). It states that efficient firms in the market lead to increase in the

firms' size and market share due to the aggressive behavior. This will help the large firms to maintain high profits through low cost as a consequence of concentrated market structures and collusion occur among firms. The ESH theory also states a positive relationship between firm concentration and profitability as an indirect consequence of efficiency. Generally, Berger and Hannan (1989) states that ESH and SPC stand on similar observation on the relationship between concentration and performance (profitability). The findings of Lee and Lee (2012), Pervan and Kramaric (2012) and Jovovic et.al., (2014) is also support this finding. However, the difference in two theories consisted mainly in ways of interpretation of the relationship. But, some empirical evidence on the relationship between firm concentration and profitability is not conclusive.

2.1.4.2. Modern Portfolio Theory (MPT) Approach

The Modern portfolio theory approach is the most relevant approach and it plays a vital role in financial institutions; particularly in bank, nonbank financial institutions and insurance (Nzongang and Atemnkeng, 2006). The theory was developed first by Markowitz in 1952. The major ideas of the modern portfolio theory are maximizing the expected portfolio returns for a given amount of minimum portfolio risk in a given level of return by carefully choosing the proportions of various assets. Markowitz explain the Modern portfolio theory as to which the investors should select a portfolio and make the highest possible return from a certain level of risk or get the lowest possible risk for a certain level of return. There is a positive relationship between the risk and the expected return of a financial asset (Sadiye, 2014).

Two types of risks are considered under MPT to determine the rates of return of asset portfolio held by the firms. The first is the unsystematic risks which are effectively minimized and possible by diversifying portfolio risk. It related to the firm specific factors for individual firm. Further side, the systematic risks are affected by the macroeconomic factors and even cannot eliminate through diversification of the portfolios. Erdugan (2012) noted that the risk and return on firm's diversified portfolio is depending on domestic and foreign economic and financial variables for financial industry which are based on decisions taken by the financial manager. These are also real for the insurance companies in elsewhere. Since insurance firms are investments by themselves its standard practice for them to invest in a diversified portfolio to

minimize risk and increase the returns through various investment options on offer. Thus, when choosing a portfolio, insurance firms should maximize the discounted (or capitalized) value of future earnings (Suheyli, 2015). Further, the ability to obtain maximum profits depends on the feasible set of assets and liabilities determined by the management of the organizations and the unit costs incurred by the firm for producing each component of assets (Nzongang and Atemnkeng, 2006). Therefore, this theory is also important for the insurance companies operating in elsewhere and all over the world.

2.1.4.3. Arbitrage Pricing Theory (APT)

The Arbitrage Pricing Theory (APT) was introduced by Ross in 1976. The theory assumes a positive relationship between risk and expected return of the firm. The APT model is an expansion of the CAPM and describes returns as a linear function of several rather than of single variable. The APT theory is less restrictive in comparison to Capital Asset Pricing Model(CAPM). As noted by Ouma and Muriu (2014), the APT theories are based on two basic assumptions such as capital markets are perfectly competitive and investors always prefer more wealth to less wealth with certainty respectively. Furthermore, the APT agrees on the existence of many different specific forces those can influence the return obtained any individual firm. As noted by Suyehli (2015), the effect of these specific factors may consider the principle of diversification which has highly influence the activities undertaken on the field of insurance. Despite to that, the APT are also uses multiple variables and is a multi-beta model by its nature. Sadiye (2014) also noted that, the sensitivity of movements in each variable is represented with a beta coefficient to indicates the unique sensitivity of each particular variable.

The Arbitrage Pricing Theories connects several types of risk associated with firm securities such as changes in interest rates, inflation and productivity with the expected return of the same securities used by the entities through combining both systematic and unsystematic risk which attributes the expected return of a capital asset to multiple risk factors. Thus, an insurance company has no way of knowing whether any particular individual will become sick or will be involved risk. This shows that an insurance company is not entirely free of risk since the insurers is insures a large number of individuals (Ouma and Muriu, 2014). With reference to the APT model, insurance firm's profitability is also affected by several macro-economic factors such as

inflation, interest rates, money supply and exchange rates like other firms. In context to this, even if there is lack of the capital market in Ethiopia; some of the assumption of APT which discussed above is related to profitability of the insurance industry operating in our countries. Therefore, this study considers some of the factors which affect profitability of the selected firms and relates some assumption of this theory with the issues under investigation.

2.2. Empirical Review

2.2.1. Empirical studies in other countries

Financial performance is a measure of an organization's earnings, profits, appreciations in value as evidenced by the rise in the entity's share price (Asimakopoulou, et al., 2009). Insurer's profitability is influenced by both internal and external factors. Whereas internal factors focus on an insurer's specific characteristics, the external factors concern both industry features and macroeconomic variables. The profitability of insurance firms can also be appraised at the micro, industry, and macro levels of the economy. The micro level refers to how firm-specific factors such as size, capital, efficiency, age, and ownership structure affect profitability.

Depending up on the above stated theories, market structure theories and 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. In context to this, internal and industry related determinants used in this study include underwriting risk, reinsurance dependence, financial leverage, liquidity, diversification, industry concentration ratio and others among huge variables used in this studies. 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 organizations other than the internal factors. Thus, the macroeconomic factors that can affect organizational profitability include Growth Domestic Product and inflation rate among others a lot of variables discussed in the review of literature parts. Furthermore, considering the degree to which those variables influence the insurance company's profitability and identifying the relationship among those variables was clearly discussed in this research, particularly in Ethiopian non-insurance business context.

Boyjoo and Ramesh (2017) investigate the factors influencing the performance of general insurance companies operated in Mauritius for a five consecutive years from 2011-2015. The study used 11 explanatory variables which influence the financial performance of the insurers such as company size, underwriting risk, leverage, liquidity, investment performance, re-insurance dependency, sale profitability, net operating expense, industry concentration ratio, growth rate and company age. In the study, performance of general insurers was determined by using Return on Assets (ROA) as dependent variable. The panel data of ordinary least square(OLS) multiple regression is used to analyze the secondary data collected for the study purpose.

The finding of the study reveals that size of the company, underwriting risk, Leverage, liquidity, concentration ratio and investment performance has positive and significant impact on the profitability of the firm measured by return on asset (ROA). Whereas reinsurance dependency and growth rate is negative and insignificantly related with the ROA. However, sales profitability ratio, net operating expense, company age and premium growth are positively and insignificantly related with financial performance of general insurance companies operated in Mauritius. Based on the finding, the study recommends that many factors influencing the performance of Mauritius general insurers has identified and investigated in respective of their correlation and predictive capacity to develop a model that could be used to monitor their performance to achieve growth and success.

Krivopavic et.al., (2017) undertake the study on topic entitled the effects of corporate diversification on firm performance among Serbian insurance industry from 2004-2014 for eleven consecutive years through panel data. Particularly, the paper focus on the relation between line-of-business diversification and performance of insurance companies those operated for 11 years. The return on asset and the return on equity is used as a dependent variable, while the independent variable is entropy (product diversity), company size, capitalization, share of life premiums, specific line market concentration, and three dummy variables which consist group, public, and foreign. The study analyzes the effect by using multiple regression statistical model.

The finding of the study indicates that the relation between risk-adjusted returns measured by return on assets and return on equity and line-of-business diversification and performance

measured by entropy is significant and positive. This implies that diversified insurers outperform undiversified insurers. The finding of Krivopavic et.al., (2017) is also consistent with the finding of Zhang (2015) which indicates that specialized insurance companies which is composite will be more profitable (outperform) than insurance companies operated by one line alone in moderate competitive environment. Whereas Zhang (2015) found negative and highly significant relationship between diversification and ROA which indicates that diversified insurers are underperform single-line insurers companies for those operated in highly competitive business environment. Based on the finding, the study recommends that, the management should formulate business strategies and diversification plans in the hope of better positioning themselves in the marketplace from their line of insurance companies.

Daare (2016) undertake the study to identify factors that determining non-life insurance companies' profitability in India on eight general insurance companies (2 publics and 6 private companies) from the year of 2006 to 2016 through the panel data. The secondary data which collected from annual audited financial statement is used in the study. To see the impact, the author tested eight major combinations of both internal and external variables such as size, capital adequacy, liquidity, loss ratio, premium growth, age, GDP and inflation. The return on asset is used as a proxy to measure profitability of the companies which is dependent variable. The multiple linear regression OLS model is used to analyzing the data on the study.

The finding demonstrates that company size, liquidity and inflation found statistically significant factors that determine insurance companies' profitability in India. From those variables, the size, loss ratio, liquidity, age and GDP are positively correlated with ROA while capital adequacy, premium growth and inflation are negatively correlated with ROA. The author concluded that, insurance companies' specific factors such as age of the firm and liquidity of the firm are the most significant determinants of the profitability of 20 insurance companies and inflation is statistically significant variable among macroeconomic variables in Indian non-life insurance.

Based on the finding, study recommended that insurance managers may put significant attention on managing current assets and current liability to maintain optimal liquidity position while inflation also important from external variables.

Nyamu (2015) undertake the study on the effect of macroeconomic factors on financial performance of insurance companies operated in Kenya which covered a period of 10 years from 2006 to 2015. In the study, the effect of the six major independent variable was analyzed which consist of interest rate, Exchange rate, Lending rate, Money supply, GDP and inflation. Despite to that, the financial performance the companies are used as dependent variables. In order to reach at the final conclusion, the study employed a descriptive research design. The multiple linear regression and correlation was used to analyze data for the study by using the SPSS

The finding which obtained by using the SPSS indicates that, an insignificant positive relationship between financial performance of insurance firms and GDP growth rate and inflation and an insignificant negative relationship between financial performance of 22

Insurance firms and lending rates, exchange rates and money supply. From this finding the study concluded that there is direct relationship between economic growth, inflation and an inverse relationship between lending rates, exchange rates and money supply and financial performance of insurance firms operated in Kenya.

Based on the findings, the study recommended that the government and ministries of finance and planning should undertake measures to ensure good performance of the economy. Despite to that, the government should undertake an effective mechanism to maintain that inflations rate, lending rates, exchange rates and money supply those do not have adverse effects on financial performance of firms.

Hussain (2015) investigates the relationship between macro economy and profitability of 39 insurance companies in post crisis scenario operated in Pakistan by using firm level and macroeconomic data from the period of 2006-2011 through panel data. The study consists of some firm specific factors such as firm size, financial leverage, growth opportunity, diversifications, underwriting risk, working capital management, equity market and macroeconomic variables like inflations. Whereas, return on asset (ROA) is used as the proxy of measuring profitability. In order to analysis the data, the popular statistical model of panel data analysis that combines cross section and time series data and estimates panel least squares regression of a standard model is used by the researchers.

The result of the studies shows that, macroeconomic environment, equity market conditions and inflation have a positive and significant impact on profitability of both life and non-life insurance companies in Pakistan whereas diversification is positively and significantly affect the profitability of the insurance companies.

Based on the finding, the study recommends that, the management of non-life insurance companies should also keep in view the macroeconomic environment, equity market conditions, inflation in addition to firm specific characteristics including financial leverage, relative firm size, financial soundness, and growth opportunities, underwriting risk and diversification in particular to manage profitability. Despite to that, the Takaful business managers should especially focus on underwriting risk, diversification and working capital management to manage their return on assets.

Mwangi and Murigu (2015) conduct the study on the topic entitled the determinants of financial performance in general insurance companies in Kenya for the period 2009-10 to 2012-13 for four consecutive years through panel data. Their study employing multiple linear regression analysis, with return on assets as the dependent variable. The study used leverage, retention ratio, underwriting risk, liquidity, size, management competence index, ownership, equity capital and age as an independent variable.

The OLS multiple regression model indicates that profitability was positively related to leverage, equity capital, management competence index and negatively related to size and ownership structure. The study did not find a relationship between performance and retention ratio, liquidity, underwriting risk and age. Based on the finding, the study recommends that the general insurers in Kenya to perform better if they should increase leverage, equity capital and quality of staff.

Saeed and Khurram (2015) conducted the study on determining factor of the financial performance among Pakistani non-life insurance companies for nine (9) consecutive years. The data used in the study is based on balanced panel of 24 non-life insurance entities operated in Pakistan from the period of 2005-2013. The financial performance is measured by the proxy of Return on Asset which is dependent variable. The study uses six major firm specific independent

variables such as size of firm, loss ratio, expense ratio, debt ratio, growth of premium and age of firm on performance depositions by return on assets a measure of the profitability. In order to extract the impact of selected factors, the Hausman test is employed to decide whether fixed or random effect model is appropriate for reaching at visible conclusion. The outcome of the study which analyzed by the fixed effect model put forward that age and loss ratio proves significant and negative impact on in determining performance of non-life insurance companies operated in Pakistan.

Based on the finding, the study recommends that management should make payments of only spot on claims and try to avoid fraudulent claims in order to increase their proceeds. The imminent studies must explore some peripheral factors coupled with inner ones to see the sights of the financial performance of insurance sector operated in Pakistan.

Moro and Anderloni (2014) conduct the study on the determinants of economic performances in the non-life insurance firms operating in the main European markets spanning from 2004 to 2012 by using the panel data for nine years. In order to end the study, the authors test the impact of several firm characteristics, such as dimension, capital structure and investment policies on economic performance. There are several independent variables used in the study including both firm specific and country specific such as leverage, size of the asset, size of the firm, reserve dimension, combination ratio, Financial contribution, Investment yield, premium to asset ratio, reinsurance ratio measured by the premium and reserve, Internationalizations, diversifications, financial market indicator, Insurance market relative dimension, insurance market growth and the firm status. The Return on asset and Return on equity is used as the measure of profitability which are dependent variable. Multiple regression is used to analyze the data through OLS.

The study finding demonstrates that ROA is differently affected both by firm specific variables and macroeconomic variables for insurance company like negatively impact by asset-size, by underwriting activity; whereas the strategic choices such as internationalization and diversification while it is positively affected by investment activity, by reserves' dimension and by asset turnover. Surprisingly, it is not statistically affected, by reinsurance activity. For macroeconomic variables, the relevance of financial markets has a positive effect on profitability while variables linked to the country insurance market seem to have no impact on profitability.

The cited firm-specific variables have the same impact on ROE, while the 2007 financial crisis and the subsequent economic crisis have a detrimental effect on shareholders' profitability. It is worth mentioning the positive relation with financial markets' dimension and the inverse relation with the rate of insurance market growth, which may result from the increase in competition in the non-life insurance industry.

Lee (2014) undertake the study on the relationship between firm specific factors and macroeconomics on profitability in Taiwanese property-liability insurance industry using the panel data over the 1999 through 2009 for ten consecutive periods. Two dependent variable such as operating ratio and return on assets for the two kinds of profitability indicators used to measure insurers' profitability and the impact of twelve independent variables which including underwriting, financial leverage, firm size, underwriting risk, firm growth, reinsurance, return on investment, market share, diversification, input cost, economic growth rate, inflation rates and financial holding. The multiple regression OLS model were used in the analyzing data and Random effect model were selected.

The finding of show that underwriting risk, financial leverage, reinsurance dependence, financial holding and input cost has significantly and negatively related with the ROA whereas return on investment is positively and significantly related with ROA. This finding implies that high underwriting risk, subsidiaries of financial holding group compared with other insurance companies leads the Property and Casualty insurance to lower profitability measured by ROA. In addition, economic growth rate has significant influence on profitability in operating ratio model but insignificant influence on profitability in ROA model.

Doumpos et.al., (2012) undertake the study is to estimate and explain the performance of non-life (property and casualty) insurers by using a sample of over 2000 non-life insurance firms operating in 91 countries between 2005 and 2009 for five continuous years. The secondary data that used in the study were analyzed through two stage analysis. The first stage proposes the use of a multi-criteria method to assess the condition of insurers while considering simultaneously a set of conflicting financial criteria. Then, the second stage used the regression analysis to examine the influence of firm-specific and country-specific attributes on the overall measure of performance obtained during the first stage.

Based on their model, the regression result that demonstrates that macroeconomic indicators such as real GDP growth, inflation, and income inequality influence the overall performance of firm's non-life insurance industry operated in those selected countries. Macroeconomic conditions such as gross domestic product (GDP) growth, inflation, and income inequality are the most robust predictors of performance. However, other country-specific characteristics that relate to the institutional environment and financial or economic freedom do not appear to matter. Inflation and Loss ratio is negatively and significantly related to the profitability of non-life insurance companies in this studies. In addition to that, the result of the study dictates stock market development also has a positive effect on performance whereas inflation has negative and significant impact. In contrast, other indicators of the banking and capital market development such as the insurance premium to GDP, bank credit to GDP, and insurance and financial services as percentage of import services are not significant. Similarly, the institutional development and the overall freedom in the financial services industry do not exercise a statistically significant effect on overall performance.

Pervan and Kramaric (2012) investigate the influence of market share and diversification on non-life insurance performance for eleven (11) consecutive years from the period of 1999-2009. For the purpose of conducting their study internal variables like firms' profitability from previous years, market share, diversification. control variables like ownership, industrial concentration, GDP per capita and inflation are used whereas ROA is used as a measure of the dependent variable. According to their studies the underlying relationships have been investigated in different industries and different disciplines states that still there is no consistency exists either in the magnitude or statistical significance of the relationship between market share (and diversification as well) on one side and companies' performance on the other side. Therefore, the direction of the relationship is also somewhat questionable. While some authors find this relationship to be positive, the others reveal its negative association.

The impact of six independent variables such as firms' profitability from previous years, market share, diversification and control variables (i.e. ownership, industrial concentration, GDP per capita, inflation) on non-life insurance is companies' performance is tested on the empirical model by employing two-step generalized method of moments (GMM) estimator in the study. Based on the result from the model, there is evidence of a negative and statistically significant

influence of diversification and inflation on insurers profitability whereas market share, GDP and past profitability is positive and statistically significant impact on profitability.

2.2.2. Empirical studies in Ethiopia

This section reviews only studies conducted in Ethiopia in order to reach at the knowledge gap in this study. When coming back to the context of Ethiopia, there appears to be very few works on the assessment of determinants of profitability in insurance companies in Ethiopia as the researcher's best knowledge.

Worknesh (2017) has assessed the effect of market share on profitability in Ethiopian insurance companies. The source of data was secondary and a quantitative research method was adopted. A panel data of Ten insurance companies financial statements that covering a year period from 2005-2014. The dependent variable used to indicate performance was ROE and the major independent variable was market share and size, tangibility and liquidity used as control variables. The findings of the study revealed market share and size are a positive and significant relationship with the profitability of the Ethiopian insurance industry. On the other hand, there is a negative relationship between tangibility and liquidity in relation to profitability.

Demis (2016) conducted the study on macroeconomic and firm specific determinants of profitability of insurance industry in Ethiopia. The study considers the firm specific factors which consist of age of company, size of company, leverage ratio, liquidity ratio, premium growth, technical provision, underwriting risk, solvency, re-insurance dependency and tangibility of assets and macroeconomic factors; GDP and Inflation on profitability of Ethiopian insurance industry.

The study identifies that underwriting risk, technical provision, leverage and inflation have negative and significant effect whereas premium growth, age of the company, solvency ratio and GDP have statically positive and significant effect on the profitability of Ethiopian insurance industry. However, the study found that liquidity, re-insurance dependency, tangibility of assets and company size have no significant effect on the profitability of insurance industry in Ethiopia. Based on the finding, the study suggests that, insurance companies should critically consider

underwriting risk and should minimize the accumulation used for technical provision and the level of leverage.

Simon (2016) investigate the internal factors affecting financial performance of insurance companies in Ethiopia by using the panel data over the period of 2005 to 2012. The Return on Asset was used as a proxy for measuring profitability which is dependent variable. The independent variable was identified from the annual audited financial statements such as balance sheet and the income statements. The data that collected from the financial statements of insurance companies is analyzed with the multiple regression analysis by using the STATA version 11.0. The finding of the study demonstrates that leverage ratio, liquidity ratio, company size, Management competence index and company growth rate are influential factors of financial performance. But, age of company and loss ratio has no effect on the financial performance of Insurance Companies in Ethiopia.

Base on the finding of the study, the author recommends that high consideration of increasing the company assets, using internal sources of financing and having highly qualified employees in the top managerial staff is advisable for insurance companies currently operating in Ethiopia to enhance their performance.

Gemechis(2017) investigate determinants of profitability of non-life insurance sector in Ethiopia. Source of data for the study was a secondary data that collected from twelve (12) insurance companies for a period of six years (2010/11-2015/16) with a total of 72 observations through panel data. The dependent variables were ROA as a proxy of profitability and the independent variables were industry concentration ratio, leverage, diversification, underwriting risk, reinsurance dependence, GDP, inflation and liquidity. The finding revealed that the industry concentration ratio and leverage have a statistically significant and positive relationship with profitability. On the other hand, diversification, underwriting risk and reinsurance dependence have a negative and statistically significant relationship with profitability. Based on this finding, the study suggests that the management bodies of the insurance companies should give high attention on firm and industry related variables, particularly by adopting better risk management strategies and better internal control to achieve superior profitability.

Mistire (2015) has studied the determinant of profitability on insurance sector in Ethiopia. The study investigates both of the firm specific variables and macro-economic variables by using sample of nine companies over period duration of 2003 to 2014 by collecting through panel data and primary data. The firm specific variables used in this study include age of companies, size of companies, leverage, tangibility of assets, liquidity, premium growth, loss ratio, reinsurance dependence, solvency margin and the macroeconomic variable used in the is only GDP growth rate. The finding of the study states that loss ratio and leverage ratio is significant and negative impact on profitability of insurance companies, whereas all other variables have positive and significant impact on profitability. Based on the finding the study recommends that the management of the companies should pay great attention on ways to increasing the company assets, ways to control the companies leverage and finally the companies must employee highly qualified stuffs at top management position to get from the customer acceptance in Ethiopian general insurers.

Hanna (2015) conducted the determinant of profitability in Ethiopian insurance companies by considering both external and internal factors. The internal independent variables used in the study is company size, leverage, liquidity, firm growth, age, volume of capital and tangibility are used. Moreover, as external explanatory variables, inflation and GDP are used. The return on assert were used as the proxy of measuring profitability. In the study, a panel data covering the period of 2005 to 2014 are analyzed for a sample of nine insurance companies to reach on the final conclusions.

The finding of the study shows that 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 as well as 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.

Based on the finding the authors recommend that an insurance company's management and investors should focus on how they promote the growth which significantly affects the profitability since the sector is still at the early stage of development.

Hailegebreal (2016) evaluate determinants of the Profitability of Insurance Industry in Ethiopia. This study was conducted on the determinants of profitability of the Ethiopian insurance industry. The study attempts to examine the firm specific factors which are the age of the company, the size of the company, leverage ratio, liquidity ratio, premium growth, technical provision, underwriting risk, solvency, re-insurance dependency and tangibility of assets and macroeconomic factors; GDP and Inflation on profitability of the Ethiopian insurance industry. Nine insurance companies from the total of 17 insurance companies established before 2008 were included in the study. Secondary data that were collected from the financial statements (Balance sheet and income statements) of insurance companies; and annual reports of National bank of Ethiopia are the major sources of data for this study. This study found that underwriting risk, technical provision, leverage and inflation have a negative and significant effect, whereas premium growth, age of the company, solvency ratio and GDP have a statically positive and significant relationship with the profitability of the Ethiopian insurance industry.

Yuvaraj and Abate (2013) examine the profitability of insurance companies in Ethiopia. A nine insurance company for nine years(2003-2011) panel data was used. The independent variable of the researcher was age, size, volume of capital, leverage, liquidity, growth and tangibility and the dependent variable was ROA for proxy of profitability. Source of data for the study was a secondary audited financial statement of the insurance companies. The study results that growth, leverage, the volume of capital, size and liquidity are identified as most important determinant factors of profitability hence, growth, size and volume of capital are positively related to profitability whereas liquidity and leverage are negative, but significantly related to profitability. The other one which is age and tangibility is found that no significant effect on profitability.

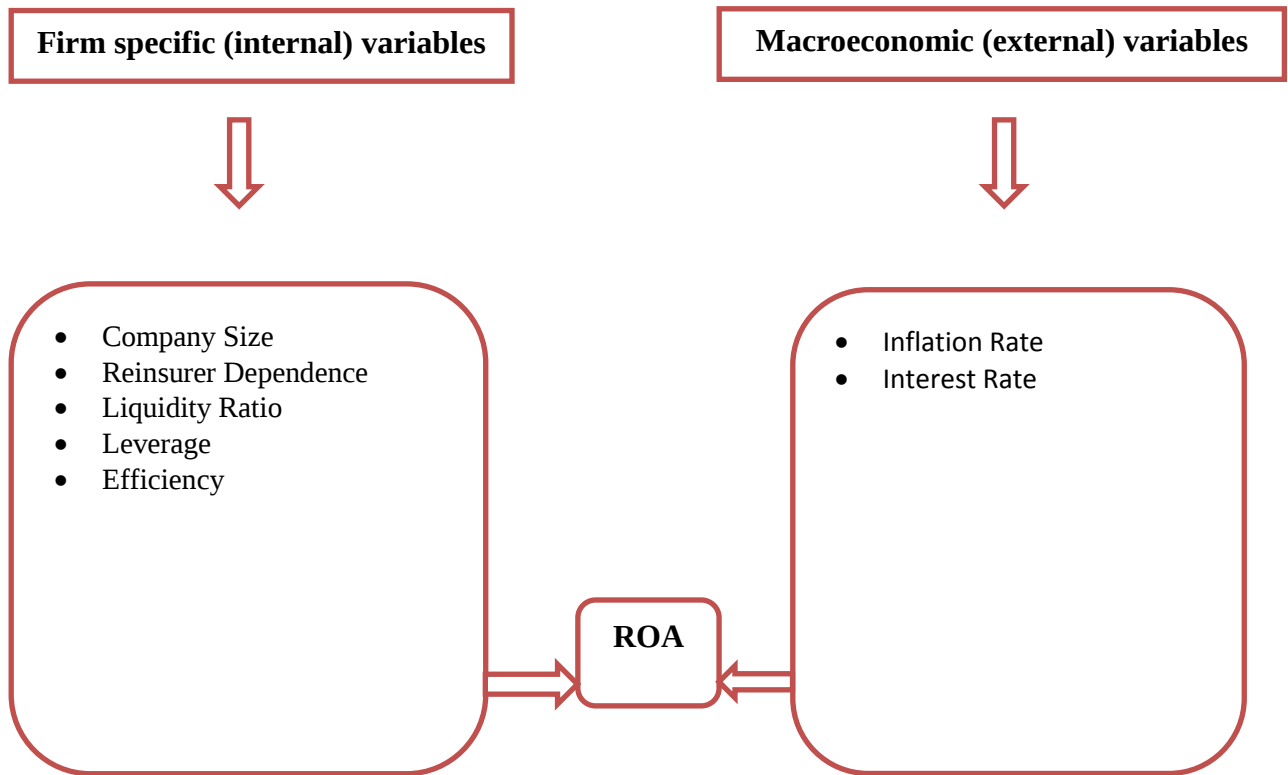
2.3. Knowledge gap, conceptual frame work and concluding remarks

As highlighted from the above empirical reviews, a large number of studies has been investigated on the factors determining profitability in different jurisdictions. But a scanty of study had been conducted in the selected area from developing countries as far as the researcher

concerned and they are also insufficient in amount. For instance, in order to conduct this study, some of the literatures were taken from Pakistan, Kenya, India, Taiwan, Nigeria and other Europe countries for an intention of identifying non-life insurance business profitability determinants. Some of the previous researches that conducted on these jurisdictions as well as in Ethiopia have also documented unclear results on relationship between profitability which measured by return on asset and some other variables used to measure it as a proxy. For instance, Mazviona et.al., (2017), Sumaira and Amjad (2013) and Lee and Lee (2012) indicates that, financial leverage of the non-life insurance companies is positively related with profitability. Whereas, Kozak (2011) and Kazeem (2015) found inverse relationship between leverage and profitability of general insurers. Despite to that, Mazviona et.al., (2017), Daare (2016), Kazeem (2015) and Lee and Lee (2012) found positive relationship between ROA and the firm liquidity.

When we consider the context of Ethiopia, some of few researches are conducted in the area of factor determining insurance companies' profitability; particularly in non-life insurance. Accordingly, those studies clearly failed to identify macro-economic factor, lending interest rate and lacked consistency in their findings.

In addition this section provides conceptual framework that was guide the study. According to Becker (1998), the conceptual framework grounds the study in the relevant knowledge bases that lay the foundation for the importance of the problem statement and research questions or hypothesis. In addition to that, a conceptual framework is made up of theoretical and empirical work relevant to investigate specific purpose. Therefore, the study conceptual framework consists of seven independent variables namely reinsurance dependence, leverage, liquidity, company size, company efficiency, inflation rate, and interest rate. The independent variable influences the profitability of the selected non-life insurance companies in Ethiopia which is the dependent variable. The conceptual framework that designed and paraphrased by the researchers from previous studies will represent in the following diagram.



Sources; Own compiled from literatures

Figure2.1: Conceptual framework of variables used in the fixed effect model

Chapter Three

3. Research Methodology

3.1 Introduction

This chapter specifically gives a brief description of the research method that is employed to capture determinant factors of profitability in Ethiopian non-life insurers. This include a detail description of quantitative research design tools which embrace research approaches and design adopted, sample design of the study, data type, source and the data collection mechanism, variable definition and hypothesis development, empirical model specification, type of data analysis and link between hypothesis and data source are also discussed.

3.2. Research Method

The methodology of carrying out this research was based on the objectives of the paper and the availability of relevant information. The decision to choose a specific methodology should be based on its suitability to achieve research objective. Saunders, et al., (2009) asserted that qualitative research emphasizes the process of discovering how the social meaning is constructed and stresses the relationship between the investigator and the topic studied. Conversely, quantitative research is based on the measurement and the analysis of causal relationships between variables. Therefore to comply with the objective of this research, this paper is primarily based on quantitative research, which constructed an econometric model to identify and measure the determinants of financial performance.

3.3. Type and Source Data

In this study, the researcher used secondary type of data which are obtained from annual reports of the National Bank of Ethiopia and insurance companies. The study covers selected private insurance companies, which have been in operation under the period of 2010 to 2017. It incorporated 7 non-life insurance companies based on the availability of data for achieving the stated objectives shown in Table 3.1. The data collected and analyzed is a balanced panel of 7 non-life insurance companies in Ethiopia operating over the last 8 years. Panel data selected by the researcher in order to meet the research objectives as it best fits better than the single time

series or cross-sectional alone. Panel data analysis is a method of studying a particular subject within multiple sites, periodically observed over a defined time frame.

Using panel data have the following advantages. First, and perhaps most importantly, we can address a broader range of issues and tackle more complex problems with panel data than would be possible with pure time-series or pure cross-sectional data alone. Second, it is often of interest to examine how variables, or the relationships between them, change dynamically (over time). To do this using panel data by combining cross-sectional and time series data, one can increase the number of degrees of freedom, and thus the power of the test, by employing information on the dynamic behavior of a large number of entities at the same time and combining the data in this way can also help to mitigate problems of multicollinearity that may arise if time series are modeled individually. Third, structuring the model in an appropriate way, we can remove the impact of certain forms of omitted variables bias in regression results. Therefore the combination of time series with cross-sections can enhance the quality and quantity of data in ways that would be impossible using only one of these two dimensions (Chris, 2008).

Table 3.1: List of Insurance Companies Selected for the Study

No	Insurance companies	Type	Date of establishment
1	National Insurance Company of Ethiopia S.C	General	23/09/1994
2	Awash Insurance Company S.C	General	1/10/1994
3	Africa Insurance Company S.C	General	1/12/1994
4	Nyala Insurance Company S.C	General	6/1/1995
5	Nile Insurance Company S.C	General	11/4/1995
6	Global Insurance Company S.C.	General	11/1/1997
7	The United Insurance S.C	General	1/4/1997

Source: NBE, (2018)

3.4. Development of Hypothesis and Operational Definitions of Variables

In order to determine the factors that influence the financial performance in the Ethiopian insurance market during the interval 2010 – 2017, seven explanatory variables were tested: company size, reinsurer dependence, liquidity ratio, inflation rate, lending interest rate, financial leverage, and efficiency. As for the dependent variable, the financial performance of the insurance companies is measured through the return on total assets ratio. It is expected that the evolution of the independent variables to explain the evolution of the dependent variable.

3.4.1. Dependent Variable

According to Nguyen (2006) to measure the profitability of insurance companies, there are a variety of ratios of which are Return on Asset (ROA), Return on Equity (ROE) and Net interest margin (NIM). However, the choice of the profitability ratio depending on the objective of the profitability measure. ROA is a better measure of insurance profitability than others since ROA indicates how capable the management of the insurance has been in converting the institution's assets into net earnings (Malik, 2011). The ROE is a measure of the rate of return flowing to the insurance's shareholders. This measure of profitability is the most important for insurance's stockholders because it reflects what the insurance is earning on their investment. On the other hand, the NIM variable is defined as the net interest income divided by total assets. It focused on the profit earned by on interest activities. Therefore, ROA is used as a better measure of profitability than other ratios and it reveals how much profit a company earns for its assets (Malik, 2011). ROA as a proxy of insurance profitability used by many researchers like Yuvaraj and Abate (2013), Pervan et al. (2012) Malik (2011), Meaza (2014) and Gemechis (2017). Return on asset (ROA) in the company measures the ratio of net income after tax for its total asset of the given companies (Tomislava et al, 2017).

3.4.2. Independent Variables

In this study, five firm specific (internal related) variables, and two macroeconomic variables affecting the profitability of Ethiopian general (Non-life) insurance business were used. From the numerous potential determinants of profitability identified in previous similar studies; company size, reinsurer dependency, liquidity ratio, inflation, interest rate, leverage and efficiency. Therefore, in order to achieve the objectives of this study, the variable was defined and the

hypotheses were originated from the literature to give the key factors that determine profitability of general insurance companies operating in Ethiopia as follows.

Company Size (CSZ): Insurance size is associated with diversification which may impact favorably on risk and product portfolio. On the other hand, increased diversification can reduce risk in the business portfolio thereby reducing returns. Insurers that have become extremely large may exhibit negative relationship between size and profitability as a result of bureaucracy and agency cost. (Hardwick, 1997) suggested that large insurers are likely to perform better than small insurers because they can achieve operating cost efficiencies through increasing output and economizing on the unit cost of innovations in products and process development. The research conducted on the relationship among firm characteristics size and growth by Swiss Re (2008) indicated that large firms are found to grow faster than smaller and younger firms found to grow faster than older firms.

Several studies have been conducted to examine the effect of size on the financial performance of insurance companies. Most of the researchers in insurance have found a positive relationship between size and profitability. For example, Demirguc & Maksimovic (1998) and Sommer (1996) have established a positive correlation between size and profitability. Also, Asimakopoulous et al. (2009) found that the profitability of companies is positively impacted by company size. Browne et al. (2001) has shown empirically that company size is positively related to the financial performance of US life insurance companies. Moreover Almajali et al. (2012) surveyed 25 insurance companies of Jordan during the period 2002-2007 by using a number of basic statistical techniques such as T-test and Multiple-regression. The results showed that Size has a positive statistical effect on the financial performance of Jordanian Insurance Companies.

In this study company size is computed as 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. Thus, the researcher formulates the following hypothesis:

Ho1: company size has positive and statistically significant effect on Ethiopian non-insurers' financial performance

Reinsurer Dependence (RED): - The reinsurance dependency is measured by the ratio of gross written premiums ceded in reinsurance to total assets (Lee and Lee, 2012; Burca and Batrinca, 2014). It is used to reduce the risk of bankruptcy when the insurers are subject to higher losses (Suyehli, 2015). Some of the studies conducted on the impact of reinsurance dependence on profitability of non-life insurance companies indicate different result such as Burca, and Batrinca (2014) and Moro and Anderloni (2014) found positive insignificant relationship between reinsurance and ROA, Datu (2016) found positive significant relationship between profitability and reinsurance dependence, suggesting that the non-life insurance business with higher reinsurance significantly have higher profitability from their firm. However, the studies that conducted by Kozak (2011), Jovovic et.al., (2014), Mistire (2014), Lee and Lee (2012), and Lee (2014) found negative relationship between reinsurance dependency and profitability, suggesting that the property and causality insurance business who have higher reinsurance dependence report low profit in comparison to premium they received from the policyholders and asset they own. Therefore, in this study the negative relationship is anticipated for the relationship between profitability (ROA) and reinsurance dependence. Therefore, the researcher formulates its hypothesis as follows:

Ho2: Reinsurer dependency has a negative and statistically significant effect on Ethiopian non-life insurers' financial performance.

Liquidity ratio (LQR): - Liquidity measures the capability of an insurers to fulfill their immediate commitment to policyholders and other creditors without having to increase profits from underwriting activities and investment activities and/or liquidate financial assets or when they due (Mwangi and Murungi, 2015). It is measured by ratio of current assets to current liabilities and indicate an organizational ability to meet its current obligations when they fall due (Burca and Batrinca, 2014; Kazeem, 2015). The influence of liquidity on insurance company's profitability is unclear. There are two possible scenarios. The first scenario indicates insurance company who has high amount of current asset is more profitable; whereas the second scenario indicates the insurance companies who have more current asset is less profitable. This variable

widely associated with the accounting result which allows companies to enjoy a higher liquidity when better financial performance is achieved. Therefore, the results obtained from of evidence of previous studies are more expresses the positive relationship between liquidity and profitability. In line with the arguments of first scenario, the result that anticipated in this study is positive.

Ho3: Liquidity ratio has a positive and statistically significant effect on Ethiopian non-life insurers' financial performance.

Inflation rate (INF): - Inflation occur when the general price of goods and services increase over time. Inflation is a general increase in the overall price level of the goods and services in the economy (Hadush, 2015). Theoretically, the low level of inflation enhances the financial performance of insurance firms. The inflation is measured based on general annual increase change rates of consumer price Index (Hussain, 2015 and Suyehli, 2015). The relationship between consumer price index and profitability of insurance companies are not the same across the country. For instance, research conducted by Datu (2016) in Mississippi and Hussain (2015) in Pakistan reveals positive links between inflation and profitability which implies that high inflation rate may lead to irrational pricing and consequently high levels of earned premium for insurance which leads to increase in profitability. In opposite to that, the research conducted by Daare (2016) in India, Lee (2014) in Taiwan, Pervan and Kramaric (2015), Suyehli (2015) in Ethiopia, Hana (2015) in Ethiopia, Asrat and Tesfahun (2016) in Ethiopia, Meaza (2015) in Ethiopia, Teklit and Jasmindeep (2017) in Ethiopia and Hadush (2012) in Ethiopia reveals negative insignificant relationship between profitability and inflation whereas Jibran et.al., (2016), Doumpost et.al., (2012), and Demis (2016) reveals significant 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. Therefore, the current study anticipated negative relationship between inflation rate and profitability of the firms measured by ROA and the researcher formulates the following null hypothesis as follows:

Ho4: Inflation rate has a negative and statistically significant effect on Ethiopian non-life insurers' financial performance.

Interest rate (ITR): -The classical theory about was put forward by Keynes (1936). The theory holds the proposition based on the general equilibrium theory that the rate of interest is determined by the intersection of the demand for and supply of capital. It is fairly clear, however, that this tradition has regarded the rate of interest as the factor which brings the demand for investment and the willingness to save into equilibrium with one another. Investment represents the demand for investable resources and saving represents the supply, whilst the rate of interest is the “price” of investable resources at which the two are equated. Just as the price of a commodity is necessarily fixed at that point where the demand for it is equal to the supply, so the rate of interest necessarily comes to rest under the play of market forces at the point where the amount of investment at that rate of interest is equal to the amount of saving at that rate. An equilibrium rate of interest is determined at a point at which the demand for capital equals its supply according to Caplan (2000).

It follows that savings and investment are the two real factors determining the rate of interest (Fredman, 1991). If the level of income is assumed to be given, we can infer that the current rate of interest must lie at the point where the demand curve for capital corresponding to different rates of interest cuts the curve of the amounts saved out of the given income corresponding to different rates of interest.

Interest rate is expected to negatively affect financial performance of non-life insurance companies.

Ho5: Interest rate has a negative and statistically significant effect on Ethiopian non-life insurers' financial performance.

Leverage (LEV): - Leverage is the amount of debt used to finance a company's assets. It was measured by total debt to total equity value (Capital and reserve) of the company (Mehari and Aemiro, 2013; Asrat and Tesfahun, 2016). Insurer generate leverage from unearned premiums, from unexpired policies and any outstanding claim amount (Lee, 2014). A large insurance companies who has high total gross written premium have a higher leverage coefficient (Pervan

and Kramaric, 2012). Leverage measures the degree to which a business is utilizing debt fund (Kazeem, 2015). Therefore, the studies conducted by the by Simon (2016), Kazeem (2015), Sumaira and Amjad (2013) and Ayele and Sambasivam (2013) states that bad investments decisions lead to a negative leverage-profitability relationship which suggesting that highly leveraged companies tend to achieve less profitability of the non-life insurance business. However, the studies conducted by Teklit and Jasmindeep (2017), Malik (2011), Sumaira and Amjad (2013), Ayele and Sambasivam (2013), Jovovic et.al., (2014) and Mehari and Aemiro (2013) have found evidence in support of a positive relationship which suggesting that a highly leveraged insurer has better enjoyed financial performance achieved. Therefore, these conflicting results provide genuine incentives for further investigation of this relationship. From the above theoretical explanations, the researchers anticipate that the relationship between the profitability of the general insurance companies and leverage is negative sign.

Ho6: Firm leverage has a negative and statistically significant effect on Ethiopian non-life insurers' financial performance.

Efficiency

Efficiency measurement used to examine the performance of firms by computing the relative efficiency of each firm (ElingandLuhnen, 2010). Efficiency described an evaluation of the relationship between inputs and outputs in the production process. Efficiency structure hypothesis (ESH) affirms that the most efficient firms, with better organization and management of their resources, are more profitable (Demsetz, 1974). High performance reflects management efficiency in making use of the company's resources and this in turn contributes to the country's economy at large (Nasser and Mokhtar, 2004).According to Boone (2008), an efficient firm will gain a higher market share and realize higher profits than a less efficient one. Firms are punished more harshly for being inefficient. Hence, in more competitive markets, efficient firms perform better – in terms of market share and profits – than inefficient firms. Empirical studies on efficiency and profitability of insurance companies revealed that most researchers claim a more efficient insurance company should have growth in profits since it is able to maximize on its net premiums and net underwriting incomes. For instance, Thomas et al. (2011), Choi and Weiss (2005), Meaza (2014), Almajaliet al. (2012) and Murigu (2015), identified a strong positive

association between efficiency and profitability. The efficiency in insurance companies can be computed as an expense and claim payment (Input) to Gross written premium (Output) of the insurance (Datu, 2016).

Ho7: Efficiency has a positive and statistically significant effect on Ethiopian non-life insurers' financial performance.

Therefore, this paper employed a secondary annual panel data on the dependent variable called profitability which was measured by return on asset. The description of the variables and their expected result or signs for the variables in the model presented as follows: -

Table 3.2: Operational definition, measurement and the expected sign of variables

Category	Variables	Measurement	Notation	Expected Sign
Dependent	Return on Asset (ROA)	Net income after tax/Total Asset	ROA	
Explanatory Variables	Company Size	Logarithm of total asset	CSZ	+
	Reinsurer Dependence	Gross written premiums ceded in reinsurance/total assets	RED	-
	Liquidity	Current Asset /Current Liabilities	LQR	+
	Leverage	Total Debt/ Total Capital and Reserve	LER	-
	Efficiency	Expense and claims/ Gross written premium	EFF	+

3.5. Data Analysis and Presentation

The collected data has been analyzed by using descriptive statistics, correlations, and multiple linear regression analysis by using E-views 8 software.

3.5.1. Descriptive Analysis

The descriptive study has been presented by using mean, standard deviation, minimum and maximum for each variable for Ethiopian insurance companies during the period of 2010-2017.

3.5.2. Correlation Analysis

The correlation of the study has been used to indicate the nature, direction and significance of the relationship between the dependent and independent variables.

3.5.3. Multiple Regression Analysis

The Multiple regression analysis has been used to examine the magnitude of the relationship between the financial performance of Ethiopian non-life insurance companies and independent variables such as company size, reinsurer dependency, liquidity ratio, inflation rate, lending interest rate, leverage and efficiency. This method is used when independent variables are correlated with one another and with the dependent variable (Al-shami 2008). The result of a regression analysis is an equation that represents the best prediction of a dependent variable from several other independent variables.

Based on the hypotheses, the researcher builds multiple regression of the econometric model through which the financial performance of the insurance companies in the Ethiopian market is analyzed:

$$ROA_{it} = \beta_0 + \beta_1 (CSZ)_{it} + \beta_2 (RED)_{it} + \beta_3 (LQR)_{it} + \beta_4 (IFR)_{it} + \beta_5 (ITR)_{it} + \beta_6 (LEV)_{it} + \beta_7 (EFF)_{it} + U_{it}$$

Where:

Coefficient of variables and Error term

β_0 = coefficient of Intercept (Constant)

β_1 = coefficient of company size

β_2 = coefficient of reinsurer dependency

β_3 = coefficient of Liquidity

β_4 = coefficient of inflation rate

β_5 = coefficient of interest rate

β_6 = coefficient of leverage

β_7 = coefficient of efficiency

u = The Error Term

ROA – return on total assets ratio;

CSZ –company size;

RED– reinsurer dependency;

LQR– liquidity ratio;

IFR – inflation rate;

ITR – lending interest rate;

LEV – leverage;

EFF – efficiency;

All the variables are organized in a balanced panel database, which have been analyzed by applying models with random effects. Panel data comprised data sets consisting of multiple observations for each sampling unit. By using panel data, we can get better estimations and we can test more sophisticated behavioral models, with less restrictive assumptions (Baltagi, 2008). Working with panel data allows using various techniques to estimate models with specific effects. The cross-sectional or cross-temporal specific effects can be identified and analyzed by using techniques for random effects.

The fixed effect and random effects has been processed through Hausman specification test (1978). Keeping in view more number of companies and short time duration of study, we processed short panel data type according to Baltagi (2008).

3.5.3. Panel Data

To examine determinants of financial performance for insurance companies' panel data technique has been used. With the aspect of heterogeneity, Panel data procedure carry merits compared with cross-sectional and time series regression. There is maximum possibility of heterogeneity in time series regression and cross sectional regression than panel data analysis. In addition to that panel data procedures give maximum useful information and collinearity among variables is minimum and generalized.

3.5.3.1. Fixed Effect Model

One of the types of panel data is fixed effect model. In regression model, fixed effect model give partiality because of excluded variables. In fixed effect model, intercept are unlike for individuals while the slope of coefficients are constant (Gujarati, 2004; Baltagi, 2008). This model is used for robustness in the result. This test has been carried out with robust standard errors where Heteroskedasticity has been investigated in data.

3.5.3.2. Random Effect Model

Random effect model has been used which is the type of panel data analysis. In random effect model, the value of intercept is the mean of overall intercepts of the cross sectional units whereas fixed effect model gives fixed value to the intercept of the cross sectional unit (Gujarati, 2004). This model is used for robust errors, where Heteroskedasticity is found in data.

3.5.3.3. Hausman Specification Test

The Hausman specification test matches up fixed and random effects with null hypothesis Individual effects are not related with other regressors in the model (Hausman 1978). If correlated (H_0 is rejected), random effect model will create unfair estimators and will abuse one of Gauss–Markov assumptions. In this situation fixed effect model is favorite choice. Hausman's essential result is that covariance of an efficient estimator with its difference from an inefficient

estimator is zero. If p-value is more than 0.05, we test random effect models and if it is minimum than 0.05, than choice will be fixed effect model.

Chapter Four

4. Result and Discussion

This Chapter deals result and discussion of the study. 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 presents and explains the result of regression outputs of the effect of market structure on profitability in Ethiopian non-life insurance profitability.

4.1. Descriptive Statistics

The distribution of the data set or dependent and independent variables used in the study are explained by descriptive statistics. The summary of descriptive statistics is presented to determine the minimum, maximum, mean and standard deviation for dependent variable (Return on Asset) and Independent Variables (Company size, Reinsurer dependency, Liquidity ratio, Inflation, Interest rate, Leverage, Efficiency). The following table summarized the descriptive statistics of Ethiopian private non-life insurance for 56 observations (Seven non-life insurance data of eight years 2009/10-2016/17 GC).

Table 4.1 Summary of descriptive statistics

	ROA	RED	LQR	LEV	EFF	CSZ	INF	ITR
Mean	0.084	0.143	0.978	2.061	0.616	8.596	13.525	12.143
Median	0.090	0.120	0.985	1.830	0.615	8.670	9.000	11.88
Maximum	0.140	0.549	1.630	4.630	0.870	9.100	33.20	12.75
Minimum	0.002	0.001	0.260	0.890	0.330	7.810	7.300	11.875
Std. Dev.	0.034	0.134	0.251	0.797	0.139	0.291	9.157	0.373
Observations	56	56	56	56	56	56	56	56

Source: E-views 8 outputs

4.1.1. Descriptive Analysis of dependent variable

As shown in the above, the dependent variable used to measure profitability is Return on Asset (ROA) and calculated profit after tax divided by the total asset. It can observe clearly on the above tables, the mean value of ROA was 0.084(8.4%). This means that on average private non-life insurances has been earning 8.4% on their asset during the study period. In addition, the maximum value of 0.14 (14%) and a minimum of 0.002 (0.2%) were observed. The standard deviation of return on asset was 0.034 which implies that the volatility of return on the asset from the mean value that indicates the profitability of non-life insurance company operating in Ethiopia varies from the mean by 3.4% during the study period.

4.1.2. Descriptive analysis of independent variables

In relation to the independent variables, the descriptive statistics of company size indicated in the above table that mean value of 8.596 which shows the size of non-life companies during the study period measured in logarithm of total asset. The maximum and minimum insurance company sizes were 9.1 and 7.81 respectively. Whereas a standard deviation of 0.02785 (2.78%) indicates high dispersion of market share was available in the selected period of the study.

The second independent variable was Reinsurer dependence and its descriptive statistics indicate an average 0.143 (14.3%) of the non-life insurance has shown dependence on Reinsurer during the selected period. The Reinsurer dependence ratio are ranging from the maximum of 0.549 (54.9%) to the minimum of 0.001 (0.1%). The standard deviation of Reinsurer dependency indicated in the above table was 0.134 (13.4%).

The third variable was liquidity ratio and the above table depicts a mean value of 0.978 which implies the average liquidity ratio of non-life insurances operating in Ethiopia under the study period. The average value of 0.978 indicates that for each one Birr current liability there was 0.978 cent current assets to meet the obligation. The maximum and minimum values for the liquidity variable are 1.63 and 0.26 respectively, and standard deviation is 0.25 which indicates the difference of relative liquidity ratio among the non-life insurance industry.

The fourth independent variable was Inflation rate and it is among the macroeconomic explanatory variables used in this study. Inflation is the general increase in price of goods and services in the economy and is measured in terms of consumer price index. The descriptive statistics of the above table show the average values of inflation generally in the economy in the past eight years (2010 to 2017) was 13.5. The maximum and minimum values of the liquidity ratio are 33.2 and 7.3 respectively. The standard deviation of the inflation rate was 9.15. As presented table 4.1 inflation rate had high standard deviation of 9.15% and this implies that inflation rate in Ethiopia during the study period remains somewhat unstable.

The other macroeconomic explanatory variable used in this study is average lending interest rate. The descriptive statistics of the above table show the average values of lending interest rate generally in the economy in the past eight years (2010 to 2017) was 12.14. The maximum and minimum values of lending interest rate were 12.75 and 11.87 respectively. The standard deviation of the lending interest rate was 0.3732. As presented table 4.1 lending interest rate had low standard deviation of 0.37% and this implies that lending interest rate in Ethiopia during the study period remains somewhat stable.

The other independent variable was Leverage. The ratio of total liability for total owner's equity on average indicates 2.06. The average shows that the non-life insurance that operates in Ethiopia under the study uses debt than equity for their financial purpose. The non-life insurance for this study indicates a maximum of 4.63 and a minimum of 0.89 with its standard deviation of 0.79.

The last explanatory variable used in this research was efficiency measured through expenses and claims over gross written premium. Efficiency depicted average value of 0.616. The non-life insurance for this study indicates a maximum of 0.87 and a minimum of 0.33 with its standard deviation of 0.139.

4.2. CLRM Assumption and Diagnostic Test

Brook (2008) noted that the data validity of the regressed result of the research is maintained through the classical linear regression model CLRM assumptions in order to pinpointing the model misspecification and correcting them so as to augment the research quality. The diagnostic test is made in order to make sure that the classical linear regression model assumption is violated or not. Therefore, in this study, an attempt is made to CLRM Assumption such as test of Heteroscedasticity, Autocorrelation, Normality and Multicollinearity in which their result is presented and discussed on the following section.

4.2.1 Heteroscedasticity

It is a test that made in order to check whether error terms variance is constant (homoscedasticity) or not (heteroscedasticity). Theoretically, the variance of the errors term is constant, which is known as the assumption of homoscedasticity. If the errors (disturbance) terms do not have a constant variance, they are said to be heteroskedastic (Gujarati, 2004). In order to achieve this, the White test is used as most popular test of homoscedasticity (Brooks, 2008). Therefore, this study is used the white test to test the assumption of the homoscedasticity as represented in the following table 4.2. In this case, the result is presented in table 4.2 which indicates, both the F-statistic and Chi-Square versions of the test statistic gave the same conclusion that there is no evidence for the presence of heteroscedasticity in this particular study, since the p-values are considerably in excess of 0.05. Therefore, the null hypothesis that the variance of the errors is constant (homoscedasticity) should not be rejected (failed to reject). There is no problem of heteroscedasticity.

Table 4.2: Heteroscedasticity test: White test

Heteroskedasticity Test: White

F-statistic	0.991727	Prob. F(35,20)	0.5227
Obs*R-squared	35.52859	Prob. Chi-Square(35)	0.4433
Scaled explained SS	27.53121	Prob. Chi-Square(35)	0.8117

Source: E-views 8 outputs

4.2.2. Autocorrelation: ($\text{cov}(u_i, u_j) = 0$ for $i \neq j$)

This assumption states that the covariance between the error terms over time is zero. According to Brook (2014) “it is assumed that the errors are uncorrelated with one another. If the error is not un-correlated with one another, it would be stated that they are ‘auto-correlated’ or they are ‘serially correlated’”. To check the presence of autocorrelation in the study, the researcher used Breusch-Godfrey test, which allow the examination of the relationship between error terms and several it’s lagged value at the same time.

Therefore, 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 significant level. Otherwise, do not reject H0.

Table 4.3 Result of Autocorrelation Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.989701	Prob. F(2,46)	0.3783
Obs*R-squared	2.263007	Prob. Chi-Square(2)	0.3225

Source: E-views 8 outputs

As it can be seen from the table 4.3 both versions (X2 and F-statistics) of the test are 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.

4.2.3 Normality Assumption

Even if there are several tests for normality assumption, like the histogram of residuals, normal probability plot (NPP), the most common one is Bera-Jarque (1981) test. If the residual are normally distributed, the histogram should be bell shaped and Bera-Jarque statistics could not be significant. This means the P-value given at the bottom of the normality test screen should be bigger than 0.05 to not reject the null of the normality hypothesis that the data is normally distributed. The hypothesis of the normality test was formulated as follows:

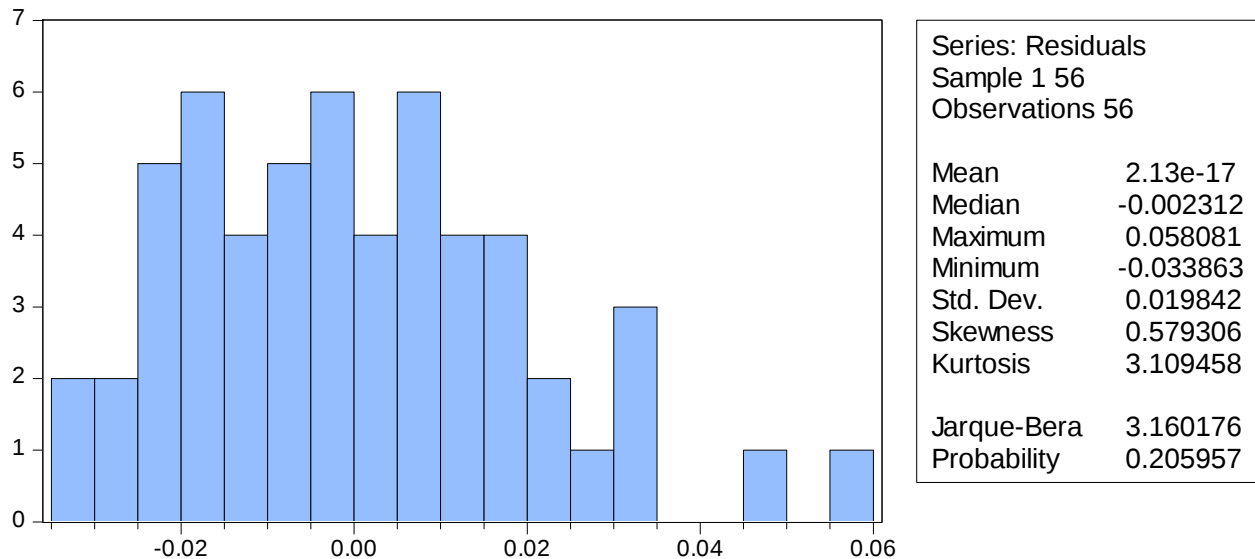
H0: The data are normally distributed.

H1: The data are not normally distributed.

$$\alpha = 0.05$$

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

Figure 4.1 Normality Test Result



Source: E-Views 8 Output

As shown in the figure 4.1 above, the Bera- Jarque statistics have a P-value of 0.20 clearly implies that it is greater than 0.05, which indicates there is no evidence for the presence of an

abnormality in the data. Thus, the null hypothesis that the data is normally distributed should not be rejected since the P-values were in excess of 0.05 significant levels. It can be concluded that there is no problem of normality

4.2.4 Multicollinearity

Multicollinearity means there is a linear relationship between the explanatory variables which may cause the regression model biased (Gujirati, 2009). 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. 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 multicollinearity is looking at the matrix of correlations between individual variables.

Table 4.4 Result of Multicollinearity Test

	RED	LQR	LEV	EFF	CSZ	INF	ITR
RED	1.00	0.40	-0.03	0.04	-0.08	-0.12	0.04
LQR	0.40	1.00	-0.39	-0.02	-0.40	-0.004	-0.12
LEV	-0.03	-0.39	1.00	0.10	0.18	0.19	-0.21
EFF	0.04	-0.02	0.10	1.00	0.05	-0.06	-0.19
CSZ	-0.08	-0.40	0.18	0.05	1.00	-0.38	0.36
INF	-0.12	-0.004	0.19	-0.06	-0.38	1.00	-0.39
ITR	0.04	-0.12	-0.21	-0.19	0.36	-0.39	1.00

Source: E-Views 8 Output

As far as the benchmarks Cooper & Schindler (2009) suggested, a correlation above 0.8 should be considered as a problem of multicollinearity. As it can be seen from tables 4.4 the maximum correlation value is 0.4 and therefore we can conclude that there is no multicollinearity problem in the variables considered. This implies that the OLS estimators are consistent and unbiased in the presence of stochastic regressors and they are not correlated with the error term of the estimated equation; they are interpreted reliably.

4.3 Correlation Analysis

The major purpose of the correlation matrix in this particular study was in order to indicate the linear association between the dependent and independent variables. According to Brooks (2008), the correlation between two variables measures the degree of linear association between them. The values of the correlation coefficient always lie between positive one and negative one. When correlation coefficient is positive one, it means that there is a perfect positive relationship between the two selected variables; while a correlation coefficient of negative one indicates a perfect negative association between the two variables. On the other hand, a correlation coefficient of zero indicates that there is no linear relationship between the two variables. In highlight to this, the following table 4.5 presents the correlation analysis which consists of the correlation coefficients for the variables used in the determinant of non-life insurance profitability model designed.

As presented in table 4.5, almost all the variables are correlated with profitability which is measured by ROA.

As the correlation matrix indicates, Reinsurer dependency, Liquidity ratio, Efficiency, and Company size are positively and strongly correlated with non-life insurance profitability with a correlation coefficient 0.33, 0.41, 0.37, and 0.18 respectively. Whereas Leverage, Inflation rate and Interest rate have strong and negative correlation with ROA of non-insurance companies with a correlation coefficient of -0.37, -0.28 and -0.17 respectively.

Table 4.5: Correlation matrix of dependent and independent variables

	ROA	RED	LQR	LEV	EFF	CSZ	INF	ITR
ROA	1.00	0.33	0.41	-0.37	0.37	0.18	-0.28	-0.17
RED	0.33	1.00	0.40	-0.03	0.04	-0.08	-0.12	0.04
LQR	0.41	0.40	1.00	-0.39	-0.02	-0.40	-0.004	-0.12
LEV	-0.37	-0.03	-0.39	1.00	0.10	0.18	0.19	-0.21
EFF	0.37	0.04	-0.02	0.10	1.00	0.05	-0.06	-0.19
CSZ	0.18	-0.08	-0.40	0.18	0.05	1.00	-0.38	0.36
INF	-0.28	-0.12	-0.004	0.19	-0.06	-0.38	1.00	-0.39
ITR	-0.17	0.04	-0.12	-0.21	-0.19	0.36	-0.39	1.00

Source: E-Views 8 Output

4.4. Model Specification Test

The assumption of the CLRM is that the econometric model used in the analysis is correctly specified and has two meanings. The first is since the model is correctly specified, there is no equation specification error and the second is no model specification error. The model specification error exist due to omission of an important variable(s), inclusion of unnecessary variable(s), incorrect specification of the error, adoption of wrong function form and error of measurement in the regress and regressors. When the appropriate variables are omitted from a model, the OLS estimators of the variables retained in the model are biased and inconsistent. In addition to the above, the variance and standard error of these coefficients are incorrectly estimated. As a result, including of irrelevant variables in the model are also that the estimated variances tend to be larger than necessary, thereby making for less precise estimation of the parameters. That is, the confidence intervals tend to be larger than necessary (Gujirati, 2009). Therefore, in order to select a correct estimated model, the researcher has carried out the Ramsey-RESET Test to check on the model specification. The hypothesis of the model specification test formulated as follows;

H0: The model is correct.

H1: The model is incorrect.

$\alpha = 0.05$

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

Table 4.6 Result of Model Specification Test

Ramsey RESET Test
Equation: UNTITLED
Specification: ROA RED LQR LEV EFF CSZ INF ITR C
Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	1.567776	47	0.1236
F-statistic	2.457921	(1, 47)	0.1236
Likelihood ratio	2.854579	1	0.0911

Source: E-Views 8 Output

From the table 4.6 above, do not reject the null hypothesis (H0) since the P-values of t-statistics, F-statistics and likelihood ratio are 0.123, 0.123 and 0.091 respectively are greater than the significant value. Therefore, it can be concluded that the model is correctly specified.

4.5. Model Selection: Random versus Fixed Effect Model

There are two classes of panel estimator approaches that can be employed in financial research; Fixed and Random Effect model. The question is which model is more appropriate from fixed and random effect model. In order to select the appropriate model, the researcher used Hausman Test. The Hausman test that examines whether any unobserved and omitted variables are uncorrelated with the included explanatory variables. If they are uncorrelated, a random effect approach can be used; otherwise, the fixed effect model is preferable. The null hypothesis for this test is that unobservable heterogeneity term is not correlated or random effect model is appropriate, with the independent variables. If the null hypothesis is rejected then study employ fixed effect model (Brook, 2014). Therefore, the Hausman test hypothesis 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 4.7 Result of Hausman Test

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	6.409582	5	0.2684

Source: E-Views 8 Output

The above table 4.7 shows, Hausman test has a P-value of 0.2684 which is more than 0.05 (5%) level of significance. The conclusion from the above Hausman test result is the null hypothesis of the random effect should not reject. This implies that for this study random effect is more appropriate than fixed effect.

4.6. Regression Result Analysis

In this part the regression result has been presented. The following linear regression was developed on variables considered in the model to test the effect of the selected independent variables on Ethiopian private non-life insurances' profitability.

$$ROA_{it} = \alpha + \beta_1 (CSZ)_{it} + \beta_2 (RED)_{it} + \beta_3 (LQR)_{it} + \beta_4 (LEV)_{it} + \beta_5 (EFF)_{it} + \beta_6 (IFR)_{it} + \beta_7 (ITR)_{it} + U_{it}$$

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 (Brook, 2014).

Table 4.8 Regression Output

Dependent Variable: ROA
Method: Least Squares
Date: 06/25/19 Time: 21:30
Sample: 1 56
Included observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RED	-0.058446	0.024125	2.422607	0.0192
LQR	0.041424	0.015000	2.761662	0.0081
LEV	-0.018912	0.004295	-4.403161	0.0001
EFF	0.075029	0.021449	3.497930	0.0010
CSZ	0.058172	0.012454	4.670798	0.0000
INF	-0.009716	0.000373	-1.155433	0.0013
ITR	-0.037319	0.009295	-4.014847	0.0002
C	0.013268	0.145604	-0.091121	0.9278
R-squared	0.668928	Mean dependent var	0.084032	
Adjusted R-squared	0.620647	S.D. dependent var	0.034485	
S.E. of regression	0.021240	Akaike info criterion	-4.734316	
Sum squared resid	0.021654	Schwarz criterion	-4.444980	
Log likelihood	140.5608	Hannan-Quinn criter.	-4.622141	
F-statistic	13.85480	Durbin-Watson stat	2.285642	
Prob(F-statistic)	0.000000			

Source: E-views 8 outputs

Note: at 5% Significant level

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

$$\text{ROA} = 0.0132 - 0.0584 \cdot \text{RED} + 0.041 \cdot \text{LQR} - 0.0189 \cdot \text{LEV} + 0.075 \cdot \text{EFF} + 0.058 \cdot \text{CSZ} - 0.0097 \cdot \text{INF} - 0.037 \cdot \text{ITR}$$

The above Table 4.8 the random effect panel data regression results shows the coefficient intercept (α) is 0.0132. This means, when all explanatory variables took a value of zero, the average value ROA would take 0.0132.

As we can see from table 4.8 also shows, company size, efficiency and liquidity ratio had a positive and statistically significant relationship with profitability of non-life insurance operating in Ethiopia (with P-value of 0.00, 0.001, 0.008 respectively) at the 1% significance level. Whereas, lending interest rate, reinsurer dependence, inflation rate and leverage had a negative

and statistically significant relationship with profitability (with P-value of 0.002, 0.019, 0.0013 and 0.0001 respectively) at the 5% significance level.

Besides, the value of R-square and adjusted R-square is 0.668 and 0.62 respectively. This indicates 62% of the change in independent variables explains the change in the dependent variable. In addition, the above regression result shows the model is properly fit and the explanatory variables are properly selected and used in this study, since, the F-statistics (an overall test of significance) take a value of 13.85. Thus, all the explanatory variables had a jointly statistically significant effect on profitability of private non-life insurance in Ethiopia.

4.7. Discussion of result

The above section of this chapter presents the overall results of the study. In this section of the study, the researcher presents a further detail discussion on each of the signs and significant relationship between the dependent variable (ROA) which measures the non-life insurance profitability in Ethiopia and explanatory variables (CSZ, RED, LQR, IFR, ITR, LEV and EFF). Therefore, the current study discussed and evaluates the statistical findings in relation to previous theoretical and comparison to the earlier empirical evidences. Then, the following discussion present explanatory variables which are given to determine the profitability of non-life insurances in Ethiopia and then followed by control variables.

Company Size and Return on Asset

The size of the firm affects its financial performance in many ways. Large firms can exploit economies of scale and scope and thus being more efficient compared to small firms. 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.

Company size is computed as logarithm of total assets of the insurance company. The regression result of this study show that the variable size is positively coefficient (0.058) related to financial performance that means if the size of the company increase by 1 unit, ROA will also increase by (0.058) units considering that other independent variables remain constant. It also statistically

significant ($p\text{-value}=0.0000$) at a 1% level of significance. This indicates that large volume of total asset has a significant effect on insurers' financial performance. Financial performance is likely to increase in large 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, complex information systems and a better expenses management.

The finding of this study is matching with, Malik (2011), Mehari et al. (2013) Chen & Wong (2004) and Shiu (2014). They revealed that large corporate size enables to effectively diversify their assumed risks and respond more quickly to changes in market conditions. An increase in total asset 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.

The regression result also supported by the NBE's officers, they responds that one of the main reasons the directive issued minimum paid up capital requirement (Directive No. SIB/34/2013) non-life insurers required to increase their capital from 3 million to 60 million was in order to grow insurers' business and increase their retention capacity among the objectives of this directive. If insurers have enough capacity, they can operate massively and this leads them to increase their volume of premium and then their financial performance will increase.

Hence, this study supports the hypothesis that company size has a significant positive effect on insurers' financial performance in Ethiopia and so there is no evidence to reject the null hypothesis.

Reinsurer dependence versus profitability of non-life insurance companies

Reinsurance is a way in which an insurer can recover a part of the claims they pay out, from the reinsurer in order to reduce the risk of the failure occurs from the large events. It is a measure of the companies' ability to bear risks. Insurance companies underwrite the risk of other companies but to mitigate their own risk, these insurance companies use reinsurance.

As exhibited in table 4.7 the beta value (coefficient) of reinsurance dependence which measured by the ratio of premiums ceded in reinsurance to total asset was statistically significant and has

negative impact on profitability which measured by ROA at 5% significance level (p -value = 0.058) which implies that increase reinsurance dependence on the non-life reinsurers will leads to decline profitability negatively. This implies that increment of the reinsurance dependency is highly influence the profitability of Ethiopian non-insurance companies. Therefore, the result of the current study does created controversy with that of the previous studies conducted in Ethiopia and other jurisdictions. For instance, Boyjoo and Ramesh (2017) in Mauritius, Mistire (2015), Suyehli (2015), Asrat and Tesfahun (2016) and Demis (2016) in Ethiopian, found negative and insignificant relationship between profitability and reinsurance dependence among general insurance companies which implies that reinsurance dependence is not prime determinant of profitability in Mauritius and in Ethiopia during they conduct their studies. In contrary to that, the researcher of this paper found a significant and negative relationship between reinsurance dependence and insurance profits.

Liquidity Ratio versus profitability of non-life insurance companies

It is a measure of the capability of an insurer to fulfill their immediate commitment or pay their liabilities to policyholders and other creditors, which fall in a period less than a year without having to increase profits from the underwriting activities and investment activities and/or liquidate financial assets when they due. The result indicated in the above table 4.7, liquidity ratio of non-life insurance in Ethiopia has a positive and statistically significant effect on profitability (P -value = 0.0081) at the 5% significance level. Holding other things constant, if liquidity increases by one unit, profitability increases by 0.041. The results of a positive relationship between liquidity and profitability show non-life insurance that has more liquidity ratio will bring higher profits for their firms and increase insurance companies' ability to pay claims incurred to policyholder and creditors by increasing their profitability. Therefore, it is expected that non-life insurers in our country with a more liquid asset will outperform those with less liquid assets. Since, insurer's lower liquidity means they will have more cash constraints and will have more difficulties in repaying to policyholders when the loss occurred. Thus, non-life insurance companies in Ethiopia should keep a minimum amount of liquidity that required by NBE to meet their commitment to policyholders and to meet short term creditors.

The finding of this study is consistent with the studies of Almajali et al.(2012) , Alice and Muturi (2016), Mazviona et al.(2017), and Mazviona et al.(2017), but contradict with studies of Worknesh (2017), Mohammed and Islam (2017) and Yuvaraj and Abate (2013).

Inflation versus Profitability of Non-life insurance companies

Inflation refers to changes in the overall level of prices within economy which consequently leads to the erosion of the domestic currency. The inflation is commonly measured by calculating the percentage change in the overall level of prices over a period as measured by price index such as Consumer Price Index (CPI). In highlight to this, the existences of high or low inflation have its own impact on insurer's financial performance. While high inflation by itself may increase claims of the insurers and the low inflation may decrease an amount of claim the insurers pays for the insured. But, the impacts of inflation are not the same across the developing and developed countries. As indicated in the regression output of the study in table 4.8 above, the coefficient of Inflation rate (IFR) measured by change in annual inflation is - 0.0097 and its probability value (P-Value) is 0.0013. This may be interpreted as holding other factor (variables) constant at their average value, when inflation (IFR) decreased by one percent, the profitability which measured by ROA of sampled Ethiopian non-life insurance companies would be decreased by -0.0097 percent and it is statistically significant at 5% level of significant. The result of this study is contradict with the finding of the previous studies conducted in developing countries such as Lee (2014), Asrat and Tesfahun (2016), Meaza (2015), Hadush (2012) Suyehli (2015), Pervan and Kramaric (2012) and Teklit and Jasmindep (2017), and developed countries such as Lee (2014) and Daare (2016) those states that, inflation is negatively related to the profitability of insurance companies but it is statistically insignificant. The researcher implies that inflation is significant determinant of profitability among the non-life insurance companies in Ethiopia.

Interest rate versus Profitability of Non-life insurance companies

Interest rates are one of the economy single strongest influences. They facilitate the formation of capital and have a profound effect on everything from individual investment decisions to job creation, monetary policy and corporate profits. Interest rate as a price of money reflects market

information regarding expected change in the purchasing power of money or future inflation (Ngugi, 2001).

Economic environments have an intense consequence on the growth of the insurance companies. A strong insurance industry promotes a developed contractual saving sector which contributes to a more resilient economy that would be less vulnerable to interest rates and demand shocks while creating a more stable business environment, including macroeconomic stability.

As indicated in the regression output of the study in table 4.8 above, interest rate is significant factor to determine financial performance of non-life insurance companies in Ethiopia with a p-value of 0.0373 at 1% significance level. Interest rates negatively affect the return on assets for the insurance companies and a unit increase in interest's rate will lead to 0.0373 unit decrease in the financial performance of the insurance companies.

Previous researches on financial performance of insurance companies in Ethiopia did not consider Interest rate as an explanatory variable and in this research the researcher used it as one of the macroeconomic independent variable and found out that interest rate significantly and negatively affects the financial performance of insurance businesses measured in ROA. As lending interest rate increases the insurance company cost of debt financing will also increase and this negatively affect the profitability of the insurance companies.

Leverage versus profitability of non-life insurance companies

The regression result of table 4.8 shows there is a negative and significant relationship between leverage and profitability in non-life insurances in Ethiopia (P-value=0.0001) at the 1% significance level. Leverage measures the companies' long-term financing and calculated as the ratio of total debt to total equity. The coefficient -0.089 indicates that holding other things constant if one unit increase leverage ratio decrease the profitability of non-life insurances in Ethiopia by 0.089. The above result shows that debt financing has a negative effect on the profitability of non-life insurances in Ethiopia and financial leverage could be reflected in lower market value, thereby reducing the firm's profit and leading to the solvency problem. Therefore, the findings clearly show that firms with high leverage ratio have lower profit than with that of the lower leverage ratio under non-life insurance companies in Ethiopia. On the other hand, the

negative relationship between leverage and profits in this study implied that highly profitable non-life insurance companies have more likely relied on internally generated funds and equity capital than debt capital as the source of financing and the result supports capital structure theory of pecking order which postulates that there is a negative correlation between them (Myers and Majluf, 1984).

This study is consistent with Mohammed and Islam (2017), Meaza (2014), Hailegebreal (2016), Yuvaraj and Abate (2013), Jelena et al. (2014), Malik (2011) and Sambavizam and Ayele (2013), but contradict Gemechu (2017), Murigu (2015) and Mazviona et al. (2017).

Efficiency versus profitability of non-life insurance companies

The efficiency in insurance companies can be computed as an expense and claim payment (Input) to Gross written premium (Output) of the insurance (Datu, 2016). This was developed from the proxy of efficiency in many structure-profit-studies. The result indicated in the above table 4.7, there is a positive and significant relationship between efficiency and profitability (P-value =0.0010) at the 1% significance level. Further, it can be observed that the coefficient of the degree of efficiency (EFF) is 0.075. Based on the beta coefficient; holding other things constant; if one unit increases in Efficiency increase profit by 0.075.

Even if the above study did not separately measure the technical and scale efficiency of private non-life insurances in Ethiopia, the result is consistent with one version of efficiency -structure-hypothesis (ESH) which asserts that profitability is the result of the efficiency of individual firms. The result confirms that the efficiency hypothesis works in private non-life insurance industry in Ethiopian. The more efficient insurer has earned a higher profit than less efficient insurers since the more efficient firm achieves superior performance at the expense of their less efficient counters. So that, a strong positive relation between efficiency and non-life insurance profitability claims a more efficient insurance company have growth in profits since it is able to maximize Gross written premium and then its net premiums as well as net underwriting income.

The finding of this study is consistent with studies of Thomas et al. (2011), Choi and Weiss (2005), Meaza (2014), Kozak (2011) and Almajaliet al. (2012).

Table 4.9 The Summary of expected and actual signs of independent variables.

Independent Variables	Expected sign effect	Actual effect	Hypothesis status
Company Size	Positive and Significant	Positive and Significant	Do not reject
Reinsurer dependency	Negative and Significant	Negative and significant	Do not reject
Liquidity ratio	Positive and Significant	Positive and Significant	Do not reject
Inflation rate	Negative and Significant	Negative and Significant	Do not reject
Lending interest rate	Negative and Significant	Negative and Significant	Do not reject
Leverage	Negative and significant	Negative and significant	Do not reject
Efficiency	Positive and significant	Positive and significant	Do not reject

Source: researcher compilation

CHAPTER FIVE

5. CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The previous chapter presented the results and discussion, while the current chapter deals with the conclusions and recommendations based on the findings of the study. Accordingly, this chapter is organized into two sub-sections. The first section presents the conclusions and the second presents the recommendations.

5.2 Conclusions

Profitability is the central issues to the company's overall operational activities. Improving the company's financial performance is highly contributing to the development of the country economy. Recently there is highly an increasing interest in research on profitability of the companies. Nevertheless, major determinants of profitability in the insurance companies are not well understood in the current different finance literatures in both developed and less developed countries because profitability determinants are not the same from one country to another country; even from one sector to another sectors. In some countries, the firm-specific factors are highly affects profitability of the organizations whereas industry-specific and macroeconomic factor are most powerful determinants of profitability in some or other countries. Besides, different firm-specific operational environments, overall industry condition and macro-economic environment are one of the main causes and consequences of the profitability variation and determination among the non-life insurance companies. The basic question is what are the perceived determinants of profitability and how can we identifying and measure these perceived profitability determinants for non-life insurance business? To answer this, a large body of research has attempted to identify these factors; however, the findings of prior empirical studies have provided varying evidence related to the impact of those factors on insurance companies' profitability measured by Return on Asset (ROA). Besides, the majority of these studies have been conducted in developed countries that have many institutional similarities and developed regulatory framework, but few studies are conducted in developing countries like Ethiopia.

In light of the above, the major purpose of this study was to investigate the relationship between profitability and micro-economic factors such as company size, reinsurer dependence, liquidity ratio, leverage and efficiency and macro-economic factors such as inflation rate and lending interest rate as determinants of profitability of non-life insurance business operating in Ethiopia. In order to achieve the meant objective, the study used only quantitative research approach and correlational explanatory research design which based on philosophical assumption of positivist research paradigm. The non-probabilistic purposive sampling technique was used to select the insurers based selection criteria designed by the researcher. The secondary data used in the study were collected through survey of document reviews from a sample of seven insurance companies over the time period from 2010 to 2017 for eight consecutive years. The collected data were analyzed by employing multiple regression OLS model through statistical package of EVIEWS 8 software.

In order to conduct the empirical analysis, only one dependent variable, profitability(ROA), and seven independent variables were selected from prominent previous research works on profitability determinants of non-life insurance; namely company size, reinsurer dependence, liquidity ratio, leverage, efficiency, inflation rate and lending interest rate. In context to this, the results of the random effect estimation model showed the existence of the following relationship between profitability and the selected independent variables.

The total company size had statistically significant positive relationship with the profitability, which was in line with prior expectation of the working hypothesis. The reinsurer dependency had statistically significant negative relationship with the profitability, which was in line with prior expectation of the working hypothesis. The liquidity ratio had statistically significant positive relationship with the profitability, which was in line with prior expectation of the working hypothesis. The inflation rate had statistically significant negative relationship with the profitability, which was in line with prior expectation of the working hypothesis. The interest rate had statistically significant negative relationship with the profitability, which was in line with prior expectation of the working hypothesis. The leverage had a negative and statistically significant relationship with ROA, which was inconsistent with the working hypothesis or expected sign. The efficiency had statistically significant positive relationship with the profitability, which was in line with prior expectation of the working hypothesis.

5.2. Recommendations

Company Size, Efficiency, and liquidity in this study have positive and statistically significant effect on Non-life insurance financial performance in Ethiopia, whereas leverage, reinsurer dependence, inflation rate and lending interest rate had statistically significant and negative effect on Profitability.

Based on the major findings of the study result, the researcher provides the following recommendations.

Non-life insurance companies should increase their company size as they expected as requirement to add business or to inter in to a new business in any sector. So, they can raise their size by converting their non-income earning assets to income earning assets like treasury bills, bank deposit and equity shares in line with the NBE investment directive No. SIB/25/2004. This would lead them to secure their space in the competitive market, to become solvent, to expand their business, to attract more customers, investors and to be financially strong and to maximize profit.

Regarding reinsurance risk insurers should retain as far as their capacity which usually measured by net risk (net written premium to equity). The researcher puts some tools hereunder;

- First insurers should know their right capacity and to know this they should examine all classes of business. For example in fire and lightning policy the maximum probable loss/estimated maximum loss (EML) should be calculate.
- Insurers have to provide their stock to the public and existing shareholders up to the extent their holding limit (5% of subscribed capital) that stated in Proclamation No.746/2012, Article No. 12.
- Moreover, Ethiopian insurers have to formulate reinsurance policy and program. This is a key tool when they are arranging reinsurance agreements, as their risk appetite, risk tolerance and other matters are contained in this document.

The other concerned issue in this study is liquidity risk. The researcher forwarded the following recommendation.

- ✚ Insurers“ have to underwrite more policies by using different marketing tools like extensive promotion with taking in mind intelligent asset utilization system.
- ✚ The recovered assets from their customers in the case of total loss and/or when the damaged couldn't be economical to repair, insurers should dispose promptly in order to get more cash.
- ✚ Ethiopian insurer should also properly use NBE's Directive No. SIB/25/2004 that commands the insurers to hold 65% of their admitted asset in the form of cash and short term securities.
- ✚ Whenever insurers want to invest their funds accordingly the above directive, they have to think twice before they put their funds in long term investment. Basically they should do internal rate of return (IRR) which help them to know the potential profitability of the targeted investment.
- ✚ Moreover, the insurers should formulate policy and procedure and have to forecast their cash flows these can help them to utilize their working capital efficiently.

Generally, the current study concluded that the firm and industry specific factors are mostly determining the profitability of non-life insurance companies in Ethiopia. In addition to that undiversified insurer underperform than diversified insurers, so it is recommended that the board and management of non-life insurance company should give high attention on both firm and industry specific related factors by considering the way they underwrite both life and non-life insurance product instead of focusing on one product alone. Despite to that, the management of the companies should give attention on firm specific factors affecting profitability such as underwriting risk, reinsurance dependency and the firm financial leverage.

Finally, this study particularly examined some firm specific, industry specific and macro-economic profitability determinants of non-life insurance companies in Ethiopia because short time frame which leads this study to small sample size and resource limitation. Thus, future research may be conducting more researches on the areas particularly by considering some variable such as branch expansion, regulation, and ownership to identify which variables are the

powerful determinants of profitability. Despite, the further research should investigate the profitability determinants of life insurance business by using the same variable used in the current study. Therefore, this study explained only 62% of variation in profitability; other researchers shall identify and clarify the path for including other variables.

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