ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF ACCOUNTING AND FINANCE

(GRADUATE PROGRAM)

The effect of capital structure on financial Performance of Insurance companies: Empirical Evidence from private Insurance companies in Ethiopia

BY:

NEGUSSIE MULUGETAADMASSIE

ADVISOR: **ALEM HAGOS (Dr.)**

A Thesis Submitted to the School of Graduate Studies of Addis Ababa University in Partial Fulfillment of the Requirements for the Degree of Masters of Science in Accounting and Finance.

ADDIS ABABA, ETHIOPIA

February, 2019

THE EFFECT OF CAPITAL STRUCTURE ON FINANCIAL PERFORMANCE OF INSURANCE COMPANIES: EMPIRICAL EVIDENCE FROM PRIVATE INSURANCE COMPANIES IN ETHIOPIA

BY:

NEGUSSIE MULUGETA ADMASSIE

A Thesis Submitted to the School of Graduate Studies of Addis Ababa University in Partial Fulfillment of the Requirements for the Degree of Masters of Science in Accounting and Finance.

ADDIS ABABA, ETHIOPIA

February, 2019

Statement of Declaration

I, Negussie Mulugeta Admassie, have carried out independently a research work on "***The effect of capital structure on financial Performance of Insurance companies: Empirical Evidence from private Insurance companies in Ethiopia***" in partial fulfillment of the requirement of the Masters of Science 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 reference materials contained therein have been duly acknowledged.

Name: Negussie Mulugeta Admassie

Signature----------

Date----------

Addis Ababa University
School of Graduate Studies

Statement of certification

This is to certify that the thesis entitled"***The effect of capital structure on financial Performance of Insurance companies: Empirical Evidence from private Insurance companies in Ethiopia***" was carried out by Negussie Mulugeta under the supervision of Alem Hagos (PhD), submitted in partial fulfillment of the requirements of 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:

Internal examiner: Dr. Abebaw Kassie Signature _____Date _____

External examiner: Dr. Arega Siyoum Signature _____Date_____

Advisor: Dr. Alem Hagos Signature_____ Date _____

Abstract

Capital structure decision related to a given business entity is at the center of many other decisions in the area of corporate finance. The main objective of this paper was to examine the effect of capital structure on financial performance of private insurance companies in Ethiopia. To realize this objective, the researcher applied quantitative research approach. The study employed a panel data and its regression analysis tools. The dataset comprised nine Ethiopian private insurance companies that were selected through purposive sampling technique. The data covered period of 10-years (2008-2017 G.C.). The data used in the study was secondary data which were firm level accounting data.The study investigated the effect of capital structure on financial performance proxied by return on Equity by using leverage ratio as variables of capital structure and five additional explanatory variables (degree of operating leverage, reinsurance dependence, company size, claim ratio, and premium growth) that can affect insurance companies' financial performance. The data was analyzed through the help of Ordinary least square estimation method (panel least square regression analysis method). As panel data regression analysis tool, random effect model was used to analyze the panel data. The result of random effect regression model revealed that debt ratio,degree of operating leverage, company size and claim ratio have statistically significant effects on financial performance/profitability of private insurance companies of Ethiopia. Reinsurance dependence and premium growth have insignificant negative and positive effect on financial performance of private insurance companies of Ethiopia, respectively. Debt ratio, degree of operating leverage and company size have significant positive effects whereas claim ratio has significant negative effect on financial performance of private insurance companies of Ethiopia. Furthermore, all assumptions of classical linear regression model were not violated. Thus, the residuals were found homoscedastic, no autocorrelation, normally distributed and no multi-collinearity after two extreme negative values have been controlled through the use of two dummy variables. Based on the findings, the study recommends that the board and management of private insurance companies should give high attention to these variables by considering the way they underwrite both life and non-life insurance product by trying to minimize the influence of underwriting risk by adopting a risk management strategy and increase their net written premium.

Keywords: Capital Structure, Financial performance, Return on Equity, Private insurance companies, Ethiopia.

Acknowledgements

First and foremost, I want to thank my God for helping me through the whole part of my life. Next, I would like to greatly express my deepest gratitude and indebtedness to my advisor Alem Hagos (PhD) for his guidance and valuable suggestions and encouragement at every stage during the completion of this work.

I would also like to express my unreserved gratitude to my wife, Ejigayehu Dibaba, for all of her sincere support and encouragement throughout this work. She really deserves my gratitude since she has always been with my side.

My deepest gratitude would also deserve to my friend, Daniel Girma, in which this study could not have been realized without him.

Finally, but yet importantly, my acknowledgement goes to workers of National Bank of Ethiopia and insurance companies head office with special thanks go to Mr. Tesfa Bizuayehu in particular for his kind support in providing necessary data to do the thesis.

Table of Contents

List of Figures

List of Tables

Acronyms

CLRM: Classical Linear Regression Model
CR: Claim Ratio
CS: Company size
df: Degree of freedom
DOL: Degree of Operating Leverage
DR: Debt Ratio
DW: Durbin-Watson
EBIT: Earnings Before interest and Tax
EBT: Earning Before Tax
EIC: Ethiopian Insurance Corporation
FE: Fixed Effect
FEM: Fixed effect Model
GDP: Gross Domestic Product
GWP: Gross Written Premiums.
LTDR: Long term debt ratio
LTDTA: Long term debt to Total assets
MM: Modigliani and Miller
NBE: National Bank of Ethiopia
Nice: National insurance company of Ethiopia
NIM: Net Interest Margin
OLS: Ordinary Least Square
PG: Premium Growth
RE: Random Effect
RED: Reinsurance Dependence
REM: Random Effect Model
ROA: Return on Asset
ROE: Return on Equity
SPSS: Statistical Package for Social Science
STDR: Short term debt ratio
STDTA : Short-term debt to Total assets
TDE : Total debt to Equity
TP: Technical Provision
Unic: United insurance company
WACC: Weighted Average Cost of Capital

CHAPTER ONE: INTRODUCTION

This chapter introduces a brief background of the effect of capital structure on financial Performance of private Insurance companies in Ethiopia. The chapter specifically consists of the statement of the problem, general and specific objectives, significance of the study, scope of the study, the limitations of the study and the general Structure of the study.

1.1. Background of the study

Human beings do different thing for their living. Business as an activity of making of one's living or making money is a long time human activity. Business can have different forms. Whatever form it has, however, it has to have source of capital that support its existence and business activities. Without finance, which supports a company's fixed assets and working capital requirements, business could not exist (Fabozzi & Drake, 2009). A business invests in new plant and equipment to generate additional revenues and income which is the basis for its growth. One way to pay for investments is to generate capital from the company's operations. Earnings generated by the company belong to the owners and can either be paid to them in the form of cash dividends or plowed back into the company. But earnings may not be sufficient to support all profitable investment opportunities. In that case management is faced with a decision of either foregoing profitable investment opportunities or raise additional capital. New capital can be raised by either borrowing or selling additional ownership interests or both (Fabozzi & Drake, 2009).

According to Fabozzi & Drake (2009) the decision about how the company should be financed, whether with debt or equity, is referred to as the capital structure decision. Capital structure[1] of a firm describes the way in which a firm raises capital needed to establish and expand its business activities. It is a mixture of various types of equity and debt a firm maintained resulting from the

[1] It should be noted that some scholars in the area of corporate finance, example, Gerstenberg, and different previous studies related to the topic under investigation use capital structure and financial structure interchangeably (though capital structure refers to part of financial structure which represent long-term sources of finance) since financial structure also refers to the make-up of the permanent capital of the firm. The researcher used the term capital structure throughout this paper though the panel data included short term liability (nature of the industry- insurance companies in Ethiopia are short-term liability dominated) since all theories of the study are theories of capital structure.

firms financing decisions. Capital structure decisions are among the most significant finance decisions companies encounter.

It has been long years' debate whether capital structures are influential on costs of capital and firm values. In fact, the theory of capital structure and its relationship with a firm's value and performance has been a puzzling issue in corporate finance and accounting literature since the Modigliani and Miller (1958) in which they argued that under the perfect capital market assumption (no bankrupt cost, without taxes world, etc.), the firm's value is independent with the structure of its capital. Since then, several theories such as Pecking order theory, Static Trade-off theory, agency cost theory and others have been developed to explain the capital structure of a given firm. The firm's decision about its source of capital will affect its competitiveness in a competitive free market economy. Hence, a firm is expected to use the appropriate mix of debt and equity that will maximize its profitability.

Therefore, having empirical evidence on the effect of capital structure on a given firm's or industry's financial performance is very important for the management and investors of the firm. However, the studies of capital structure in Ethiopian are few in numbers, and the industry and the topic they cover. Most of the studies that have been conducted related to capital structure in Ethiopia have emphasized on determinants of capital structure though there are few studies that have been conducted on the effects that capital structure has on financial performance in banking, micro-finance institutions and other non-financial sectors.

Understanding and enjoying the benefits that a given firm would get from its capital structure decision should also be extended to Ethiopian private insurance companies.

However, previous studies have failed to comprehensively address effect of capital structure on financial performance(profitability) of private insurance companies in Ethiopia that operate both life and non-life insurance business. In addition to achieving their main goal (maximizing profits and shareholders' wealth); insurance companies also need to comply with various requirements laid down by the National Bank that include capital adequacy (Bayeh, 2011).

Hence, the aim of this study is to examine the effect of capital structure on financial performance of private insurance companies in Ethiopia. This would equip financial managers with applied knowledge of the potential problems in performance and capital structure, as well as determining

their optimal level of capital structure to achieve optimum level of firm's financial performance (profitability) and hence shareholders' wealth.

1.2. Statement of the Problem

Business as an economic activity, which is mostly related with production and distribution of goods and services for satisfying human wants, has existed since long time. In fact, business has become part and parcel of modern society's living. In doing any business, however, the issue of its source of capital is very important.

The capital structure decision related to a given business entity is at the center of many other decisions in the area of corporate finance. One of the many objectives of a corporate financial manager is to ensure low cost of capital and thus maximize the wealth of shareholders in which it has direct relationship with the capital structure of a given firm.

In fact, the study of relationship between capital structure and firm performance have been tried to be addressed in different jurisdiction (developed and developing countries). The irrelevance theorem of capital structure of Modigliani and Miller (1958) has now become irrelevant itself since the effect of capital structure on financial performance of a given firm is empirically supported. Different studies conducted in different countries show that capital structure, measured by different ratios, has either positive or negative effect on a given firm's financial performance. For instance, studies of Mauwa et al (2016), Omukaga (2017), and Tharmila and Arulvel (2013) conducted on stock exchange of different developing countries and other firms revealed that capital structure is negatively associated with return on asset and return on equity.The study of Akeem, Terer, &Kayod (2014) conducted on effects of capital structure on firm's performance of Nigerian manufacturing companies also revealed the existence of this negative relationship between capital structure and firms' performance. Furthermore, studies on financial institutions (commercial banks and insurance companies) also revealed the same findings (Adeyemi et al, 2017; Samuel, 2016; Siddik et al., 2017).Contrary to this, however, the study conducted by Obonyo (2017) on the effect of capital structure on financial performance of companies listed at the Nairobi Securities Exchange in Kenya; Wainaina (2014) studied on the relationship between Capital Structure and financial performance of insurance Companies in Kenya; and study of Samuel (2016) on effects of capital structure on financial performance of

Kenyan Commercial Banks indicated the existence of positive relationship between firm's performance and its capital structure.

In Ethiopian context too, the findings of effect of capital structure on financial performance are mixed, both positive and negative, though the number of studies conducted related to capital structure is limited. From these limited studies, almost half of them studied determinant factors of a given firm's capital structure. For instance, Amanuel (2011) investigated determinants of capital structure for manufacturing share companies in Addis Ababa city; Bayeh (2011), Mohammed (2014), Saddam (2014), Tesfa (2016), and Guruswamy & Adugnaw (2016) studied determinants of capital structure of insurance companies in Ethiopia; Weldemikael (2012) examined determinants of capital structure on commercial banks in Ethiopian banking industry.

However,there are also studies that have been conducted on effect of capital structure on non-financial and financial institutions. On non-financial companies, Abnet (2013) studied the effect of capital structure on financial Performance of Ethiopia's Metal and Engineering Industry; Frezewed (2016) investigated corporate capital structure and its impact on profitability of manufacturing firms in Ethiopia; Asrat (2016) studied the relationship between Capital Structure and financial performance of Ethiopian cement Companies. On the other hand, Mathewos (2016) studied the effect of capital structure on financial performance of commercial banks in Ethiopia; Muhammed, Ashenafi and Netsanet (2015) conducted study on the effect of capital structure on financial performance of commercial banks in Ethiopia; Tamirat (2015) studied the effect of debt financing on profitability of commercial banks in Ethiopia; Yohannes (2017) investigated the effect of capital structure on financial performance of microfinance institutions in Ethiopia; and Seyoum(2018) conducted study on the effect of leverage on Ethiopian private commercial banks' profitability.Except the study of Aragaw (2015) that found the existence of negative effect of capital structure on financial performance of commercial banks in Ethiopia, all of the above studies found that capital structure measured by different ratios have positive effect on financial performance.

Except the fact that some studies have been conducted on the factors that affect the performance (profitability) of insurance industry in Ethiopia, there has not been any comprehensive study that has been conducted on the effect of capital structure on financial performance of insurance companies in Ethiopia in general and private insurance companies in particular as far as the researcher's knowledge concerned. Regarding to factors that affect the performance

(profitability) of insurance industry in Ethiopia, Meaza(2014), Hannamariam (2015), Hadush (2015), Mistre (2015), Suheyli (2015), Gemechis (2017), and Adenew (2017) have conducted researches by including different firm specific factors (company size, liquidity, age of the firm, asset tangibility, leverage, loss ratio, reinsurance dependency), industry level factors (Industry Concentration ratio), and macro factors (growth domestic products and inflation). The selection of variables and findings on some variables, including leverage ratio, of these studies, however, were inconsistent and look contradictory.These previous studies could not tell us the effectsthat capital structure has on financial performance of insurance companies that engages in general and life insurance business than showing us determinant factors of capital structure and determinants of financial performance of insurance companies.

This study is different from these previous studies in the objectives it has achieved, hypotheses it has tested, and variables it employed. In this study, the effect of capital structure, which was measured by total debt ratio on financial performance of private insurance companies of Ethiopia that operate both general insurance and long-term insurance businesses was the central inquiry of the study. Most of the previous studies that dealt with profitability determinants of insurance sector in Ethiopia focused only on general insurance business (non-life) and did not include long-term insurance service (life insurances business) in their studies. These studies, in fact, overlooked effect of capital structure on financial performance of composite insurance business operation (both general and non-life business) in Ethiopia.

Furthermore, the previous studies that dealt with profitability determinants of insurance industry in Ethiopia did not incorporate variables of companies' cost structure like operating leverage which tells us the extent to which fixed costs are used in a firm's operations since operating leverage affects a firm's operating profit. The greater the business risk of the company, the greater the risk associated with a company's earnings to owners in which it is expected that management must consider both the degree of operating leverage and the degree of financial leverage in managing the risk of the company (Fabozzi& Drake, 2009). But previous studies did not include the operating leverage in their studies. Both operating leverage and financial leverage have a bearing on a company's financial risk. This is because of the compounding effect of operating leverage upon financial leverage. In fact, some of previous studies even did not include any variable of capital structure in their studies.

Moreover, as best of the researcher's knowledge, none of these studies has clearly shared us which capital structure theory is prominent in private insurance companies of Ethiopia since they did not comprehensively study the effect of capital structure on financial performance of insurance companies in Ethiopia in general and on composite business operation of private insurance companies' service in particular.

Thus, this study was an attempt to fill the abovementioned research gap by providing empirical evidence on effects of capital structure on financial performance of private insurance companies of Ethiopia that operates general and long-term insurance businesses in Ethiopia.

1.3. Objectives of the study

1.3.1 General Objective

The general objective of this study was to examine the effects of capital structure on financial performance of private insurance companies in Ethiopia.

1.3.2 Specific Objectives

The study has the following specific objective:

- To assess the effect of total debt on financial performance of Private insurance companies in Ethiopia;
- To examine the effect of degree of operating leverage on financial performance of Private insurance companies in Ethiopia;
- To examine the effect of reinsurance dependence on financial performance of Private insurance companies in Ethiopia;
- To assess the effect of company size on financial performance of Private insurance companies in Ethiopia;
- To examine the effect of Claim ratio on financial performance of Private insurance companies in Ethiopia;
- To assess the effect of premium growth on financial performance of Private insurance companies in Ethiopia;

1.4. Significance of the Study

This study has significance for various parties. More importantly, it is significant for managers and shareholders of insurance companies, potential investors, and researchers.

First and foremost, the study is important for management bodies and shareholders of Ethiopian private insurance companies by providing information on the effects of capital structure on performance of their company and the care needs to be made during financing decisions as well. For managers, it can empower and guide them in achieving an optimal capital structure decision which in turn help them to minimize a cost of capital and maximizing their firms' value.

Furthermore, this study is important for current shareholders and potential investors of Ethiopian private insurance companies by giving an ample knowledge and direction about the relationship between capital structure and insurance companies' performance.

Moreover, this study can also be used as a good reference for other researchers in the future who want to conduct their research related with the effect ofcapital structure on firm's performance in general and Ethiopian insurance sector in particular.

1.5. Scope of the Study

This study dealt with the effect of capital structure on financial performance which is an internal (firm specific) factor. Thus, the study did not cover external (industry specific and macroeconomic) factors that may influence performance of insurance companies.

Moreover, the study covered only the period of ten years (2008-2017) and it was limited to only private insurance companies and did not include the government insurance company (Ethiopian Insurance Company) due to the fact that company size has effect on financial performance and the figures of this giant company may affect the content of the data due to the extreme values effect (outliers effect). As companies are unit of analysis, company level data that are found at their head office (all head office are found in Addis Ababa), their website and at National Bank of Ethiopia were used for this study.

1.6. Limitation of the study

As with any other study, this study is not without limitations. The first limitation may be related with the nature of the data (type of data) itself. The study fully used secondary sources of data (audited annual reports) and others which are historical data by their nature and they may not reflect the current and future economic situation. But this limitation is the inherent limitation of using secondary data in general and accounting data in particular.

The sampling procedure can also be another limitation of this study. In this study, the selection of the samples was done through non- probability sampling method based on the selection criteria used by researcher.Companies' operational period and the type of insurance business they underwrite (at least underwriting general insurance) were the selection criteria. This may introduce bias inherent with non-probability sampling method which in turn affects the generalizability of findings to all insurance companies. But the selected insurance companies could be taken as representative since they represent more than 56% of the studied population and they have been in the operation of the business longer time than non-selected insurance companies.

Data constraints were also another challenge of the study. Earlylong-term insurance business or life insurancedata (particularly revenue account and income statement) were not clearly disclosed in separate financial statements. Life insurance income statement was included in comprehensive income statement of the companies whereas revenue accounts were found as notes and part of the narrative report. But in most of recent published annual reports, insurance companies that operate both life and non-life insurance business are preparing separate financial statement for both life and non-life insurance business. The researcher used comprehensive income statement as the composite income statement for the early operations of the selected companies and revenue account data from the narrative part and attached notes. Except for only three insurance companies (Nice, Global Insurance Company and Lion insurance company) that did not have data on life insurance business, the data used for the panel in this study is a composite of both life and non-life insurance business.

1.7. Organization of the Study

This study is organized in to five chapters. The first chapter states the general introduction and background of the study. Chapter two presents theoretical and empirical literatures related to the research area. It also consists of research gap and conceptual framework of the study. The third chapter outlines the research methodology and research design. The research results and discussions are presented in chapter four. The last chapter presents the drawn conclusions and recommendation, and wind up the report by highlighting future research areas.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter contains reviewed related literatures. The first section of the chapter deals with theoretical reviews of capital structure which includes MM theory, Miller with corporate and personal tax, Trade-off theory, Static trade-off theory, Agency cost theory and Pecking order theory. Empirical studies from international and Ethiopia context which dealt with both financial and non-financial institutions have also been reviewed in the second section of the chapter. The chapter also consists of summary of empirical review and existed research gap. Finally, the chapter outlines the conceptual framework of the study.

2.2 Theoretical Review

The effect of capital structure is crucial issue in finance. In this regard, as stated by Frezewd (2016) there are two schools of thought. One school pleads for optimal capital structure and other does against it. Former school argues that judicious mixture of debt and equity capital can minimize the overall cost of capital and maximize the value of the firm. Hence, this school considers capital structure decision as relevant. Latter school of thought led by Modigliani and Miller contends that financing decision does not affect the value of the firm. However, it should be noted that both debt and equity consists of different elements as it has been stated that there are many different flavors of debt, at least two flavors of equity (common versus preferred), plus hybrids such as convertible bonds when we talk about capital structure of a given company (Brealey, Myers and Allen, 2011).

The following sections discuss these capital structure theories in detail.

2.2.1 Modigliani and Miller Theory (MM theory)

Modigliani and Miller came up with very interesting propositions related to capital structure of a given firm. Their propositions of capital structure with and without corporate tax have been summarized as follows:

The **first proposition (proposition I),** without corporate tax, of Modigliani & Miller states that in a perfect world without imperfections, differences between using debt and equity do not exist and no need to worry about capital structure decision issues. To maximize the value of the company it makes no differences if a company capital structure consists of debt or equity (Modgliani and Miller, 1958). The value of leveraged firm is similar with the value of

unleveraged (an all equity financed) firm. They stated that the firm's value is determined by its real assets, not by the securities it issues.

$$V_L = V_U$$

Where;

VL: value of a levered firm

VU: value of an unlevered firm

However, in the world of corporate tax, **proposition I** states that the value of levered firm is greater than the value of unlevered firm with the amount of tax shield. Thus, a company needs to borrow as much debt as possible. With more debt the tax payments become lower, because the interest can be subtracted and more cash flow remains whereby the value of the company increases. This proposition holds that the value of one firm increases and its weighted average cost of capital decreases alongside with the increase in leverage. In other words, the more usage of debt as a source of finance by a firm, the higher its value will be by an amount equal to the present value tax shields on debt. Thus, this proposition (**proposition I with corporate tax)** concludes the value of levered firm is greater than the value of unleveraged firm by an amount equal to the present value of tax shields on debt and there is optimal capital structure which is all-debt firm. Under this assumption the present value (PV) of tax shield is equal to the corporate tax rate.

$$V_L = V_U + \text{present value of tax shield}$$

Where;

VL: value of a levered firm

VU: value of an unlevered firm

Present value of tax shield = corporate tax rate multiplied by the amount of debt.

Figure2.1: MM theory with tax

Source: Adopted from literatures

The **second proposition (MM-Proposition II, 1958)** with no corporate tax and no bankruptcy coston the other hand states that a firm's cost of equity increases when its debt-equity ratio increases. The intuition is that raising debt makes existing equity more risky, hence more costly. Thus, expected rate of return for equity of a firm with portion of debt is greater than rate of return of equity with all-equity firm. This is due to the fact that adding more debt is risky; the shareholders demand a higher rate of return from the firm's business operations.But they stated that the difference between the two rates is irrelevant since Weighted Average Cost of Capital (WACC) is a straight line with no slope and thus, the capital structure of the firm does not affect its total value (capital structure is irrelevant).

This proposition (**MM-Proposition II)**, however, changed when corporate tax is included. It explains again that companies with more debt have a higher cost of equity. In times of crash, however, less profit is available, because of the interest which must be paid. On the other hand, in more lucrative times the profit must be distributed among fewer shares holders which lead to more earnings per share. Thus, the risk is higher for shareholders, since the larger range between profits due to the debt and interest. Leverage adds more risk to companies, but the tax "shield" reduces something of that risk. Therefore, the cost of equity is growing slower and tax changes the slope of the Weighted Average Cost of Capital (WACC). At the point where WACC is the lowest, the company has the highest value due to the fact that part of the interest can be subtracted from the tax payments (Hillier, et al. 2011).

In reality, markets are inefficient, due to taxes, information asymmetry, transaction costs, bankruptcy costs, agency conflicts and any other imperfect elements. When taking these elements into consideration, the MM theorem tends to lose the majority of its explaining power. However, despite these criticism and its irrelevant assumptions of the real world, this theory still provides the foundation for many other theories suggested by other researches.

2.2.2 Miller with corporate and personal taxes

Separately Miller (1973) developed his theory of capital structure by incorporating the effect of both corporate and personal taxes. As of MM with corporate taxes, this theory also postulates the existence of an optimal capital structure for a particular firm. Specifically, this theory predicts the value of a firm increases as it uses more and more debt finance but at a lower rate as compared to MM with corporate taxes. In other word, this theory suggests that one firm can achieve optimal capital structure by which its value will become maximum holding weighted average cost of capital minimum. As of MM with corporate taxes, this theory also stated that in

order to achieve such optimal capital structure one firm should use a maximum possible amount of debt as a source of finance.

2.2.3 Trade-off Theory

Trade off-theory assumes that there are benefits and costs associated with the use of debt as against equity and firms thus choose an optimal capital structure that trades off the marginal benefits and costs of debt. In the beginning, the theory was limited to the tradeoff between the tax advantages of debt against the bankruptcy costs. Then it was extended to include benefits and costs associated with the use of debt in mitigating the conflicts among the agent groups associated firm (i.e. managers, equity-holders and debt-holders).

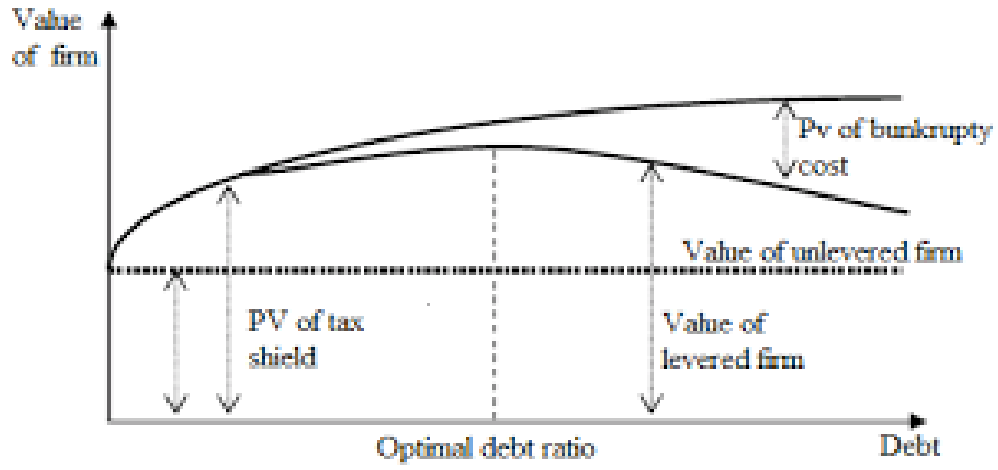
2.2.3.1 Static Trade-off theory

The original version of the trade-off theory grew out of the debate over the Modigliani- Miller theorem. A corporate income tax which was added to their original irrelevance proposition (Modigliani and Miller, 1963) created a benefit for debt in that it served to shield earnings from taxes. As per their proposition there is no offsetting cost of debt, implying a 100% debt financing. This benefit resulted from the reality in which debt has tax advantage to a company since interest payments reduce the firm's taxable income while dividends and share repurchase do not (J. Lewellen and K. Lewellen, 2006).

Since debt has this advantage to a company, shareholders could have a powerful incentive to increase leverage and let companies to perform well. However, excessive dependent on debt opens a possibility for defaults on debts and exposed to bankruptcy costs or financial distress. These costs could be direct in a form of legal and administrative costs during the process of bankruptcy or indirect in a form of loss of profit as a result of unwillingness the stakeholders would be to do business with them. Consequently, to avoid this risk of bankruptcy companies should try to maintain an optimum mix of debt and equity where the marginal benefits of debt equals with the marginal cost of debt. Therefore, in the trade-off theory, as Scott's (as cited in Abnet,2013) claims and it has been a company's optimal debt ratio could be determined by a trade-off between advantages of including debt in their capital structure (tax deductibility of interest payments) and its disadvantage (costs of bankruptcy). In other word, companies are expected to realize a positive relationship between financing through debt up to a certain level with performance since companies have a tax advantage. However, if companies keep on raising debt beyond the optimum level, the advantage of tax eventually disappears and would most

likely makes companies to go bankrupt; as a result the inverse relationship will be observed (Abnet, 2013).

Figure 2.2: Static Tradeoff theory



Source: Adopted from literatures

2.2.3.2 Agency Cost Theory

The agency theory was initially developed by Berle and Means (1932) who argued that due to a continuous dilution of equity ownership of large corporation; ownership and control become more and more separated (cited in Abnet,2013). Furthermore, Jensen and Meckling (1976, pp.310) defined agency relationship as *a contract under which one or more persons (the principal[s]) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent.*

According to this definition, Principals are shareholders and the owners of a company, and the task of its Agents (here there on directors or managements) are merely to ensure that shareholders' interest are maximized or run the company in a way which maximizes long term return of shareholders and company's profit and cash flow.

However, Jensen and Meckling (1976) observed that managers do not always run a company to maximize shareholders' wealth since their interest is never exactly the same as shareholders. There are cases where managers may exert insufficient work effort, indulging in perquisites, choosing input or output that suit their own preference or otherwise failing to maximize company's value. Additionally, Jensen and Ruback (1983) as cited in Abnet (2013) stated that management as the decision making body, tends always to pursue its own interest instead of those of the shareholders in a way that managers tend to spend the free cash flow available to

fulfill their need for self-aggrandizement and prestige rather than returning it back to shareholders.

An attempt to resolve such agency problem is generally impossible for the shareholders or management at zero cost to ensure that the management will make optimal decision from shareholders' viewpoint (Jensen and Meckling, 1976). Thus, to minimize such conflict of interest, in most agency relationships shareholders limit divergences from their interest by establishing appropriate incentives for managers and by incurring monitoring cost designed to limit the aberrant activities of the managers; further in some situations it will pay the management to expend resources (bonding cost) to guarantee that they will not take certain actions which would harm the shareholders or to ensure that shareholders will be compensated if management take such actions. However, it should not be overlooked that these costs will be higher whenever shareholders want to make sure the manager acts in their interest and to control their decisions more. The theory explains that the cash flow of a firm relies on its ownership formation. The authors further suggested that there should be the best combination of debt and equity capital that could shrink total agency costs. In other words, prevailing agency cost determines how much debt should be introduced into the capital structure.

In an effort to mitigate these agency costs and free cash problem, Jensen (1986) put two ways. One way of limiting such problem is to pay out a larger fraction of corporate earnings as dividends and the other one is debt financing, which is the concern of this study. According to Abnet (2013), use of debt as a source of capital can be seen as a disciplinary tool to control agency cost. This is because leverage will force managers to generate and pay out cash, simply because an interest and compulsory payment reduces the amount of remaining cash flows.

Furthermore, a company's use of debt financing may provide additional monitoring of a company's management and decisions, reducing agency costs. By using debt financing, the company reduces its free cash flows and, hence company must reenter the debt market to raise new capital (Fabozzi & Drake, 2009).

In general, the inclusion of debt in a capital structure reduce the agency cost incurred by shareholder which in turn to enhance the company's performance by forcing management to focus on profitable investment. However, the increasing use of debt after a certain level of debt will be limited by a monitoring action taken by debt holders and by problems related to cost of capital; cash problems, a cause for bankruptcy, and an opportunity cost to forgone profitable investment. Therefore, a testable prediction of this model is that increasing the leverage ratio

should result in lower agency costs of equity and improve company financial performance all else equal held. But, when leverage becomes relatively high, further increases generate agency cost of debt arising from conflicts between debt holders and shareholders. Finally, optimal capital structure obtained by trading off the agency cost of debt against the benefit of debt.

2.2.4 Pecking order theory

pecking order theory suggest profitable companies could finance their project by using internal source of financing so that they come up with low debt level; the reverse effect also true. Therefore, leverage expected to have a negative relation with performance.

Myers and Majluf (1984) argued that the capital structure can help to mitigate inefficiencies in a firm's investment decision that are caused by information asymmetries. They demonstrate that if there is an asymmetry of information between investors and firm insiders, then the firm's equity may be underpriced by the market. As a result, new equity, which is used to finance new investment projects, will be also under-priced.

Therefore, if management has favorable inside information and acts in the best interest of the existing shareholders, then management will refuse to issue equity even if it means passing up positive net present value projects because the net loss to existing shareholders (due to under-pricing problem) might outweigh the project's Net present values. On the other hand, passing up net present value projects is contrary to the wealth maximization. Using financial sources that may not be undervalued by the market, particularly internally generated funds could solve this under-investment problem.

Accordingly, the existence of sufficient internal finance allows firms to accept desirable investments without relying on costly external finance. Myers and Majluf (1984) argued that firms are most likely to generate financial slack (i.e. liquid assets such as cash and marketable securities) to be used for internal funding. Thus, in order to protect present shareholders, firms with financial slack and in the presence of asymmetric information, will not issue equity, even though it may involve passing up a good investment opportunity. If investors realize this point, then the market will take the decision not to issue shares as good news. On the other hand, if management does offer a new share issue, it will be interpreted as a bad news, and the firm's share issue will be under-priced.

This adverse selection problem has an influence on the choice between internal and external financing. This choice lead to the Pecking Order Hypothesis, which Myers (1984) stated that firms prefer internal finance to external one when any investment outlay is required. Furthermore, they stated that if internally generated cash flow is less than investment outlays, the firm first exhausts its cash balances or marketable securities portfolio. But if firms do not have any option than using external financing, they will resort to the safest security first (i.e. they start with debt, then hybrid securities such as convertible bonds and finally equity as a last resort).

Thus, a single optimal or target debt-equity ratio does not exist in the pecking order theory since financing decision does not rely on the tradeoff between marginal benefits and costs of debt. Moreover, this shows us that there are two types of equity, internal and external; where one is at the top of the pecking order and one at the bottom. A firm's leverage ratio thus changes when there is an imbalance between internal funds and real investment opportunities.

2.3 Empirical Review

Under this section, empirical literatures related to the topic under study have been reviewed from different nations (international studies or studies outside of Ethiopia) and country specific (studies in Ethiopia). The reviews includethe effects of capital structure on non-financial and financial institutions, and determinants of insurance industry's profitability in Ethiopian case since it has direct relationship with the topic under study.

2.3.1 International studies (Empirical reviewsfrom different countries)

2.3.1.1 Studies on non-financial institutions

Different studies have been conducted by using different methods and data from developed and developing countries to define the effects of capital structure on the profitability of firms. They investigated the link between the choice of leverage ratios, profitability, firm size, firm age and other factors (such as non-debt tax shields, firm growth and collateral values of assets). As stated by Yohannes (2017), Demirguc-Kunt and Huizinga (2000) were the first to consider the effect of financial structure on bank performance for a large number of developed and developing countries in the period from 1990 to 1997. However, recently there are different studies

conducted related to capital structures of different firms of developed and developing countries. The findings of these studies confirmed that there are mixed effects of capital structure on financial performance of firms. The works of different researchers and their findings on non-financial institutions are summarized in the following paragraphs.

Akeem,Terer, & Kayode (2014) studied effects of capital structure on firm's performance of Nigerian Manufacturing Companies. A cross-sectional time series analysis of ten years (2003-2012) was collected from ten (10) manufacturing companies. Multiple regression analysis was applied to know the effect of independent variables on dependent variable. Return on Asset (ROA) and Profit Margin (PM) were used as dependent variables whereas Short-term debt to Total assets (STDTA), Long term debt to Total assets (LTDTA) and Total debt to Equity (TDE) were used as capital structure variables(independent variables). The results show that there is a negative and insignificant relationship between STDTA and LTDTA, and ROA and PM; while Total debt to Equity is positively related with ROA and negatively related with profit margin. The study concludes that statistically, capital structure is not a major determinant of firm performance.

Khan (2017) conducted study on the effect of Capital Structure on the Financial Performance of different Firms: Evidence from Italy.This study was conducted to investigate how changes in capital structure effects the financial performance of different firms in Italy. The study employed 9 years quarterly panel data on a total of 50 firms that are registered on "BorsaItaliana" for a period of 2007 to 2015. The study includes two samples of firms. Firms with small capitalization make the first sample while medium capitalized firms make the second sample. The performance variables used are return on assets (ROA) and return on equity (ROE). To proxy for capital structure total debt to total assets (TDTA) and Total debt to total equity (TDTE) are used, while logarithm of total assets is used as control variable for firm size. The results of the study show a significant negative relationship between capital structure and performance of the firms in Italy. This negative relationship exist both for small and big firms. The estimates also show that a significant positive relationship exists between firm size and performance in Italy.

Mauwa et al (2016) conducted study on effect of capital structure on financial performance of firms listed on the Rwanda Stock Exchange. The study adopted descriptive research design and the population was six companies listed in the Rwanda Stock Exchange. A census survey was conducted on all the six listed firms and purposive sampling technique was used to sample the

respondents to participate in the study. The research design adopted for the study was descriptive survey design. A linear regression model was used to link the independent variable (leverage) to the dependent variables (ROA and ROE). The findings of the study stated that the relationship between capital structure and both ROA and ROE is negative and significant.

Omukaga (2017) studied effect of capital structure on financial performance of firms in the commercial and service sector in the Nairobi Securities Exchange.The researcher employed descriptive research design and secondary data for the period of 5 years (2012-2016) were obtained from the published accounts of the commercial and service firms listed on the Nairobi Securities Exchange. The model of the study comprised of the independent variable (Debt to Equity ratio) and dependent variables (Return on Equity, Profit before Tax, Profit after Tax and Earnings per Share). The study's regression result shows that Debt to Equity ratio has a high correlation with Return on Equity and both Pre and After Tax Profits. As regards the effect of financial leverage on firms' share performance, the study established that the relationship between Debt Equity ratio and Earnings per Share was low.

Tharmila and Arulvel (2013) studied the effect of capital structure and financial performance of the listed companies traded in Colombo stock exchange.The sample of this study composed of thirty companies listed on the Colombo Stock Exchange for the period of 5 five years from 2007 to 2011. The relationship between independent variable, capital structure measured by debt to equity ratio, and dependent variable, financial performance measured by Net profit ratio and ROE were tested by multiple regression analysis and correlation analysis. The regression results indicated that the relationship between capital structure and Net profit ratio and ROE is negative and significant.

2.3.1.2 Studies on financial institutions

The following international studies were done on financial institutions (commercial banks and insurance companies).

Doku (2009) studied the influence of capital structure on the financial performance of the insurance industry of Ghana. Panel data that covered five years for three insurance companies was studied. Ordinary list square estimation method was used. The result of the study showed that capital structure has negative but insignificant effect on financial performance of insurance

companies in Ghana whereas premium growth has significant and positive effect on performance of insurance companies in Ghana. Firm size also has positive but insignificant effect on financial performance of insurance company. The study concluded that it supports the pecking order theory of capital structure.

Gatsi, Akoto&Gadzo (2013) conducted a research on how profitability of insurance firms in Ghana is influenced by working capital management and leverage by using 18 firms and taking the current ratio as representative of working capital management policy and financial leverage and operating leverage as the benchmark for capital structure. Supplementary analysis was also done to assess the impact of premium growth, GDP and firm size. Panel data design was used for the study. The finding of the study indicates that financial leverage has a significant negative effect on the profitability of the insurance companies; operating leverage has a positive and statically significant influence on profitability. Furthermore, firm size has also significant and positive effect on profitability of insurance companies in Ghana. Premium growth and GDP have positive but insignificant effect on profitability of insurance companies of Ghana.

Siddik et al. (2017) conducted study on effects of Capital Structure on financial performance of Banks of Bangladesh.Panel data of 22 banks for the period of 2005–2014 was used. Return on equity, return on assets and earnings per share were used as measure of financial performance (dependent variables) whereas short-term debt to total assets, long-term debt to total assets and total debt to the total assets as independent variables. Liquidity, size and growth opportunities were also used as control variables. The results of the pooled ordinary least square analysis showed that capital structure inversely affects bank performance.

Adeyemi et al (2017) studied the effect of Capital Structure on the Financial Performance of Nigerian Insurance Industry. Secondary data was used for the study which was derived from the audited financial statements of six (6) selected insurance companies for the period of 2012-2016. Panel data methodology was adopted and descriptive statistics, correlation and regression techniques were used as data analysis tools. Capital structure measured by debt ratio and debt-equity ratio were used as independent variables whereas financial performance measured by ROA and ROE were the dependent variables.Company's age was used as control variable. Their result showed that capital structure (measured by debit ratio and debit-equity ratio) has negative relationship with financial performance measured by ROA and ROE. The result also showed that age has positive effect on the financial performance of Nigerian insurance industry.

Samuel (2016) studied the effects of Capital Structure on Financial Performance of Kenyan Commercial Banks. A secondary data of census survey of 43 commercial banks in Kenya was used. The study used annual reports ten year period from 2005 to 2014 that were available from their websites and in the Central bank of Kenya. Total debt, internal equity (retained earnings), external equity (ordinary shares) and preference share were used as independent variables of the study whereas financial performance was measured by EBIT (earnings before interest and tax). The regression result shows that growth in debt would affect financial performance positively leading to improvement in profitability. The study also shows similar effect on retained earnings and preference shares on commercial banks' financial performance. Debt and retained earnings are more significant in predicting financial performance than preference shares which have insignificant factor at 95% confidence level. On the other hand, ordinary shares show different effect, that a unit increase would affect financial performance negatively by decreasing performance at a rate of -1%.

Wainaina (2014) also studied the Relationship between Capital Structure and Financial Performance of Insurance Companies in Kenya. The multiple regression technique was used to show the dependency of financial performance measured by return on assets on independent variables such as financial leverage, log of total assets, growth, age of an insurance company (years since establishment), log of tangible asset and inflation. The study collected secondary data from 36 insurance companies for 5 years (2008 to 2012). Analysis of the model shows that financial leverage (measured by total debt divided by total equity), size, age and inflation affect financial performance positively whereas change in the tangible assets affects financial performance negatively. From the model results, financial leverage and size have a significant effect in predicting financial performance than age and inflation which have an insignificant factor. There was also a fairly strong relationship between the financial performance of insurance companies and the financial leverage, size, age and inflation. The coefficient on tangible assets was negative.

Jelle(2017) studied the effect of capital structure on financial performance of insurance companies listed at the Nairobi Securities Exchange. The target population was all insurance firms listed at the Nairobi Stock Exchange. Six firms were listed and formed part of the study's population for six years period (2011-2016). Data analysis was done via multiple regression analysis, descriptive statistics and correlation analysis. The dependent variable used was

financial performance measured by ROA whereas the independent variables were debt ratio, size of firm and liquidity. The findings show debt ratio having a notable negative effect on insurance companies' performance measured by ROA. Size of the firms was found to have an insignificant negative relationship with ROA whereas liquidity was found to have a positive and significant relationship with financial performance measured by ROA.

Alsakarneh(2018) studied the impact of capital structure on financial performance of commercial banks in Jordan. The Study investigated the effect of capital structure on financial performance of 6 commercial banks in Jordan for the 17 year period from 1999-2016. Two proxies, Return of Assets (ROA) and Return on Equity (ROE) that measure bank performance, were used as dependent variables in the study whereas five explanatory bank variables banks' debt ratio, liquidity adequacy ratio, loan deposit ratio, total assets and equity to total assets ratio were regressed against each of two performance indicators.

A statistical package E-Views was used to model variables through a Panel Least Square method. The results of the study shows that equity to assets ratio is positively related to ROA while high debt ratio results in low or negative ROA. Low bank Liquidity, high loan to debt ratio and bank size affects ROA negatively. The ROE model also shows that Debt ratio, equity to asset ratio and loan deposit ratio affects Return on Equity negatively or does not result in full capacity utilization of assets amongst Jordan banks. The bigger the bank size the higher the return on assets.

Ekwueme & Atu (2018) also studied the effect of Capital Structure on Firms' financial performance in Nigerian quoted insurance companies which revealed the existence of negative relationship between capital structure and insurance companies' performance. The study covered 14 years for 22 Nigerian insurance companies. The regression result of the study revealed that there was weak negative relationship between financial performance measured by ROE and capital structure measured by debt ratio in Nigerian insurance industry.

In general, though studies of effects of capital structure on financial performance look contradictory and debating, majority of the studies conducted in different nations show the existence of negative relationship between capital structure and firm performance.

2.3.2 Empirical review from Ethiopia

This section deals with studies conducted in Ethiopia only in order to reach at the literature and research gap related to the topic. In the context of Ethiopia, there appears to be flimsy works related to relationship between capital structure and a given firm's financial performance in general and insurance companies in particular.

Most of the studies conducted related to capital structure in Ethiopia have emphasized on determinants of capital structure of a given industry. In the case of insurance companies for instance, Bayeh (2011), Mohammed (2014),Saddam (2014), Tesfa (2016) and Guruswamy and Adugnaw (2016) conducted researches on capital structure determinants in Ethiopian insurance industry.On the other hand, there are also studies conducted on determinants of financial performance (profitability) of insurance companies in Ethiopia. In fact, Ayele and Samasivam (2013), Mehari and Aemiro (2013), Meaza (2014), Mistire (2015), Hanna (2015), Hadush (2015),Suyehli (2015), Demis (2016),Simon (2016), Asrat and Tesfahun (2016), Adenew (2017) and Teklit and Jasmindeep (2017) studied firm specific and external determinants of insurance companies profitability in Ethiopia.

However,in contrasts to determinants of capital structure and profitability, there are also studies conducted on the effect of capital structure on firm's financial performance though they were not on the insurance companies. Studies conducted on effect of capital structure on financial performance of a given firm in Ethiopia have been summarized in the following two sub-sections of studies on non-financial and financial institutions.

2.3.2.1 Studies on non-financial institutions

Abnet(2013) studied the effect of capital structure on financial Performance of Ethiopia's Metal and Engineering Industry.The multivariate OLS regression result of the study indicates that capital structure has a significant and positive effect on financial performance (measured by return on equity) of the Metal and Engineering Industry companies as it is measured by debt ratio. Short term debt ratio has also significant whereas long term debt ratio has insignificant but both positive effects as the study examined if different level maturity of debt has a different effect on financial performance and the study concluded that the data from Ethiopia's metal and engineering industry companies support Trade off theories and despite to their significances no different effect in direction on financial performance was found caused by levels of debt

maturity. On the other hand, asset tangibility as a control variable was found to have a significant and negative whereas company size and asset turnover were not.

Asrat(2016) also studied the relationship between Capital Structure and financial performances of Ethiopian cement Companies. From the regression model, the study found that capital structure measured by long term debt to equity ratio has significant positive relationship with return on asset (ROA) and control variables such as tangibility and size has significant positive relationship with return on asset (ROA) and capital adequacy and growth opportunity has insignificant positive relationship with return on asset (ROA). Besides, capital structure measured by logarithm of long term debt to equity ratio has significant negative relationship with return on equity (ROE) and control variables such as tangibility, capital adequacy and logarithm of liquidity has significant positive relationship with return on equity (ROE), while size and change in gross domestic product has insignificant positive relationship with return on equity (ROE). Whereas business risk has significant negative relationship with return on asset (ROA) and return on equity (ROE).

Frezewd (2016) conducted study on corporate capital structure and its impact on profitability of manufacturing firms in Ethiopia. The finding of the study shows that short-term debt to total liability, long-term debt capitalization ratio and interest coverage ratio have positive and significant impact on profitability. But debt ratio and debt to equity ratio found to be insignificant regarding their effect on profitability of the sample firms.

2.3.2.2 Studies on financial institutions

The following studies were conducted on the effect of capital structure on financial performance of financial institutions in Ethiopia, particularly, on commercial banks and micro finance institutions in Ethiopia.

Aragaw (2015) examined the effect of capital structure (financial leverage) on profitability of commercial banks in Ethiopia. The study considered a sample of 8 commercial banks for 12 year (2001/02 – 2012/13). In his study, a profitability measure of the core business operation of banks, Net Interest Margin (NIM) was taken as a dependent variable. Whereas, the Total Debt to Asset, Deposit to Asset, Loan to Deposit, Spread, Growth, and Asset size were used as independent variables. The result shows that Capital structure (leverage)which was measured by debt to asset ratio had statistically significant negative relationship with profitability. This result

also supports the packing order theory and prefers using internal finance before raising debt or equity.

Muhammed, Ashenafi and Netsanet (2015) also jointly studied the effect of capital structure (financial leverage) on financial performance of commercial banks in Ethiopia. The main intention of this study was to examine the relationship between capital structure and performance of commercial banks in Ethiopia. The investigation was based on panel data (from the year 2000-2012) collected from the annual reports of eight sample commercial banks in the country.

The study established a model to measure the association between capital structure which was proxied by total debt to total asset (TDTA) and total debt to total capital (TDTC) and performance which was measured by return on asset (ROA), return on equity (ROE) and net profit margin (NPM). The results of regression analyses indicate that, on average, leverage has a positive effect on the financial performance of commercial banks in Ethiopia when performance measured by return on equity. In contrast, similar analyses indicate that leverage has a significant negative effect on performance of commercial banks in Ethiopia when performance is measured by return on asset and net profit margin. These support both trade off theory and pecking order theory of capital structure.

Another study by Mathewos (2016)was also done on the effect of Capital Structure (financial leverage) on financial performance of Commercial Banks in Ethiopia. The study was done on selected commercial banks in Ethiopia for the period of five (5) years from 2011 to 2015 using secondary data collected from financial statements of the commercial banks. Data was then analyzed on quantitative approach using multiple regression models. The study used two accounting-based measures of financial performance (i.e. return on equity (ROE) and return on assets (ROA) as dependent variable and five independent variables (debt ratio, debt to equity ratio, loan to deposit, bank's size and asset tangibility) as independent variable. The results indicate that capital structure proxies such as debt to equity ratio, Size and Tangibility of asset have negative effect on financial performance, which was measured by ROA whereas Debt ratio has positive effect on return on asset.The results of the study also indicatethat debt ratio and debt to equity ratio have also positive and statistically significant effect on ROE whereas SIZE and Tangibility have negative and statistically significant association with financial performance measured by ROE. While no clear and statistically proved relation are obtained for the Loan to Deposit ratio and financial performance measured by both ROA and ROE.

More recently, Seyoum (2018) studied the effect of leverage on Ethiopian private commercial banks' profitability. Ten private commercial banks of the country were studied. The study covered nine years period (2008/09-2016/17). The dependent variable was return on equity (ROE) that used to measure profitability. The independent variables of the study were degree of operating leverage and degree of financial leverage to measure the leverage of the banks. To ensure the accuracy of the result of the regression model, two more control variables (operational efficiency and bank size) were also used in the study. In order to address the main objectives of the study, balanced panel data was used. The panel data were obtained from the audited financial statements of ten private commercial banks and National Bank of Ethiopia. The data were analyzed by using panel data analysis techniques by using Eviews 8. The regression result of the study indicates that the degree of operating leverage had positive and statistically insignificant effect; the degree of financial leverage had negative and statistically significant effect on profitability of private commercial banks. Moreover, operational efficiency also had negative and statistically strongly significant relationship with profitability. Finally, bank size had statistically significant effect on profitability.

Yohannes (2017) also conducted a research on the effect of capital structure on financial performance of Microfinance Institutions in Ethiopia. ROE was used as dependent variable whereas debt to asset ratio (debt ratio), deposit to asset ratio, interest coverage ratio, loan to deposit ratio, firm size and firm age were used as independent variables. The finding shows that most of the microfinance institutions had employed high leverage. The mean total debt ratio was around 63% as well as the average deposit to total asset ratio shows a mean value of 42.2%. All other variables except firm size do have a positive relation with financial performance measured by (profitability) of microfinance institutions in Ethiopia.

From the above empirical reviews, one can conclude that the effect of capital structure on financial performance of insurance industry in general and private insurance companies of Ethiopia in particular is still gap to be filled though there are some studies (limited in numbers and the findings of some of their variables are contradictory) that were conducted in the area of determinants of insurance companies' capital structure and their profitability.

2.4 Summary and Research gap

As indicated above, the study of relationship between capital structure and firm performance have been tried to be addressed in different developed and developing countries. Studies of Mauwa et al (2016), Omukaga (2017), and Tharmila and Arulvel (2013) conducted on stock exchange of different countries and other firms revealed that capital structure (financial leverage) is negatively associated with ROA and ROE. The study of Akeem, Terer, &Kayod (2014) conducted on effects of capital structure (financial leverage) on firm's performance of Nigerian Manufacturing Companies also revealed the existence of this negative relationship between capital structure (financial leverage) and firms' performance. Furthermore, studies on financial institutions (commercial banks and insurance companies) from these countries also revealed the same findings (Adeyemi et al, 2017; Samuel, 2016; Siddik et al., 2017; and Alsakarneh, 2018).

However, the study conducted by Obonyo (2017) on the effect of capital structure (financial leverage) on financial performance of companies listed at the Nairobi Securities Exchange in Kenya;by Samuel (2016) on the effects of Capital Structure (financial leverage) on Financial Performance of Kenyan Commercial Banks; and by Wainaina (2014) on the relationship between Capital Structure (financial leverage) and Financial Performance of Insurance Companies in Kenya indicated the existence of positive relationship between firm's performance and its capital structure (financial leverage).

When we see the reviewed literatures in the context of Ethiopia, however, it is difficult to find the clear effect that capital structure (financial leverage) has on financial performance of a given firm in general and insurance companies in particular. As indicated above, most of the studies conducted related to insurance industry in Ethiopia dealt with the determinants of capital structure in insurance industry in which the effect of capital structure (the reverse effect) has not been thoroughly studied. Furthermore, the studies conducted in Ethiopia on profitability determinants of insurance companies provide inconsistent and controversial result among the variables used in their study. For instance, Suyehli (2015) found positive and significant relationship between profitability and liquidity whereas Mehari and Aemiro (2013) found 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), Demis (2016), and Asrat and Tesfahun (2016) states that liquidity has negative effect on profitability of insurance companies in Ethiopia.

In addition to this, the relationship between leverage ratio (financial leverage) and firm performance is also inconsistent. Mehari and Aemiro (2013), and Gemechis (2017) found that leverage ratio has significant positive relationship with insurance companies' performance measured by ROA in Ethiopia whereasTeklitand Jasmindeep (2017) found insignificant relationship between leverage and performance of Ethiopian insurance companies.Suyehli (2015) and Hadush (2015) did not even include leverage ratio in to their study whereas the remaining studies stated that leverage ratio has negative relationship with Ethiopian insurance companies' performance.

Furthermore, studies of the effect of capital structure (financial leverage) on financial performance of different industry conducted by Abnet (2013); Frezewd (2016); Asrat (2016); Muhammed, Ashenafi, and Netsanet (2015), Mathewos (2016) andYohannes(2017) showed that capital structure, measured by different ratios, has positive and significant effect on profitability whereas the study of Aragaw (2015) and Seyoum (2018) on the effect of capital structure on profitability of commercial banks in Ethiopia indicates the negative effect of capital structure (financial leverage).

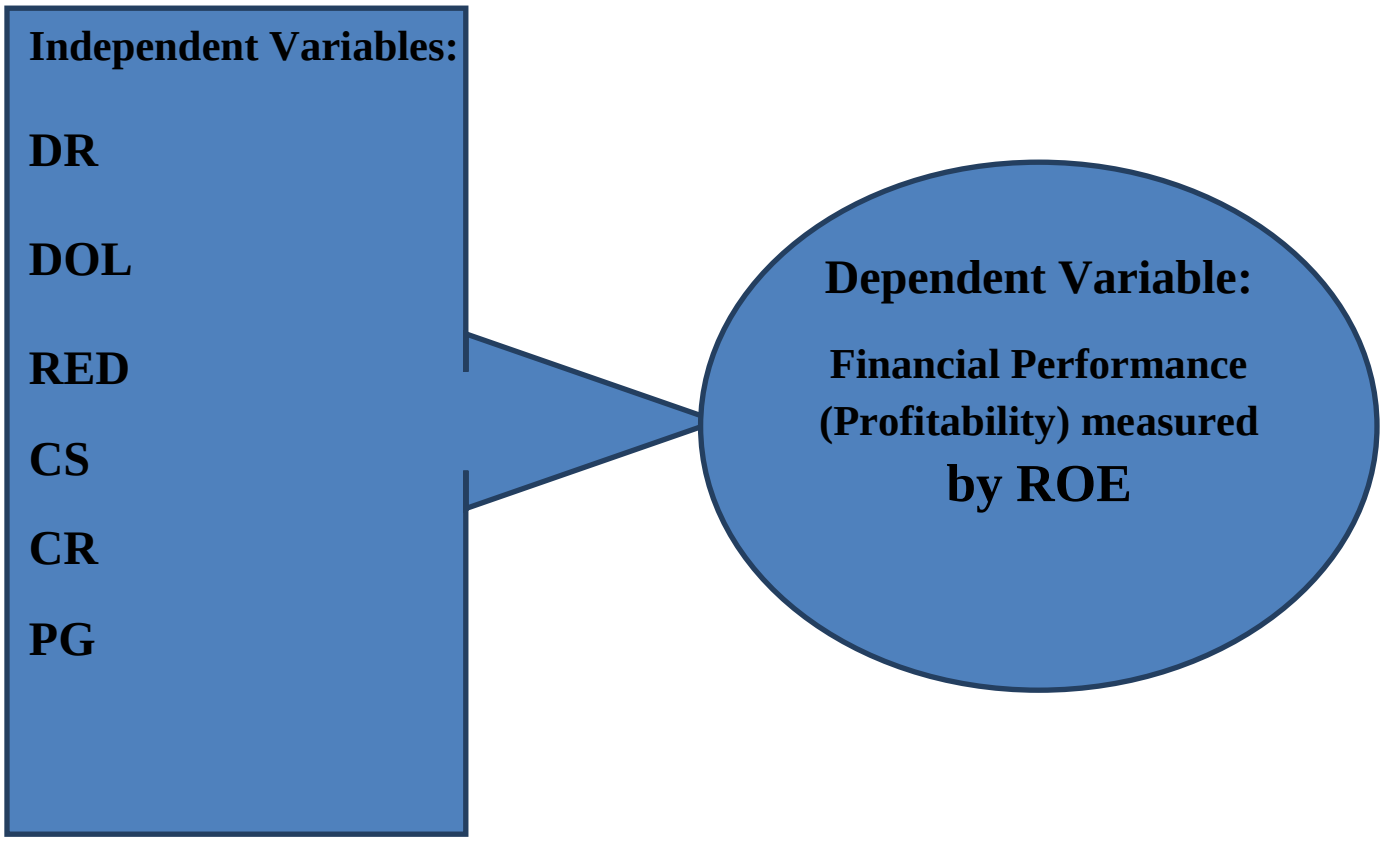
In general, there is an objective ground to study the effect of capital structure on financial performance of insurance companies in Ethiopia given nocomprehensivestudyhas been done on theeffects of capital structure, to the best of the researcher's knowledge, on the financial performance of general (non-life) and life business service of private insurance companies of Ethiopia. Previous studies used limited variables, particularly related to leverage. They used only financial leverage and did not include another very important variable of leverage; operating leverage. Furthermore, previous studies found inconsistent findings related to financial leverage where some studies even did not include this variable in their studies.

Therefore, the objective of this research was to fill this gap by examining the effect of capital structure which was debt ratio (measured by ratio of total liability to total asset)on the financial performance of Ethiopian private insurance companies that was measured ROE. In addition, in order to make the model is appropriately specified and avoid omitted variable bias problem, the researcher also included degree of operating leverage (measured by the ratio of percentage

change of earning before tax to percentage change of gross written premium), reinsurance dependence ratio (measured by the ratio of reinsurance ceded to reinsurer to gross written premium), company size (measured by natural logarithm of book value of the total assets), Claim ratio (measured by ratio of net claims incurred to net earned premiums), and Premium growth (measured by change in premium of this year and prior year divided by prior year) as explanatory variables of the study.

2.5 Conceptual framework

Figure 2.3: Conceptual framework



Source: Researcher's own design based on previous studies, (2018)

CHAPTER THREE:

RESEARCH METHODOLOGY AND DESIGN

3.1 Introduction

This chapter describes the research approach (research methodology)and research design with its corresponding methods that were used to conduct this study. It describes the type of research approach (research methodology) used, research design applied and methods that were selected for data collection and analysis and the reasons for why these methods were chosen in comparison to the other alternatives methods. The chapter in general consists of two main sections and seven sub-sections. The two main sections present the research approach (methodology), and the research design of the study. Under the research design section; research methods,data types and source of data, the population and sampling method, Variables definition and measurement, hypotheses development, model specification and methods of data analysis and interpretation are presented.

3.2 Research Approach (Methodology)

Research methodology is the science and philosophy behind all research. It goes into the heart of how we know what we know and allows us to understand the very strict constraints placed upon our concept of what knowledge actually is. Moreover, it allows us to understand the different ways in which knowledge can be created (Adams et al., 2007). Furthermore, Kothari (2004) states that when we talk of research methodology we not only talk of the specific research methods but also consider the logic behind the methods we use in the context of our research study and explain why we are using a particular method or technique and why we are not using others so that research results are capable of being evaluated either by the researcher himself or by others.

Research approach, on the other hand, refers to the method of data collection, methods of data analysis, interpretation, methods of communicating findings, validation and questions to be addressed, the selected strategy of inquiry (Creswell, 2009). As per Creswell (2009), there are three approaches that are used in conducting a given research. These are quantitative, qualitative and mixed approach. He defined that quantitative research approach is a means of testing

objective theories by examining the relationship among variables. It focuses primarily on the construction of quantitative data; where quantitative data is a systematic measurement and imposing structure; whereas, he stated, the qualitative research is a means of exploring and understanding the meaning of individuals or groups ascribing a social or human problem. It is also stated that quantitative approach employs measurement that can be quantifiable and hence statistical analysis is used while qualitative cannot be measured. Mixed approach, according to Creswell (2009), is an approach to inquiry that combines or associated both quantitative and qualitative forms.

In this study, the researcher used quantitative approach with the rationale that the nature of gathered data to answer the research questions is quantitative. In addition, this approach was used because the main objective of the study was to examine the effect of capital structure on financial performance which is quantitative in its nature.

Furthermore, quantitative approach is means of testing objective theories and hypotheses by examining the relationship among variables which are part of the objectives of this study.

3.3 Research Design

Research design, as Creswell (2009) defined, is plans and the procedures for research that span the decision from broad assumption to detailed methods of data collection and analysis. It includes how data is to be collected (procedures/methods/ strategy to be used in data collection), how the instruments will be employed (instruments of data collection), how the instruments will be used, the intended means for analyzing the collected data, the measurement procedures, source of information, types of information to be obtained and the sampling strategy.

As a research design of the study, the researcher used panel (longitudinal) design since the nature of the study comprised both time series and cross-sectional elements.

According to Brooks (2008) panel or longitudinal design is a design to collect data comprising both time series and cross-sectional elements in which it embodies information across both time and space. Importantly, a panel keeps the same individuals or objects or 'entities' and measures some quantity about them over time. As per Brooks (2008) a panel design and its data have the following important advantages over pure-cross sectional and time-series design and data:

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 pure time-series data would often require a long run of data simply to get a sufficient number of observations to be able to conduct any meaningful hypothesis tests. But 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. The additional variationintroduced by combining the data in this way can also help to mitigate problems of multi-collinearity that may arise if time series are modeled individually.

Third, by structuring the model in an appropriate way, we can remove the impact of certain forms of omitted variables bias in regression results.

Thus, with the rationale of entertaining the above advantages and based on the research objectives and hypotheses, the researcher used panel or longitudinal design for this study.

The detail methods of the study corresponding to the stated design, including the research method itself, have been presented in the following sub-sections of this study as follow:

3.3.1 Research Methods

Adams et al. (2007) defined research method as a way of conducting and implementing research. Kothari (2004) also defined research methods as all those methods which are used by the researcher during the course of studying the research problem.Accordingly, research methods do constitute a part of the research methodology.

Document review (analysis) was used as a method of data collection. As data collection method in research, document review is taken as a systematic collection, documentation, analysis, interpretation and organization of data. Accordingly, audited financial statements of the selected insurance companies were collected and used for this study.

3.3.2 Data type and Source of Data

The type of data used for this study was secondary data in which its main source was secondary source that was collected from National bank of Ethiopia, from the insurance companies head offices and from their website. It is panel data that covered period of ten years (2008-2017). A panel data was used because it embodies information across both time and space. Importantly, a panel keeps the same individuals or objects and measures some quantity about them over time. 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. The additional

variation introduced by combining the data in this way can also help to mitigate problems of multi-collinearity that may arise if time series are modeled individually. 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. Furthermore, if the model structured in the appropriate way, we can remove the impact of certain forms of omitted variables bias in regression results. Specifically, a balanced panel was used since the same number of time-series observations for each cross-sectional unit (or equivalently but viewed the other way around, the same number of cross-sectional units at each point in time) was used (Brooks,2008).

Private insurance companies that have at least ten (10) years audited annual financial statements (i.e. Balance sheet, Income statement and revenue account) on general insurance business and long-term insurance business were source of this panel data. According to Adams et al (2007), the use of secondary sources such as government produced records, personnel records and financial histories tend to be the quickest. They further stated that secondary data have the benefits of managing large representative samples which could have been beyond the resources available for the individual researcher if primary data had been collected; Good for examining longitudinal data (panel data) and looking for trends; Supporting documentation and explanation of methodology, sampling strategy, data codes are given and help the researcher to concentrate on data analysis and interpretation.

Furthermore, in gathering theoretical and empirical literatures that are related to the topic of the study, the researcher used books, journal article, and previous researches (published and unpublished) as secondary sources of data.

3.3.3 Population and Sampling Techniques

The population refers to the entire group of people, events or things of interest that the researcher interested to investigate (Sekaran, 2003). As per NBE quarterly bulletin of 2017, there were 17 (1 public and 16 private) insurance companies with a total of 482 branches operating throughout the country. According to this bulletin report, private insurance companies accounted for about 75 percent of the total capital of insurance companies,while the remaining share is taken up by the single government owned Company, the Ethiopian Insurance Corporation.

However, the target population for this study was only private insurance companies (16) operating in Ethiopia which have a license from NBE to engage in insurance business and did not include the government insurance company (i.e. Ethiopian Insurance Corporation or EIC).

This was because the researcher believed that government owned insurance company is found to be outlier for this study and would affect the data of the study since it consists of more than 25% market share of insurance industry in Ethiopia and it financed by the government for any macro and micro variables. Years of operation (being in operation for at least for ten year and having at least 10 years audited financial statements) and business operation type (operating at least general insurance business) were used as criteria of sample selection for the study. Operating general insurance business was taken as one of the minimum criteria of selection because most of the private insurance companies are primarily operating general insurance business and the portion of long-term insurance (particularly life insurance) business,from the total operation,is very low. In fact, some of the companies are operating only general insurance business and do not have long-term insurance business in their operation.

Thus, all private insurance companies that have at least ten years' (2008 to 2017) audited financial statements, at least on general insurance business, and possibly long-term insurance business have been included in to the sample of the panel data.

According to NBE's report, among these 16 private insurance companies, six of them (Lucy insurance company, Buna Insurance company,Tseahay Insurance company, Berhan Insurance Company, Abay Insurance Company and Oromia Insurance company) were established after 2008 and one (Ethio-Life and General Insurance), though it was established in 2008,was only operating life insurance business and do not have general insurance business until 2013, and thus, did not have at least 10 years' audited financial statements on general insurance businesses.Accordingly, nine (9) out of sixteen Ethiopian private insurance companies (or total of 90 observation)were included in to the panel data through non-random purposive sampling technique which excluded the remaining seven insurance companies from the sample due to the above mentioned reasons. The included sample companies are: Africa, Awash, Global, Nile, Nice, Nib, Nyala, UNIC and Lion insurance companies. The sample size covered 56% of the population under investigation which could be taken as representative though they were chosen purposively. Kothari (2004) stated that if the investigators are impartial, work without bias and have the necessary experience so as to take sound judgment, the results obtained from an analysis of deliberately selected sample can be tolerably reliable.

The number of years covered in the panel is 10 years which balances the tradeoff between includednumber of insurance companies and the length of the period of the panel data; further

increasing the period of the panel would decrease the number of sample insurance companies and vice versa.

Though it is possible to have unbalanced panel in one's study, the nature of this panelwas**balanced panel**since the number of observations is the same for each period of the study to make the analysis of the data straight forward (Gujarati, 2012).

3.3.4 Variables Definition and measurement

This study consisted of seven variables; one dependent variable and sixexplanatory variables. The dependent variable is financial performance (profitability) measured by Return on Equity (ROE) whereas the six explanatory variables (including control variables) aredebt ratio, degree of operating leverage, Reinsurance dependency, Company size, claim ratio, and Growth in premium.All these variables were measured based on book value since the researcher does not have any other option other than book value measure in the absence of capital market (secondary market) in the countries like Ethiopia. According to Myer (1984) cited in Abnet (2013), book value measures preferred since book values are related to values of these variables already in place while market value depends on present value of growth opportunities and very complicated and difficult to find their market value in a place where there is no proper established capital markets (secondary markets).

3.3.4.1 Dependent variable

Financial performance (Profitability):

In finance, various financial ratios; such as return on assets (ROA), return on equity (ROE) and return on investment (ROI) could be used as a proxy measure of companies' financial performance. In this study, the researcher usedROEas proxy measures of financial performance since it is more effective and widely acceptable measure in the existing literature related to capital structure. There is a close relationship between companies' leverage and ROE. According to Brealey, Myers & Allen (2011)ROA depends on the firm's production and marketing skills and is unaffected by the firm's financing mix whereas ROE depends on the debt–equity mix. They further stated that leverage has a good and bad thing for ROE.

Therefore, ROE was chosen as proxy of financial performance of private insurance companies for this study since financing mix has effect on ROE.Empirically, Adongo (2012), Koech(2013),Abnet (2013), Tharmila&Arulvel (2013), Asrat (2016), Mauwa et al. (2016), Siddik et al (2017), Adeyemi et al (2017, Obonyo (2017), Khan (2017), Yohannes (2017),

Seyoum (2018) and Alsakarneh(2018) used ROE as proxy of financial performance in studying effects of capital structure on firms' financial performance[2].

Return on Equity (ROE)

ROE measures the amount of income generated from equity financing of assets employed by dividing profit (earning) after tax by total owners' equity of a company.

Therefore,

ROE= Earnings after Tax /Total owners' Equity

A business that has a high return on equity is more likely to be one that is capable of generating cash internally. Thus, a high percentage of ROE indicate better performance while low percentage represents the reverse. This formula was used by the above listed researchers.

3.3.4.2 Independent variables

As independent variablesof the study, the researcher usedthe following variables:

Financial leverage: Debt Ratio

Financial leverage refers to the extent to which a firm relies on debt. The more debt financing a firm uses in its capital structure, the more financial leverage it employs. Financial leverage can dramatically alter the payoffs to shareholders in the firm (Brealey, Myers & Marcus; 2001).

According to Brealey, Myers & Allen (2011) financial leverage is usually measured by the ratio of long-term debt to total long-term capital. Where; "long-term debt" also includes financing from long-term leases. It should also be noted that this measure of leverage ignores short-term debt where probably this makes sense if the short-term debt is temporary or is matched by similar holdings of cash. But they stated that if the company is a regular short-term borrower (user), it is preferable to widen the definition of debt to include all liabilities.

Thus, putting the nature of the industry under investigation in consideration (Ethiopian private insurance companies' debt is dominated by short-term liabilities), the researcher used financial leverage (debt ratio) measured by the ratio of total liabilities to total assets.

DR = Total liability/TotalAssets

Previous studies such as Bayeh (2011), Mohammed (2014), Saddam (2014), Tesfa (2016), and Guruswamy&Adugnaw (2016) used this formula in their studies of determinants of capital

[2]***Notes that financial performance and profitability was used interchangeably in this study.***

structure of insurance companies in Ethiopia. In addition, Akeem et al. (2014), Mauwa et al. (2016), Weldemikael (2012), Aragaw (2016),Ayele and Samasivam (2013), Meaza (2014), Mistire (2015), Hanna (2015), and Demis (2016) used debt ratio measured by the ratio of total liability to total assets as a measure of financial leverage when they used financial leverage as one of their independent variables.

Particularly, Adeyemi et al (2017), Wainaina (2014), Jelle (2017), and Ekwueme & Atu (2018) used debt ratio measured by total liability to total assets as a proxy measure of capital structure (financial leverage) in their study of effect of capital structure on financial performance of insurance companies in different jurisdiction.

The measure of the ratio was based on book values. Book value was used because it is difficult to use market value since the market values of each insurance company's securities are unknown (since there is no secondary market).

In addition to the measure of financial leverage discussed above, the researcher also included more explanatory variables in this study based on the findings of previous studies. In reviewed literatures; company size, Growth in premium, loss or claim ratio, and reinsurance dependence have been found that they have significant effects on financial performances of insurance companies in Ethiopia.These variables are the most observed variables that different studies stated as the most determinant variables of financial performancein insurance industry in Ethiopia. Other macro variables like GDP and inflation, and other firm specific variables like age and liquidity of the company were found to have insignificant effects on financial performance of insurance companies in Ethiopia, and therefore were not included in this study.

Furthermore, the researched also included degree of operating leverage as an important variable of the study though it has not been included in the previous studies conducted in Ethiopia, but included in other countries studies. The researcher believed that operating leverage has also significant effect on firms' profitabilityin Ethiopia too in addition to the above explanatory variables.

Thus, these variables should be included in to the model since their effect could not be ignored.

Degree of operating leverage (DOL):

The concept of leverage and the degree of leverage can be used to describe the operating risk of a company, which is a component of a company's business risk. Business risk is the uncertainty

associated with the earnings from operations. Operating risk is the risk associated with the cost structure of the company's assets and thus, operating leverage refers to the extent to which fixed costs are used in a firm's operations (Fabozzi, & Drake, 2009). This leverage is measured by degree of operating leverage. Operating leverage affects a firm's operating profit. Other factors held constant, a high degree of operating leverage, implies that a relatively small change in sales results in a large change in return on equity. Prior researchers used different measure of degree of operating leverage (DOL) for example: Gatsi (2013) used the ratio of percentage change in earnings before interest and tax (EBIT) to percentage change in the premiums received (written); Elangkumaran (2013) and Seyoum (2018) used the ratio of percentage change in earnings before interest and tax to percentage change in sales. For this study, the measurement used by Gatsi (2013) was adopted with minor modification since it is more direct to the nature of the current study.

DOL = Δ%EBT/ Δ% of gross written premiums

Reinsurance dependence (RED):

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

RED = premiums ceded in reinsurance divided by gross written premium.

Lee & Lee (2012) used this formula in their study. On the other hand Suyehli(2015), Mistre (2015) and Gemechis (2017) used total assets as a denominator of the formula. The researcher used the Lee & Lee (2012) formula since it directly shows us the portion of total risk to be covered by the insurers for claims that come to a given insurance company.

Company size (CS):

It is measured by total assets of a company in natural log value. This formula was used by Mehari and Aemiro (2013), Ayele and Samasivam (2013), Meaza (2014), Mistire (2015), Hanna (2015), Hadush (2015), Suyehli (2015), Simon (2016), Asrat (2016), Asrat and Tesfahun (2016), and Yohannes (2017).

Claim ratio (CR):

The claims ratio also termed as loss ratio in insurance business and it is defined as the net claims incurred divided by net premiums earned. If this ratio is high, it indicates that lesser amount is available for expenses recovery and thereby has negative effect on profitability of the companies and vice versa. It is measured as:

CR = Net claims incurred / Net earned premiums

Mehari and Aemiro (2013), Meaza (2014), Mistre (2015), Hadush (2015) and Gemechis (2017) also used this formula

Premium Growth (PG):

It measures how firm is growing and is defined as premium of current year less premium of prior year divided by premium of prior year.Growth in premium is defined as the percentage increase in Gross Written Premiums (GWP).

PG = 100*(GWP (t) – GWP (t-1)) / GWP (t-1). Premium growth measures the rate of market penetration. This formula was used by Yuvaraj and Gashaw (2013), Mehari and Aemiro(2013), Ayele and Samasivan(2013), Meaza(2014), Mistre(2015), Hana(2015), Hadush(2015), Demis(2016), and Asrat and Tesfahun(2016).

3.3.5 Development of research hypotheses.

As it has been tried to be described above, the relationships between dependent variable (ROE) and explanatory variables have been hypothesized as follow:

Debt Ratio (DR):

The static trade-off theory predicts that higher level of debt usage, due to its benefits of tax deductibility of interest payments, will favor companies' performance up to a certain range where this tax advantage eventually disappear as a result of the bankruptcy risk and financial distress aroused from excessive utilization of debt (Scott, as cited in Abnet, 2013). Consequently, to avoid this risk of bankruptcy companies would try to maintain an optimum mix of debt and equity at the point the marginal benefit of debt and marginal benefit of equity equals. Accordingly, static trade off theory says there is a positive effect of inclusion of debt in capital structure on financial performance. Likewise, the agency cost theory also predicts that higher leverage is expected to lower agency costs, reduce inefficiency and thereby lead to improvement in companies' performance. Berger (as cited in Abnet, 2013) argues that increasing the leverage ratio should result in lower agency costs of outside equity and improve company performance,

all else held constant. From this contribution, it is expected that leverage to have a positive or direct impact on financial performance.

On the other hand, pecking order theory says that due to asymmetric information occur in between insiders and outsiders, in which there are situations management would have more information about companies' value and investment opportunities whereas investors might not (Myers and Majluf, 1984). In such occasion if management will go for future investment opportunities through external financing, rational investors might consider the management actions as if it is because the management perceived the company is overvalued and as if they are trying to take advantage of it; so that, investors would underprice the company. So that, to avoid such situations management could pass over good investment opportunities that would affect companies' performance unfavorably and further the management will finance their operation in the order as follows: first they will go for internal fund, if this source is exhausted and they have found external financing necessary, they will address their finance deficit using safest debt then to risky one and as a last resort they could use new issuance of equity. Therefore, unlike the previous two theories, pecking order theory forward debt to have a negative effect on financial performance.

In addition to this theoretical controversy, the findings of many empirical studies conducted on insurance companies are also inconsistent. For instance, studies by Weldemikael (2012), Ayele and Samasivam (2013), Meaza (2014), Mistire (2015), Adeyemi et al (2017), Jelle (2017), Ekwueme&Atu (2018), and Demis (2016) showed the existence of negative relationship between debt ratio and insurance companies financial performance which favored pecking order theory.

Contrary to this, however, studies of the effect of capital structure (financial leverage) on financial performance of different industry conducted by Abnet (2013); Frezewd (2016); Asrat (2016); Obonyo (2017), Muhammed, Ashenafi and Netsanet (2015), Mathewos (2016) and Yohannes (2017) show positive effect of financial leverage on financial performance. Specifically, the studies conducted by Wainaina (2014), Mehari and Aemiro (2013), and Gemechis (2017) indicate that financial leverage has positive effect on financial performance of insurance companies and favored the trade-off and agency theory. The current study also hypothesized the existence of this positive relationship between financial leverage and insurance companies' financial performance in Ethiopia putting the most recent empirical evidence of

Gemechis (2017) and nature of the industry itself in consideration.Thus, the first working hypothesis of the study wasstated as:

Hypothesis 1: Debt ratio haspositiveeffect on insurance company'sfinancial performance measured by ROE.

Degree of operating leverage (DOL):

Operating leverage is the relationship between fixed and variable cost in the firm's cost structure. Fixed costs are costs that have to be met regardless of output and revenue. The concept of leverage and the degree of leverage can be used to describe the operating risk of a company, which is a component of a company's business risk. Business risk is the uncertainty associated with the earnings from operations. Operating risk is the risk associated with the cost structure of the company's assets and thus, operating leverage refers to the extent to which fixed costs are used in a firm's operations (Fabozzi, & Drake, 2009). When there is a high percentage of fixed cost in their cost structure, the firm is said to have a high degree of operating leverage. The greater the fixed costs relative to variable costs, the greater the leverage and, hence, operating risk. If sales (gross written premiums) were to decline, the greater the fixed costs in the operating cost structure the more exaggerated the effect on operating earnings (Fabozzi, & Drake, 2009). A degree of operating leverage is the percentage change in EBIT relative to a percentage change in sales. Since EBIT depends on sales (in this study context, written premium), the change in sales will affect EBIT. Hence, the variability in EBIT due to change in sales is affected by the composition of fixed and variable costs (Elangkumaran, 2013). There is a close relationship between companies' operating leverage and ROE. Operating leverages cause a wide fluctuation in earnings before interest and tax for a given change in sales. If a degree of operating leverage (DOL) is higher and return on investment is greater than the cost of debt, the impact of leverage on return on equity will be favorable. But, if earning capacity of a firm is below expected return by lenders impact will be unfavorable (Elangkumaran, 2013). According to Patel (2014), as it is cited in Seyoum (2018), operating leverage is greater for firms with a higher proportion of fixed operating costs. Furthermore, Jensen (1976) states that operating leverage has positive effect on ROE. In line with this theory, Elangkumaran (2013), Gatsi (2013) and Seyoum (2018) found the existence of positive relationship between degree of operating leverage and firm's financial performance.

Thus, the second working hypothesis of the study was developed as:

Hypothesis 2: Degree of operating leverage has positive effect on Insurance Company's financial performance (profitability) measured by ROE.

Reinsurance Dependence:

Studies conducted on the effect of reinsurance dependence on profitability of insurance companies indicate different result. Datu (2016) found positive significant relationship between profitability and reinsurance dependence, suggesting that insurance business with higher reinsurance significantly have higher profitability from their firm. However, the studies that were conducted by Lee & Lee (2012), Mistire (2014), Demis (2016), Asrat and Tesfahun (2016) and Gemechis (2017) found negative relationship between reinsurance dependency and profitability, suggesting that insurance companiesthat have higher reinsurance dependence report low profit in comparison to premium they received from the policyholders. Therefore, in this study the negative relationship washypothesized for the relationship between profitability (ROE) and reinsurance dependence. Therefore, the researcher has formulated the 3rd hypothesis as follows:

Hypothesis 3: Reinsurance dependence has negative effect on Insurance Company's financial performance (Profitability) measured by ROE.

Company size (CS):

Literatures stated that the size of the firm affects favorably its financial performance in many ways. First, large firms (companies) can exploit economies of scale and scope, and thus being more efficient compared to small firms. Second, larger firms have a greater access to long term capital from financial institutions than smaller companies but smaller companies tend to eitherborrow short by means of bank loans or raising capital from owners. Lastly, large firms (companies) would have greater power than smaller companies to compete in highly competitive market. However, it may have unfavorable effect if any suffer from inefficiencies as a firm grows in size which would lead the company to inferior financial performance (Iavorskyi, 2013).Almost all studies conducted so far on profitability determinants of insurance and other financial institutions have included company size as independent variable and found thepositive relationship with financial performance **(**Mehari and Aemiro, 2013; Ayele and Samasivam,

2013; Meaza, 2014; Mistire, 2015; Hanna, 2015; Hadush, 2015; Suyehli, 2015; Simon, 2016; Asrat, 2016; Asrat and Tesfahun, 2016; Yohannes, 2017). Thus, the fourth hypothesis would be:

Hypothesis 4: Company size has positive effect on Insurance Company'sfinancial performance (profitability) measured by ROE.

Claim Ratio (CR):

Claim (loss) ratio is related with the nature of the insurance industry. It is the ratio of net claims paid to net premiums earned and it is used as a proxy to measure the risk of the insurance companies. This shows that insurers that underwrite risky business (e.g., catastrophe coverage) will need to ensure that good standards of management are applied to mitigate their exposure to underwriting losses ex-ante and maximize returns on invested assets ex-post. Excessive risk-taking could adversely affect the performance of insurance companies.

If this ratio is high, it indicates that lesser amount is available for expenses recovery and thereby has negative effect on profitability of the companies and vice versa. Since there may be the argument that the amount of claims incurred cannot be minimized as the portion include perils insured, however, insurers differ to a good extent in terms of this ratio, highlighting the scope for efficient underwriting (Hadush, 2015).

Mehari and Aemiro (2013), Meaza (2014), Mistre (2015),Hadush (2015) and Gemechis (2017) found the existence of negative and significant relationship between Claim ratio and financial performance of insurance companies in Ethiopia.

Therefore, the 5^{th} working hypothesis of the study states that:

Hypothesis 5: Claim ratio has negative effect on Insurance Company's financial performance (Profitability) measured by ROE.

Premium Growth (PG):

Premium growth measures how firm is growing and is defined as premium of current year less premium of prior year divided by premium of prior year. It is measured by the percentage change in premiums of insurance companies and is expected to positively relate with profitability of insurance companies in Ethiopia. Studies conducted by Yuvaraj and Gashaw (2013), Mehari and Aemiro(2013), Ayele and Samasivan(2013), Meaza(2014), Mistre(2015), Hana(2015),

Hadush(2015), Demis(2016), and Asrat and Tesfahun(2016) found a positive and significant correlation between growth in premium and insurance profitability in Ethiopia. Therefore, the sixth working hypothesis of the study is:

Hypothesis 6: Insurance premium growth has positive effect on Insurance Company's financial performance (profitability).

3.3.6 Model Specification

As indicated above, the dependent variable, financial performance of private insurance companies was proxied by Return on equity (ROE) whereas Debt ratio (the main proxy for capital structure), Degree of operating leverage (DOL), Reinsurance dependence (RED), Company size (CS), Claim ratio (CR), and Premium Growth (PG) were used as the explanatory (independent) variablesof the study.

The model for the study was developed on the basis of prior studies such as Adeyemi, et.al (2017), Abnet (2013), Gatsi (2013), Gemechis (2017), Seyoum (2018) and otherswith some modification whichthe researcher believedit captures the essence of the topic under study.

The general model of this study is represented as follow:

$$Y_{it} = \alpha + \beta X_{it} + \mu_{it}$$

Where:

Y_{it} = is the dependent variable

α =Constant term

β= is the slope coefficient

X_{it} = is the explanatoryvariables.

μ_{it}= are the error terms.

i= is the number of firms and

t = is the number of time periods. The subscript „i" representing the cross-sectional dimension and „t" denote the time-series dimension.

Based on the above general model, the effect of capital structure on private insurance companies' profitability wasexamined using the model outlined below;

Financial performance = f (capital structure)

$$ROE_{it} = \beta 0 + \beta 1\,(DR_{it}) + \beta 2\,(DOL) + \beta 3\,(RED_{it}) + \beta 4 Ln(CS_{it}) + \beta 5(CR_{it}) + \beta 6(PG_{it}) + \mathcal{E}_{it}$$

Where;

ROE= Return on Equity as proxy of profitability of company i at time t.

β 0 = is the constant term

$\beta 1$ to $\beta 6$ are the coefficient of the explanatory and control variables.

DR_{it} = Debt ratio for "i" insurance company at time "t".

DOL = Degree of operating leverage for "i" insurance company at time "t".

RED_{it}= Reinsurance dependence for "i" insurance company at time "t"

$Ln(CS)_{it}$= Natural logarithm of Company size for "i" insurance company at time "t"

CR_{it}= Claim Ratio for "i" insurance company at time "t"

PG_{it}= Premium Growth for "i" insurance company at time "t"

$\mathcal{E}_{it}$= the error term

Table 3.1. Summary of Variables, their Measures and expected signs

Variables		Definition	Mathematical Formula	Expected sign
Dependent Variable	Return on Equity (ROE)	The ratio of net income after tax divided by Equity	$ROE = \frac{NI(after\ tax)}{Owners'Equity}$	NA
Independent Variables	Debt ratio (DR)	Total Debt Divided by Total Asset	$DR = \frac{Total\ Debt}{Total\ Asset}$	positive
	Degree of operating leverage (DOL)	Ratio of Δ% in EBIT toΔ% in written gross premium	DOL $= \frac{\Delta\%\ \boldsymbol{EBIT}}{\Delta\%\ \boldsymbol{in\ premim}}$	positive
	Reinsurance Dependence (RED)	Premium ceded to reinsurer divided by Gross written premium	RED $= \frac{premium\ ceded}{Gross\ written\ premium}$	Negative
	Company size	Natural logarithm of Total Asset	CS = Ln(total Asset)	positive
	Claim Ratio	claims incurred divided by net premiums earned	CR $= \frac{Net\ Claim\ Incurred}{Net\ Premium\ Earned}$	negative
	Premium Growth	premium of current year less premium of prior year divided by premium of prior year	PG = 100*(GWP (t) – GWP (t-1)) / GWP (t-1)	Positive

Positive = When the independent/control variable increases, the dependent variable also increases, and vice versa. Negative = When the independent/control variable decreases, the dependent variable will increase, and vice versa.

3.3.7 Methods of Data Analysis and Interpretation

To achieve the stated objective of the study, panel data that covered the period of ten years (2008 to 2017) for 9 Ethiopian private insurance companies was used.

The collected panel data from the sample companies' audited financial statements was analyzed by using E-views software package of version 8. Using this statistical package, the researcher undertook various statistical analysis methods in order to test the proposed hypothesis.

In this study, the descriptive statistics was used to show the basic features of the data (mean, maximum, minimum and standard deviation)for all study variables and it provide a simple summary about the sample and the measures which indicate the variable used in the study.

Descriptive statistics of variableshelp usto provide the researcher and audience in picturing the situation and to present relevant information (Malhotra, as cited in Bayeh, 2011).

Varioustests were also done to check for the conformity of assumptions of Classical Linear Regression Model (CLRM) of Homoscedasticity, no autocorrelation, no multi-colinearity and normality.

In addition, Ramsey'sRESET test (model specification test; test of absence of omitted variable bias) was also done.

Furthermore, test to chooseappropriate model of either a fixed effect or random effect model for the studywas done.

Finally, the study used multiple regression models to test the effect of capital structure and other variableson Ethiopian private insurance companies' financial performance byapplying panel least square regression analysis method with a rational that it can minimize the error between the estimated point on the line and the actual observed points of the estimated regression line giving the best fit. All results are presented through the help of tables and graphs.

CHAPTER FOUR: RESULTS AND DISCUSSIONS

4.1 Introduction

In this chapter, the collected data are analyzed by using various statistical methods. Their corresponding results and discussion have also been presented accordingly. The chapter is organized in sub sections which include descriptive statistics, Classical Linear Regression Model (CLRM) assumptions and their diagnostic tests (including model specification test), model selection test and the regression results. The output of each test has been presented and discussed ina table or/and figure form.

4.2 Descriptive Statistics

Under this section, summary of descriptive statistics of dependent and explanatory variables of the study have been presented. The dependent variable used in the study is performance or profitability which was measured by return on equity (determined by the ratio of earning after tax to total owners' equity). The explanatory variables of the study are debt ratio, degree of operating leverage, reinsurance dependence, company size, claim ratio, and premium growth. The total observation of the study was 90 from data of 9 private insurance companies for the period of ten years (2008 to 2017). The overall descriptive statistics that were computed in the study include mean, median, maximum, minimum and standard deviation of all study variables. Each result of the descriptive statistics was summarized and presented in the following table 4.1.

Table 4.1: Summary of descriptive statistics.

	ROE	DR	DOL	RED	Ln(CS)	CR	PG
Mean	0.188751	0.639206	1.379099	0.223543	19.47682	0.649173	0.216728
Median	0.199191	0.636909	0.869577	0.227341	19.52491	0.663377	0.182416
Maximum	0.448313	0.786909	139.1550	0.359388	20.93531	1.087682	0.625120
Minimum	-0.592300	0.451243	-143.6149	0.064270	16.96121	0.341619	-0.075068
Std. Dev.	0.135616	0.078894	27.04599	0.061781	0.911346	0.122920	0.161099
Observations	90	90	90	90	90	90	90

Source: Output of E-views 8 of the panel data

As indicated in the table 4.1 above, all variables consisted of 90 observations. The descriptive statistics for profitability (financial performance) which was measured by ROE indicates that the

Ethiopian private insurance companies, on average, earned a positive after tax profit over the last ten years.

For the sample of the study, the mean of ROE was 18.87% with a minimum of -59% and a maximum of 45% which indicates that, on average, the sampled Ethiopian private insurance companies earned 18.87 cents of profit after tax for a single birr invested by its owners (shareholders).

The minimum (negative profit or the loss) was recorded during the establishment year of one of the samples' insurance companies which is inevitable for any company during its beginning of operation. The figure looks high, but it was due to the fact that the ratio of Owners' equity was small compared to the amount of loss. Furthermore, the standard deviation for ROE was also 13.56% which indicates the profitability variation between the selected insurers of Ethiopian private insurance companies. The variation (standard deviation) looks high which reveals that the data are somehow far from the mean value. This is due to the extreme values (very large negative losses ratio and high profit value ratios) included in to the data. Parallel with this reality, Brooks (2008) stated that low standard deviation shows that data are very close to the mean, whereas high standard deviation shows data are spread out over a large range of values.

As indicated in the table 4.1, the main independent variable of the study, debt ratio which was measured by total debt to total assets, has a minimum value and maximum value of 0.45 and 0.79 respectively (which was rounded to two decimal places) and average value of 0.6396. This indicates that, on average,63.96% of the total assets are financed by debt with short-term liability domination. The average standard deviation of DR from its mean value is 7.8% which indicates that the data of the companies on DR are close to the DR mean value.

The descriptive statistics for degree of operating leverage indicates that Ethiopian private insurance companies under the study period have a mean degree of operating leverage of 137.9% showing the ratio of percentage change in earnings before tax (EBT) to percentage change in gross written premium.This indicates that, on average a one birr change in gross written premium will produce birr 1.379 changes in EBT. DOL for sampled insurance companies also ranged from -143.6149 to 139.1550. This show that the high degree of operating leverage the insurance company has, the more its profits will vary with a given percent change in gross written premium.DOL had the highest standard deviation (27.04599) which indicates that Degree of

operating leverage shows highest fluctuating trend than other variables. It is found that the tendency of operating profit too enormous with higher written premium.

Another important explanatory variable is reinsurance dependence. As shown in table 4.1 above, reinsurance dependency (RED) has a mean value of 0.22 and standard deviation of 0.06. The reinsurance dependence computed by the ratio of premium ceded to reinsurers to gross written premium. This indicates that, on average,22% percent of the gross premium collected from the customers was ceded for the reinsurance purpose. Compared to the other variables, reinsurance dependence ratio has low standard deviation. This probably due to the fact that insurance companies cannot cede above 30% of their gross written premium to reinsurers since National Bank's regulation prevent them to do so. The ideal ratio (percentage), as per National bank's regulation, is 20-30%. The minimum and maximum value of reinsurance dependence ratios were 6.18% and 35.94%, respectively. The minimum ratio of premium ceded shows high level of retention and vice versa.

Another explanatory variable of the study was Company size. It was measured by natural logarithm of book value of total assets of each company. Its descriptive statistics indicate that it has a mean value of birr 288,440,676.88 which is antilog of the natural logarithm of 19.48, with a minimum and maximum value for the sampled private insurance companies in the study period ofbirr 23,207,823.4424 and birr 1,242,013,880.68 (antilog of the natural logarithm of16.96 and 20.94), respectively. The standard deviation of the Company size of the Ethiopian Private insurance companies was also birr 2.4843 (the antilog of natural logarithm of 0.91).

The table 4.1 also shows descriptive statistics for claim ratio/loss ratio that was measured by the ratio of incurred claims to net earned premium. Claim ratio/loss ratio for the sampled private insurance companies in Ethiopia over the past 10 years was0.649 (or 65%)which implies that for every birr earned as net premium, 65cents would be paid out for loss/claim incurred. In the other way speaking, 65% of net earned premium on average, paid for loss incurred per year by Ethiopian private insurance companies. The minimum and maximum claim/loss ratiosthat were recorded during the study period were 34% and 109%, respectively. The 109% loss ratio indicates that the company (the company with this value) incurred claim above the net earned premium which also shows negative profit (loss) for the company on its main operation. The table also presents 0.123 (or 12.3%) standard deviation for claim ratio for the period of the study.

Another explanatory variable presented in the last column of the table above is premium growth. As it has been demonstrated in the table 4.1 above, Ethiopian private insurance companies have an average premium growth rate of 21.68% with the standard deviation of 16.16% over the past ten years (for the study period that covered 2008 to 2017). The high standard deviation of the premium growth indicates that data for premium growth are spread out over a large range of values.In fact, the minimum and maximum values of the premium growth revealed this fact. The minimum and maximum values of premium growth for the companies for the study period were -7.5% and 62.5% respectively.

4.3 Classical Linear Regression Model (CLRM)Assumptions and Diagnostic tests

To a given econometrics model be reliable and valid, the assumptions of Classical Linear Regression Model (CLRM) should be satisfied. As Brooks (2008) noted 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 regressionmodel assumption is violated or not. Under this section, the basic CLRM assumptions which include Homoscedasticity, no autocorrelation, Normality and no multi-collinearity and their diagnostic tests have been presented and discussed in details. Furthermore, model specification test was also done to check whether the model is properly defined or not.

4.3.1 Heteroscedasticity

Ordinary least squares assumes that all observations are equally reliable (i.e., the error variance is constant). To this opposite, heteroscedasticity is a systematic pattern in the errors where the variances of the errors are not constant. On the other hand, heteroscedasticity test is a test that made in order to check whether these error terms' variance is constant (homoscedastic) or not (heteroscedastic). In order to achieve this, the Breusch-Pagan-Godfrey test was used as it is one of the most popular tests of homoscedasticity. The result of the test indicates that the variance of the error term is constant since the p-value is slightly greater than 0.05. In this regard, it is possible to conclude that the variance of the residuals is homoscedastic.

On the other hand, the p-value of F-statistic of the test statistic of White's[3] test of heteroscedasticity is slightly less than 0.05 (0.0476). But the Chi-Square versions of the test statistic p-value, which is very important for this test, is greater than 0.05 (0.0533) and thus, the null hypothesis that the variance of the errors is constant (homoscedasticity) couldnot be rejected at 5% level of significance using both Breusch-Pagan-Godfrey and White's test.

The result of Breusch-Pagan-Godfreytest for heteroscedasticityis presented in the following table (table 4.2).

Ho: homoskedasticity

Ha: unrestricted heteroskedasticity

Table 4.2: Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.881550	Prob. F(8,81)	0.0742
Obs*R-squared	14.10393	Prob. Chi-Square(8)	0.0791
Scaled explained SS	16.45500	Prob. Chi-Square(8)	0.0363

Source: Output of E-views 8 of the panel data

4.3.2 Autocorrelation: (cov(ui , uj) = 0 for i _= j

The assumption of no autocorrelation between the disturbances states that given any two X values, Xi and Xj (i≠ j), the correlation between any two ui and uj(i≠j), is zero (Brooks, 2008). According to Brooks (2008) it is assumed that the errors are uncorrelated with one another (i.e there is no pattern in the errors). But, if there are patterns in the residuals from a model, they are autocorrelated.The autocorrelation might be positive or negative autocorrelation.

[3] *White's heteroscedasticity test using Eviews 8 and Stata 13 has different results in which output of Stata 13 indicates that the null hypothesis of homoscedasticity cannot be rejected even at 10% level of significance. On the other hand, the Breusch-Pagan-Godfrey test output using both Eviews 8 and Stata 13 indicates the same results and concluded the absence of heteroscedasticity at 5% level of significance. Thus, the researcher used Breusch-Pagan-Godfrey heteroscedasticity test for this study. The outputs of all these tests are presented in the appendix part of this study.*

In the presence of autocorrelation, the coefficient estimates derived by using OLS are still unbiased, but they are inefficient, meaning that the standard errors are biased. Furthermore, the R square is likely to be inflated if the autocorrelation is positive (Brooks, 2008).

Breusch– Godfrey test of autocorrelation was used in this study. Breusch– Godfrey tests allow examination of the relationship between error term and several of its lagged values at the same time. It was used because it is general test for r^{th} order autocorrelation. The hypothesis for the autocorrelation test was formulated as follow:

H0: There is no autocorrelation problem in the model.

H1: There is autocorrelation problem in the model.

$\alpha = 0.05$

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

Table 4.3: Autocorrelation test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.191032	Prob. F(2,79)	0.3093
Obs*R-squared	2.634313	Prob. Chi-Square(2)	0.2679

Source: Output of E-views 8 of the panel data.

As indicated in the table above, the p-valuesof both F-statistic and Chi-Square are greater than 0.05 and the null hypothesis of no autocorrelation problem in the model could not be rejected even at 10% level of significance. Therefore, there is no evidence of autocorrelation in this study.

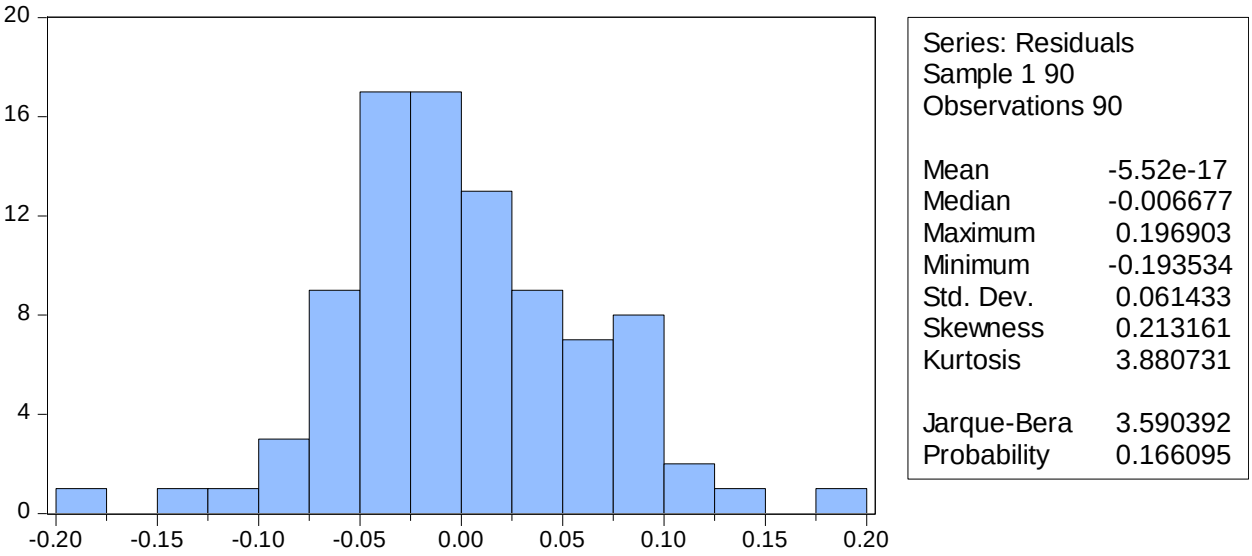
4.3.3 Normality test

Normality is the assumption that the distribution of residuals is normal (Brooks, 2008).This assumption is very important in hypothesis testing since the violation of the assumption would affect the reliability of hypothesis testing.A normal distribution is symmetrical (bell shaped) with skewness of 0 and kurtosis of 3.

However, in the data, there are extreme values (outliers) that could affect the normality of the distribution and its corresponding residual values.In this study, the researcher has observed two

very extreme values and the inclusion of these observations has significant effect on normality and probably on other assumptions. Had these observation been included, the normality assumption would have been violated with negatively skewed and Leptokurtic (high kurtosis) shape of histogram. However, when these values are knocked out through the use of dummy[4] variables, the residuals are normally distributed. Thus, the researcher has used two dummy variables for the two extreme negative ROE observations that were recorded for one company over two year of its operation. Then, the two common tests of normality (i.e. histogram of residuals; and the Jarque–Bera test) were used in this study.Histogram of residuals is used to learn about the shape of the probability density function of the residual whereas the Jarque–Bera test deals with the skewness and kurtosis of the residuals since skewness and kurtosis are the main ingredients of the normality test.

Figure 4.1: Histogram of residuals for normality test



Source: Output of E-Views 8 of the panel

[4]***Note that one company recorded highly negative extreme values of ROE for two consecutive years of its establishment. The inclusion of these two observations highly affects the distribution of the residuals and thus, the normality of the distribution. To avoid this problem, the researcher used two dummy variables (DUMMY81 & DUMMY82) for observation 81st and 82nd, respectively. Dummies were used in instead of dropping the observations to keep the observation 90 and the nature of the panel balanced.***

As indicated in the figure and table above, the value of skewness is close to zero (0) and the value of Kurtosis is close to 3. Furthermore, the null hypothesis of normality is failed to be rejected since the P-value is greater than 0.05. Thus, the residuals are normally distributed and statistical inference made on this assumption could be reliable as far as the normality assumption of the CLRM is concerned.

4.3.4 Multi-collinearity Test

Multi-colinearity indicates the degree of correlation among theexplanatory variables.The best regression models are those in which the explanatory variables each correlate highly with the dependent (outcome) variable but correlate, at most, only minimally with each other (Brooks, 2008). It is stated that however, strong relationship among/between independent variables can exist due to one of the following reasons: 1) one variable is a constant multiple of another 2) Logs are used inappropriately, and 3) One variable is a linear function of two or more other variables.

According to Kennedy (2008) as it is cited in Gemechis (2017), the multicollinearity problem exists when the correlation coefficient among the variables are greater than 0.70.

As shown in table 4.4, there is no multicollinearity problem among the explanatory variables and the correlations among the independent variables are considerably weak with the maximum of 0.42. Thus, the researcher concludes that there is no evidence for presence of multicollinearity problem in this study model.

Table 4.4:Correlation Matrix for independent variables

	DR	**DOL**	**RED**	**Ln(CS)**	**CR**	**PG**
DR	1					
DOL	-0.10	1				
RED	- 0.04	0.0008	1			
Ln(CS)	-0.24	0.05	-0.33	1		
CR	0.26	-0.06	-0.13	-0.03	1	
PG	**0.42**	0.02	0.13	-0.34	-0.05	1

Source: Output of E-views 8of the panel data

4.3.5 Model specification Test

The assumption of the CLRM that the econometric model used in the analysis should be correctly specified. The assumption primarily warns us that there are no equation specification errors or no model specification errors. The equation specification error is due to the omission of an important variable(s), the inclusion of unnecessary variable(s), adoption of the wrong functional form, incorrect specification of the error term, and errors of measurement in the dependent and dependent variables. When appropriate variables are omitted from a model, the OLS estimators of the variables retained in the model are biased and inconsistent. Additionally, the variances and standard errors of these coefficients are incorrectly estimated. The consequences of including 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 (Gujarati, 2009).

To make sure that the model is correctly specified, the researcher carried out the RamseyRESET Test. The hypothesis for the model specification test formulated as follow:

H0: The model specification is correct.

H1: The model specification is incorrect.

$\alpha = 0.05$

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

Table 4.5: Model specification test

Ramsey RESET Test

Equation: UNTITLED

Specification: ROE C DR DOL RED Ln(CS) CR PG DUMMY81 DUMMY82

Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	0.910374	80	0.3654
F-statistic	0.828780	(1, 80)	0.3654
Likelihood ratio	0.927581	1	0.3355

Source: Output of Eviews 8 of the panel data

As it is indicated in the table 4.5 above, the p-values of t-statistics, F-statistics and likelihood ratio are significantly greater than 0.05 which are 0.3654, 0.3654 and 0.3355 respectively (see Appendix 6 for detail). Thus, it can be concluded that the model is correctly specified and there is no evidence of omitted variable bias.

4.4 Model Selection(*Fixed effect versus Random Effect Model*)

Wooldridge (2009) stated that the choice between fixed effect and random effect model is based on the assumption of unobserved effects and the nature of explanatory variables. If unobserved effect is correlated with explanatory variables and these explanatory variables are not constant over time, fixe effect is appropriate; otherwise the random effect should be our choice.The fixed-effects model controls for all time-invariant differences between the individuals, so the estimated coefficients of the fixed-effects models cannot be biased because of omitted time-invariant characteristics. But to statistically decide which panel data estimation model is appropriate, we test null hypothesis of underlying the Hausman test that fixed effect and random effect do not differ substantially.As a decision rule, if the computed chi-square value exceeds the critical chi-square value for given degree of freedom and the level of significance, we conclude that random effect is not appropriate because the random error terms are probably correlated with one or more explanatory variables and thus, fixed effect is preferred to random effect model (Gujarati, 2012)

However, according to Wooldridge (2009), in practice, a failure to reject means either that the RE and FE estimates are sufficiently close so that it does not matter which is used, or the sampling variation is so large in the FE estimates that one cannot conclude practically significant differences are statistically significant. In the latter case, one is left to wonder whether there is enough information in the data to provide precise estimates of the coefficients.

Accordingly, the employed hypothesis for Hausman specification test is:

Null hypothesis (H0): Random- effect model is appropriate

Alternative hypothesis (H1): Fixed-effect model is appropriate.

In order to make choice between random and fixed effect model, the researcher made the decision rule which provided as "if the P-value from the Hausman test is less than 5% of significance level, the fixed effect model is preferred to random effect, otherwise the random effect model is preferable." The finding from Hausman test of model selection,as indicated in the following table,did not allow the researcher to reject the null hypothesis and thus random effect model is more appropriate in the regression analysis of this study since the p-value for Hausman test is strongly greater than 5%. This indicates that the random effects model isappropriate than the fixed effect modelin this particular study.

Table 4.6: **Hausmanspecification test**

Correlated Random Effects - Hausman Test

Equation: Untitled

Test period random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	8.544531	6	**0.2009**

Source: Output of E-views 8 of the panel data

4.4.1 Random Effect (RE) Regression Results

Under this section, the E-views output for random-effect model (REM) regression result is presented in order to examine the effect of explanatory variables (DR, DOL, RED, Ln(CS), CRand PG) on the performance (profitability) of Ethiopian private insurance companies measured by ROE. The summary of the regression result is displayed in the following table 4.7.

Table 4.7:Results of the random effect panel data regression analysis

Dependent Variable: ROE

Method: Panel EGLS (Cross-section random effects)

Date: 12/16/18 Time: 15:00

Sample: 2008 2017

Periods included: 10

Cross-sections included: 9

Total panel (balanced) observations: 90

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.231302	0.218027	-1.060888	0.2919
DR	0.441751	0.109397	4.038070	0.0001***
DOL	0.001111	0.000260	4.270423	0.0001***
RED	-0.056815	0.122743	-0.462874	0.6447
Ln(CS)	0.022855	0.009559	2.390809	0.0191**
CR	-0.449280	0.068691	-6.540596	0.0000***
PG	0.032578	0.051732	0.629736	0.5306
DUMMY81	-0.478361	0.082465	-5.800762	0.0000
DUMMY82	-0.573141	0.071318	-8.036396	0.0000

	Effects Specification	
	S.D.	Rho
Cross-section random	0.000000	0.0000
Idiosyncratic random	0.065754	1.0000

	Weighted Statistics		
R-squared	**0.794800**	Mean dependent var	0.188751
Adjusted R-squared	**0.774533**	S.D. dependent var	0.135616
S.E. of regression	0.064395	Sum squared resid	0.335884
F-statistic	39.21714	Durbin-Watson stat	1.657194

Prob(F-statistic)	0.000000		
	Unweighted Statistics		
R-squared	0.794800	Mean dependent var	0.188751
Sum squared resid	0.335884	Durbin-Watson stat	1.657194

Source: Output of E-views 8 of the panel data

****** and ** denote significance at 1%, and 5% levels, respectively***

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

ROE = -0.2313 + 0.4418(DR) + 0.0011(DOL) - 0.0568(RED) + 0.0229Ln(CS) -0.4493(CR) + 0.0326(PG)

(0.218027) (0.109397) (0.00026) (0.122743) (0.009559) (0.068691) (0.051732).

Note: The values in the parentheses represent standard errors.

As indicated in the above table, the values of the R^2 and adjusted R^2 are 0.7948 and 0.7745, respectively. This indicates that onaverage; about 79.48% of variations in profitability of private insurance companies in our country are explained by explanatory variables used in the model above whereas20.52% of the variation in profitability of private insurance companies is explained by other variables not included in the model. This indicates that the model is properly fit and the explanatory variables are properly selected, combined and used in the study. The null hypothesis of all explanatory variables are jointly equal to zero is rejected at 1% level of significance since the p-value of F-statistic is very low (actually zero). This indicates that financial performance (profitability) and its related factors selected in the study is adequately fit the model and explanatory variables are jointly significant. All the explanatory variables have jointly statistically significant effect on the profitability of private insurance companies in Ethiopia and there is 99.9% probability that the relationship between the dependent and explanatory variables is not due to mere chance.

As indicated in the table 4.7 above, except the reinsurance dependence and premium growth that does not have statistically significance effecton profitability measured by ROE even at

10%significance level, the rest of variables are statistically significant. All signs ofexplanatory variables are with the expectation of the researcher.

4.5 Discussion of the Econometrics regression result

Under this section, the overall regression result of random effect model and the relationship between explanatory variables and profitability of private insurance companies are analyzed, interpreted and discussed in details.

The study result shows that most of the explanatory variables in the model have effect on the profitability of private insurance companies operated in Ethiopia.

The random effects model regression result indicates that except two variables (reinsurance dependence and premium growth),the remaining four variables (Debt ratio (DR), Degree of operating leverage (DOL),Company size (CS) and Claim ratio(CR)) have statistically significant effect on profitability ofprivate insurance companies in Ethiopia. The analysis of the findings or results of the study is done in comparison to the earlier empirical evidences and study conducted on the area.The regression results of each variable and its effects on dependent variables have been presented as follows:

Debt Ratio Versus Profitability of private insurance companies:

Debt Ratio: It is a measure of companies' short term and long term financing and it is calculated by the ratio of total debt to total asset of the company.The regression output of the random effect model presented in table 4.7 above indicates that debt ratio has statistically significant positive effect on profitability of private insurance companies operating in Ethiopia with the p-value of 0.0001 and coefficient of 0.4418.

This result shows that the null hypothesis of the study is rejected at 1% significance level, since the t-statistic of p-value is less than 0.01. Thus, the profitability of Ethiopian private insurance companies is influenced by the companies an overall financing decision which leads us to the rejection of the null hypothesis. Ethiopian private insurance companies' profitability is positively affected by level of debt financing. As the amount of debt (particularly short term debt financed by writing premiums) increases by birr 1, on average,each birr of shareholders' investment earnsbirr 0.4418 of net profit after tax for private insurance companies in Ethiopia. The

regression result of the study is consistent with some existing findings in the previous literature.Ayele and Sambasivam (2013), Gemechis (2017),Teklit and Jasmindeep (2017), and Mehari and Aemiro (2013) have revealed that financial leverage,measured by total debt,has statistically significant effect on general insurers operating in Ethiopia. According to Pervan and Kramaric (2012),as cited in Gemechis (2017), a large insurance companies who has high total gross written premium have a higher leverage ratio. Thus, the finding of this study supports Agency cost theory of capital structure.

Degree of operating leverage (DOL) Versus Profitability of private insurance company:

From table 4.7, it can be observed that the coefficient of degree of operating leverage which is measured by the percentage change in earnings before interest and tax (EBIT) divided by percentage change of gross written premium ratio was the smallest positive coefficient (0.0011) as compared to other variables and a p-value of 0.0001. This shows that holding other things remain constant, a 1% increase in the degree of operating leverage will result in on average increment of 0.11% in profitability which is statistically very significant at 1% significance level. But the coefficient is very small (shows low economic significance). The positive coefficient for degree of operating leverage implies that, whenever private insurance companies increase their degree of operating leverage, they also increase their profit. The result is in line with Jensen (1976) theory; and studies of Elangkumaran (2013) ,Gatsi (2013), and Seyoum (2018).

Reinsurance Dependence Versus profitability of Private 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 presented in table 4.7, the coefficient of reinsurance dependence which was measured by the ratio of premiums ceded in reinsurance to gross written premium was not statistically significant.It has negative insignificant effect on profitability which was measured by ROEwhich implies that increase in reinsurance dependence will leads to decrease in profitability. When the amount of reinsurance ceded increases by one birr, other things remain constant, on average

return on equity decreases by birr 0.057. The result of the current study is consistent withthe previous studies conducted in Ethiopia byMistire (2015), Suyehli (2015), Asrat and Tesfahun (2016) and Demis (2016). In contrary to this, however, Gemechis (2017) found a significant and negative relationship between reinsurance dependence and insurance profits of Ethiopian general insurance business.

Company size and Private insurance companies' profitability:

Size of insurance companies has implications on the amount of premium they are writing and thus, the whole operation of the company. It is also possible to state that it is much harder for smaller companies to write insurance premiums than for bigger ones since smaller company cannot secure their clients in the cases of aggregate uncertainty or big catastrophe event. Larger insurers can achieve operating cost efficiencies through increasing output i.e. they are able to realize economies of scale especially in terms of labor costs, which is the most important factor for delivering insurance services.

Company size which is computed as natural logarithm of total assets of the insurance companies has statistically significant positive effect on the financial performance (Profitability) of private insurance companies in Ethiopia. In fact, it is statistically significant at 5% level of significance (p-value=0.0191).This indicates that profitability of large insurance companies is better than small size companies. Profitability is likely to increase in size, because large insurance companies normally have greater capacity for dealing with adverse market fluctuations than small insurance companies and have more economies of scale in terms of the unit cost, which is the most significant production factor for delivering insurance services, complex information systems and a better expenses management. The finding of this study is consistent with Mehari and Aemiro (2013),Ayele and Samasivam (2013),Meaza(2014),Mistire(2015),Hanna (2015),Hadush (2015),Suyehli (2015),Simon(2016),Asrat (2016), Asrat and Tesfahun (2016), Yohannes (2017). 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 assets such as the establishment of more branches and the adoption of new technologies enables an insurer to underwrite more policies which may increase the underwriting profit and the total net profit. Hence, this study supports the hypothesis that firm size has significant positive effect on private insurance companies' profitability in Ethiopia.

Claim Ratio Versus Profitability of private insurance companies:

Claim Ratiois underwriting risk of loss and adverse changes in the value of insurance liabilities which occurs due to claim incurred from the policy holders. It is measured through loss rate which measure the productivity of the underwriting activity undertaken in the insurance business. It is measured by the ratio of net claim incurred to net premium earned. The regression result above shows that claim ratio was statistically significant and has negative effect on profitability of private insurance companies in Ethiopia. The result is in accordance with the result expected by the researcher and consistent with many results in the literature. Previous studies such as, Asrat andTesfahun (2016), Mistire (2015), Meaza (2014), Demis (2016), Mehari and Aemiro (2013), Suyehli (2015), Datu (2016), and Gemechis (2017)have found negative and significant effect of claim ratio on profitability. Therefore, this argument confirmed that claim ratio or loss ratio has inverse effect on the profitability of private insurance companies operating in Ethiopia. In fact, other things hold constant, when claim increases by birr 1, profit of private insurance measured by ROE, on average, decreases by birr 0.449.

The finding of the current study indicates that understanding root cause of underwriting risk will help private insurance operating in Ethiopia to accurately estimate the future claims or losses and expenses and thereby correctly price the insurance contracts provided by their companies. In addition to that, high claims ratio indicates that, the premium rates are too low for the level of risk or that the claims experience has deteriorated and the company profitability will be endangered. Generally, the reduction of the claim ratio will definitely help the insurers to sustainably increase the profitability, as result of its negative relationship with return on equity (ROE). The rationale behind is that, high claim has negatively influence insurers company's profitability and financial stability by leading the insurers to higher unexpected payments or expenses. Therefore, the researcher concluded that high claim ratios indicates premium rate are too low, for a given level of risk and companies' profitability will be endangered, whereas the low claim ratio indicates an insurers are underwriting profitable business.

Premium growth versus Private insurance companies' profitability:

Premium growth measures the rate of market penetration. Related with the premium growth, the regression result in this research shows that the relation between premium growth and profitability is positivebut insignificant with the p-value of 0.5306. The sign of the regression

result is in line with what has been hypothesized. It implies that insurance companies underwrite more premium over the years have relatively better chance of being profitable. However, it should be noted that the effect of premium growth on profitability of private insurance companies is statistically speaking zero (no effect).

Table 4.8: Summary of expected and actual signs of explanatory variables

Explanatory Variables	Measurement	Hypothesized	Actual Effect	Status of Null Hypothesis
Debt Ratio	Total debt Vs Total assets	Positive and significant	Positive and significant	Rejected
Degree of Operating leverage	Change in EBIT Vs change in Gross Written Premium	Positive and Significant	Positive and significant	Rejected
Reinsurance Dependence	Insurance ceded VsGross written premium	Negative and significant	negative and insignificant	Failed to Reject
Company size	Natural logarithm of total assets	Positive and significant	Positive and significant	Rejected
Claim Ratio	Net claim incurred vs Net premium earned	Negative and significant	Negative and significant	Rejected
Premium Growth	Change in gross written premium	Positive and Significant	positive and insignificant	Failed to reject

CHAPTER FIVE:

CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter deals with the conclusions and recommendations based on the findings of the study. The chapter contains of two sub-sections. The first section presents the conclusions and the second presents the recommendations.

5.2 Conclusion

The issue of effect of capital structure on a given company's performance has been a source of debate since long time. In fact, financially performing well or earning profit is the central issues to the company's overall operational activities.This better financial performance would in turn have effect on the general development of the country's economy at macro level. Recently, there is highly an increasing interest in research on profitability of the companies. However, the effect of capital structure on financial performance of private insurance companies is not well understood in the current different finance literatures in general and in our country case in particular.

Some studies have tried to indicate different determinants of profitability in insurance business by including firm-specific factors, overall industry condition and macro-economic environment as the main causes of the profitability variation. On the other hand, some studies focused on determinants of capital structure of insurance companies in Ethiopia. However, the reverse effect and thebasic question of how financing a company's asset would affect its financial performance have not obtained sufficient answer in Ethiopian private insurance companies.In fact, there are few studies conductedin developing countries in general and in Ethiopia in particular. In light of the above, the major purpose of this study was to investigate the effect ofcapital structure on financial performance of private insurance companies in Ethiopia measured by return on equity.To realize this objective, the researcher used debt ratio (the main variable of capital structure) and other firm specific variables (degree of operating leverage, reinsurance

dependence, companysize, claim ratio, and premium growth) as explanatory (independent) variables of the study.

In this study, quantitative research approach with panel research design was used to achieve the stated objectives. As sampling procedure; non-probability purposive sampling technique was used to select the insurance companies based on selection criteria designed by the researcher. The secondary data used in the study were collected through survey of document reviews from a sample of nine insurance companies over the time period of ten consecutive years (2008 to 2017).The collected data were analyzed by employing OLS estimation method. As a regression analysis model, random effect model was chosen based on Hausman model selection test and EVIEWS 8 statistical package software was used for the data analysis of the study.

In context to this, the results of the random effect model showed thatthe selected explanatory variables have the following effects on financial performance (profitability) of Ethiopian private insurance companies.

The debt ratio, degree of operating leverage and company size have statistically significant positive effect on the profitability of private insurance companies in Ethiopia which is in line with the prior expectation of the researcher and working hypotheses.

On the other hand, Claim ratio has negative and significant effect on profitability of private insurance companies in which the finding is also in line with the prior expectation.

The result of reinsurance dependence, however, suggests negative and insignificant effect whereas premium growth has positive but insignificant effect on profitability of private insurance companies in Ethiopia. The signs of all explanatory variables are in line with the expectation of the researcher.

In conclusion, the stated specific objectives are achieved since the findings of the study indicate that debt ratio, degree of operating leverage, company size and claim ratio have significant effect on financial performance of private insurance companies in Ethiopia; and reinsurance dependence and premium growth have insignificant effect on profitability of private insurance companies in Ethiopia. The results of the current study confirm that Agency theory is relevant theory of capital structure in Ethiopian private insurance companies.

5.3 Recommendations

5.3.1 General Recommendations

Discussion and analysis of the results indicate thatdebt ratio, degree of operating leverage, company size and claim ratiohave significant effect on profitability of private insurance companies in Ethiopia. Based on the result, it is noted that Ethiopian private insurers are more focusing on external financing than the internal financing which help them to make more profit as the ratio of the debt increases. The premium they collect, which can be used as a source of financing as well as part of current liability, plays big role in affecting the level of short-term financing in insurance industry in Ethiopia. In this regard, they can write as much premium as they can but compliant with NBE' policies and procedures to maximize their profit. However, this source of financing is tied with the risk of loss (claim) that needs to be put in consideration. Although premiums are not bearing any interest and no repayment of the amount as principal, it is subject to loss if damage has happened on the insured things. This can be considered as financial distress (though the nature is different from long-term debt financing related financial distress) which is negative effect of debt.

This study also found the existence of high claims ratio which indicates that the premium rates are too low for a given level of risk and the company profitability will be endangered. Therefore, the researcher recommends the insurers should try to minimize the influence of underwriting risk by adopting a risk management strategy that looks at the link between all aspects of the company's business line, better actuarial and risk analysis, better risk differentiation strategy, better pricing, and better retention to achieve superior profitability by increasing the insurers premium rates, and thus increase the net earned premium.

In addition, insurance companies also need to develop efficient strategies to increase operating leverage since each additional written premium does not have to increase costs to generate more premiums. This in turn increases profit margin at a faster pace than the collected premium.

Furthermore, the researcher also recommends the management and the boards thatincreasing the size of their companies,which may include expanding their operation area by opening new branches and introducing new insurance policies, would lead them to get better profit.

Generally, the current study concluded that variable of capital structure and other firm specific variables have significant effect on the profitability of private insurance companies in Ethiopia and thus, it is recommended that the board and management of private insurance companies should give high attention on these variables by considering the way they underwrite both life and non-life insurance product.

Finally, this study examined the effect of firm specific variables, with special emphasis on capital structure variable, on profitability of private insurance companies in Ethiopia. But this studyrelatively employed small cross-sectional samples which leads the study to have small sample size in addition to other resource limitation.

Thus, future researchers may conduct more researches on the area by including variableslike ownership structure (private vs government). In addition, further research should investigate the effect of these variables on separate insurance business operation of life and non-life business since this study was conducted on the composite operation.

Furthermore, this study explained only 79.48% of variation in profitability of private insurance companies and thus, other researchers shall work on identifying and including other variables.

References

Abnet Melese (2013). The effect of capital structure on financial Performance: Ethiopia's Metal and Engineering Industry. Master thesis submitted to Addis Ababa University, College of Business and Economics, Department of Accounting and Finance, Addis Ababa, Ethiopia.

Adams, J., Khan, H., Raeside. R. & White, D. (2007).Research Methods for Graduate Business and Social Science Students.SAGE Publication Inc. New Delhi, India.

Adenew Teshome (2017). Factors influencing profitability in the Ethiopian private insurance companies. A Master thesis submitted to Addis Ababa University, College of Business and Economics, Department of Accounting and Finance, Addis Ababa, Ethiopia.

Adeyemi, A., Unachukwu, J. C ., &Oyeniyi, K. (2017).Capital Structure and Its Effect on the Financial Performance of Nigerian Insurance Industry.International Journal of Business & Law Research,vol. 5(3):8-15.

Adongo, J. (2012). The effect of financial leverage on Profitability and risk of firms listed at the Nairobi security exchange.A Management research project submitted to school of Business, University of Nairobi.

Akeem, L.,Terer,E., Kiyanjui, M.,&Kayode, A. (2014). Effects of Capital Structure on Firm's Performance: Empirical Study of Manufacturing Companies in NigeriaJournal of Finance and Investment Analysis, vol. 3, no.4, 39-57.

Alsakarneh, R. (2018).The Impact of Capital Structure on Financial Performance of Commercial Banks in Jordan.Master's Thesis submitted to Near East University, Graduate School of Social Sciences, Banking And Accounting Program.

Amanuel Mekonnen (2011).The determinants of capital structure evidence from manufacturing share companies of Addis Ababa city. A Master thesis submitted to Addis Ababa University, School of Business and Public Administration, Department Of Accounting and Finance, Addis Ababa, Ethiopia.

Asrat kifle (2016). Capital Structure and Financial Performance: Evidence from Ethiopian Cement Companies. A Master thesis submitted to Addis Ababa University, College of Business and Economics, Department of Accounting and Finance, Addis Ababa, Ethiopia.

Asrat Lire and Tesfahun Tegegn (2016). Determinants of profitability in private insurance companies in Ethiopia. Journal of Poverty, Investment and Development, Vol.26, Pp.85-92

Ayele, G.A. and Sambavizam, Y. (2013).'A study on the performance of insurance companies' in Ethiopia', Financial Services & Management Research, 2(7), Pp.138-150.

Bayeh Asnakew (2011). Capital Structure Determinants: An empirical study on Ethiopian Insurance Industry. A Master thesis submitted to Addis Ababa University, School of Business and Public Administration, Department of Accounting and Finance, Addis Ababa, Ethiopia.

Boodhoo, R. (2009). Capital structure and ownership structure; A review of literature. *The Journal of online education, January edition, 1-8.*

Brealey, R., Myers, S. & Allen, F. (2011). Principles of Corporate finance. 10th ed. McGraw-Hill Irwin: New York.

Brealey, R., Myers, S. & Marcus, A. (2001). Fundamentals of Corporate finance. 3rd ed. McGraw-Hill Irwin: New York, USA.

Brooks, C. (2008).Introductory Econometrics for Finance (2nd Ed.).New York, USA: Cambridge University Press.

Creswell, J. (2009). Research Design: Qualitative, Quantitative, and Mixed methods Approach. 3rd Ed. SAGE Publication Inc. Los Angeles, USA.

Datu, N.(2016). How do insurer specific indicators and macroeconomic factors affect the profitability of insurance business. A Panel Data Analysis on the Philippine Non-Life Insurance Market: A paper presented at the DLSU Research Congress, Vol.4, 7-9.

Dawit Fekadu (2016). Determinants of commercial banks financial performance in Ethiopia. Master Thesis; Addis Ababa University College of Business and Economics Department of Accounting and Finance

Demis Hailegebriel (2016). Macroeconomic and firm specific determinants of profitability of insurance industry in Ethiopia', *Global Journal of Management and Business Research, 6(7), 26-36.*

Doku, F. (2009). The influence of capital structure on the financial performance of the insurance industry of Ghana.A Research Submitted to the KNUST Business School, Kwame Nkrumah University.

Ekwueme, M. & Atu, G. (2018). Capital Structure and Firms financial performance in Nigerian quaoted insurance companies. *Accounting and Financial Management journals, 3(5), 1530-1542.*

Elangkumaran, P. & Nimalathasan, B. (2013).Leverage and its Impact on Earnings and Share Price.International Journal of Technological Exploration and Learning (IJTEL), 2(4).

Fabozzi, F.& Drake, P. (2009). Finance: Capital Markets, Financial Management, and Investment Management.USA, John Wiley & Sons, Inc., Hoboken, New Jersey.

Frezewd Birassa (2016). Corporate Capital Structure and Its Impact on Profitability: Evidence from Manufacturing Firms in Ethiopia. Master thesis submitted to Addis Ababa University, College of Business and Economics, Department of Accounting and Finance, Addis Ababa, Ethiopia.

Gatsi, J.G., Gadzo, S.G. and Akoto, R.K. (2013). Degree of Financial and Operating Leverage and Profitability of Insurance Firms in Ghana. International Business and Management, 7(2), 57-65.

Gemechis Debela (2017). Profitability Determinants in the Insurance Sector in Ethiopia: A Panel Evidence on Non-Life Insurance. A Thesis submitted to Department of Accounting and Finance College of Business and Economics .

Gujarati, D. (2012). Econometrics by example. USA, Palgrave Macmillan: New York.

Guruswamy, D., &Adugnaw Marew (2016).Determinants of Capital Structure of Selected Insurance Companies in Ethiopia.Developing Country Studies (JISTE),6 (10), 6-20.

Hadush Gebru (2015). Determinants of Profitability of Insurance Companies in Ethiopia: An empirical study. A Master thesis submitted to Addis Ababa University, College of Business and Economics, Department of Accounting and Finance, Addis Ababa, Ethiopia.

Hanna Mariam Dejene (2015). Determinants of insurance companies' profitability in Ethiopia. A Master's thesis submitted to Addis Ababa University, College of Business and Economics, Department of Accounting and Finance, Addis Ababa, Ethiopia.

Hillier, D. J., Clacher, I., Ross, S., Westerfield, R., Jaffe, J., & Jordan, B. (2011).Fundamentals of corporate finance. New York: McGraw-Hill.: European edition.

Hussain, I. 2015. 'Macro economy and profitability of insurance companies: a post crisis scenario in Pakistan',Pakistan Business Review, 17(2), 243-263.

Iavorskyi, M. (2013).The impact of capital structure on firm performance: evidence from Ukraine.A thesis submitted in partial fulfillment of the requirements for the degree of MA in Financial Economics, Kyiv School of Economics.

Jelle, H. (2017). Effect of capital structure on financial performance of insurance companies listed at the Nairobi Securities Exchange.A Research Submitted in partial Fulfillment of the requirements for the Award of the Degree of Masters Finance, University ofNairobi.

Jensen, C. & Meckling, H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. Journal of Financial Economics, Vol. 3 (4) PP 305-360.

Jensen, C. (1986). Agency cost of free cash flow, corporate finance, and takeovers. *American Economic Review,* (76) PP 323-329.

Khan, S. (2017).The Impact of Capital Structure on the Financial Performance of Firms: Evidence from Italy. Master's Degree Program in Economics and Finance.

Khrawish, A. (2011). Determinants of Commercial Banks Performance: Evidence from Jordan.InternationalResearch .Zarqa University,*Journal of Finance and Economics, Vol. 5(5), pp. 19-45*.

Koech, S. (2013).The Effect Of Capital Structure On Profitability of Financial Firms Listed at Nairobi Stock Exchange.A Master thesis submitted to Kenyatta University, Department Of Business Administration, Kenya.

Kothari, C. (2004). Research Methodology: Methods and techniques. 2nd ed. New Age International (P) Ltd: New Delhi.

Lee, H.& Lee, C.(2012).An Analysis of Reinsurance and Firm Performance: Evidence from the Taiwan Property-Liability Insurance Industry.*The International Association for the Study of Insurance Economics:The Geneva Papers, 37, (467–484)*

Lewellen, J. And Lewellen, K. (2006). Internal equity, and capital structure. Dartmouth College

Mathewos Woldemariam (2016).The Impact of Capital Structure on Financial Performance of Commercial Banks in Ethiopia.*Global Journal of Management and Business Research: C Finance, 16(8), 42-52.*

Mauwa, J., Namusongeand, G.&Onyango, S. (2016).Effect of capital structure on financial performance of firms listed on the Rwanda stock exchange.*European Journal of Business, Economics and Accountancy,4(4), 1-11*.

Meaza Melese (2014). Determinants of insurance companies' profitability in Ethiopia. A Master thesis submitted to Addis Ababa University, College of Business and Economics, Department of Accounting and Finance, Addis Ababa, Ethiopia.

Mehari D and Aemiro (2013). Firm specific factors that determine insurance companies'performance in Ethiopia. European Scientific Journal, ESJ, 9(10), PP. 245-255

Mistre Sisay (2015). The Determinants of Profitability on Insurance Sector: Evidence from Insurance Companies in Ethiopia. A Master thesis submitted to Addis Ababa University, College of Business and Economics, Department of Accounting and Finance, Addis Ababa, Ethiopia.

Modgliani, F.,& Miller, M. (1958).The cost of capital, corporation finance and the theory of investment.*The American Economic Review*, 48(3), 261-97.

Modiglian, F. & Miller, M. (1963). Corporate incom tax and the cost of capital: a correction. The American Economic Review, 53, 443-53.

Mohammed Getahun (2014). Determinants of Capital Structure and Its Impact on the Performance of Ethiopian Insurance Industry. Master thesis submitted to Jimma University, School of Business and Economics, Department of Accounting and Finance, Jimma, Ethiopia.

Muhammed Aragie, Ashenafi Beyene ,& Netsanet Shiferaw (2015).Does Capital Structure Matter on Performance of Banks? (A Study on Commercial Banks in Ethiopia).*International Journal of Scientific and Research Publications*, 5(12), 643-654.

Myers, S. C., & Majluf, N. S. (1984). 'Corporate financing and investment decisions when firms have information that investors do not have.' Journal of Financial Economics, 13, 187–221.

National Bank of Ethiopia (NBE), from 2008 to 2017,Annual report.

National Bank of Ethiopia (NBE) (2017).Quarterly bulletin report.

Nile insurance Annual report from 2012-2017,online available at *:https://www.nileinsurancec.com [pdf]*.

Nyala insurance Annual report from 2012-2017,*online available at: https://www.nyalainsurance.com [pdf]*.

Obonyo, R. (2017). The Impact of Capital Structure on Financial Performance of Companies Listed at The Nairobi Securities Exchange in Kenya. International Journal of Economics, Commerce and Management, Vol. 5 (6), P. 185-198.

Omukaga, K. (2017). Effect of Capital Structure on Financial Performance of Firms in the Commercial and Service Sector in the Nairobi Securities Exchange.A Master thesis, United States International University- Africa,Chandaria School of Business.

Saddam Mohammedamin (2014). Factors Affecting Capital Structure Decision: Evidence from Ethiopian Insurance Firms. A Master thesis submitted to Addis Ababa University, College of Business and Economics, Department of Accounting and Finance, Addis Ababa, Ethiopia.

Samuel, D. (2016). Effects of Capital Structure on Financial Performance of Commercial Banks in Kenya. Master thesis, South Eastern Kenya University,The School of Business and Economics, Kenya.

SCOTT, J. (1977). Bankruptcy, secured debt and optimal capital structures in developing countries. Journal of Finance, (32) PP 1-19

Sekaran, U.(2003). Research methods for business. Milton: John Wiley and Son Inc.

Siddik, N., Kabiraj, S., &Joghee, S. (2017).Impacts of Capital Structure on Performance of Banks in a Developing Economy: Evidence from Bangladesh.International Journal of Financial Study, Vol. 5 (13, PP.1-18.

Simon, E. (2016). Determining internal factors affecting financial performance of insurance companies' in Ethiopia. The international journal of researcpublication: Research journal of commerce and behaveoral science, 05(06), PP.9-21

Suheyli Reshid (2015). Determinants of Insurance Companies Profitability in Ethiopia. A Master thesis submitted to Addis Ababa University, College of Business and Economics, Department of Accounting and Finance, Addis Ababa, Ethiopia.

Tamirat Lambebo (2015). The effect of debt financing on profitability of commercial banks in Ethiopia.A Master's thesis submitted to Addis Ababa University, College of Business and Economics, Department of Accounting and Finance, Addis Ababa, Ethiopia.

Teklit Atsbeha & Kaur, J. (2017). Determinants of insurance companies' profitability Analysis of insurance sector in Ethiopia.*International Journal of Research in Finance and Marketing (IJRFM),* 7 (4), 124-137.

Tharmila K. ,&Arulvel K. K. (2013).The impact of the capital structure and financial performance: A study of the listed companies traded in Colombo stock exchange.*Merit Research Journal of Accounting, Auditing, Economics and Finance,* 1(5), 106-117.

Trong, N.(2001). Capital structure and microfinance performance: a cross-country analysis and case study of Vietnam, Phd thesis, University of Birmingham.

Wainaina, S. (2014). The Relationship between Capital Structure and Financial Performance of Insurance Companies in Kenya.A Research Project Submitted in partial Fulfillment of the requirements for the Award of the Degree of Masters of Business Administration, School of Business, University ofNairobi.

Weldemikael Shibru (2012). Determinants of Capital Structure of Commercial Banks in Ethiopia. A Master thesis submitted to Addis Ababa University, School of Business and Public Administration, Department of Accounting and Finance, Addis Ababa, Ethiopia.

Wen, W. (2010). Ownership Structure and Banking Performance: New Evidence in China. Universitat Autònoma de Barcelona DepartamentD‟economia de L‟empresa, 2010.

Wooldridge, J. (2009). Introductory Econometrics: A modern Approach (4th Ed.). USA, South-Western Cengage Learning:Michigan State University.

Yohannes Liku (2017). The Effect of Capital Structure on Financial Performance of Microfinance Institutions in Ethiopia.A Master's thesis submitted to Addis Ababa University, College of Business and Economics.

Appendix

Appendix 1: Hausmanmodel selection 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	8.544531	6	0.2009

** WARNING: estimated cross-section random effects variance is zero.

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
DR	0.770748	0.629968	0.020104	0.3208
DOL	0.001058	0.001079	0.000000	0.8110
RED	-0.187066	-0.202416	0.029403	0.9287
LN(CS)	0.069069	0.053509	0.000165	0.2257
CR	-0.629626	-0.692714	0.003402	0.2794
PG	0.032523	-0.006541	0.000584	0.1060

Cross-section random effects test equation:
Dependent Variable: ROE
Method: Panel Least Squares
Date: 12/15/18 Time: 16:47
Sample: 2008 2017
Periods included: 10
Cross-sections included: 9
Total panel (balanced) observations: 90

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.207105	0.409672	-2.946514	0.0043
DR	0.770748	0.204008	3.778030	0.0003
DOL	0.001058	0.000378	2.801267	0.0065
RED	-0.187066	0.242341	-0.771914	0.4426
LN(CS)	0.069069	0.017722	3.897409	0.0002
CR	-0.629626	0.102914	-6.117986	0.0000
PG	0.032523	0.075092	0.433103	0.6662

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.606709	Mean dependent var	0.188751
Adjusted R-squared	0.533294	S.D. dependent var	0.135616
S.E. of regression	0.092647	Akaike info criterion	-1.769023
Sum squared resid	0.643764	Schwarz criterion	-1.352388
Log likelihood	94.60602	Hannan-Quinn criter.	-1.601011
F-statistic	8.264166	Durbin-Watson stat	1.832043
Prob(F-statistic)	0.000000		

Source: Output of E-views 8 of the panel data

Appendix 2: Heteroskedasticity test

1. Heteroskedasticity Test: Breusch-Pagan-Godfrey

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.881550	Prob. F(8,81)	0.0742
Obs*R-squared	14.10393	Prob. Chi-Square(8)	0.0791
Scaled explained SS	16.45500	Prob. Chi-Square(8)	0.0363

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 12/15/18 Time: 16:14
Sample: 1 90
Included observations: 90

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.019792	0.020331	0.973510	0.3332
DR	0.020946	0.010201	2.053337	0.0433
DOL	-2.00E-06	2.42E-05	-0.082402	0.9345
RED	-0.000480	0.011446	-0.041938	0.9667
LN(CS)	-0.001397	0.000891	-1.567181	0.1210
CR	-0.004067	0.006405	-0.634934	0.5273
PG	0.003003	0.004824	0.622432	0.5354
DUMMY81	-0.002628	0.007690	-0.341789	0.7334
DUMMY82	-0.010047	0.006650	-1.510811	0.1347

R-squared	0.156710	Mean dependent var	0.003732
Adjusted R-squared	0.073422	S.D. dependent var	0.006370
S.E. of regression	0.006131	Akaike info criterion	-7.256122
Sum squared resid	0.003045	Schwarz criterion	-7.006141
Log likelihood	335.5255	Hannan-Quinn criter.	-7.155315
F-statistic	1.881550	Durbin-Watson stat	1.910148
Prob(F-statistic)	0.074153		

Source: output of Eviews 8 of the panel data

2. Breusch-Pagan/Cook-Weisberg test for heteroskedasticity

Ho: Constant variance
Variables: fitted values of roe
chi2(1) = 1.96
Prob> chi2 = 0.1642
Source: output of Stata 13 of the panel data

3. Heteroskedasticity Test: White

Heteroskedasticity Test: White

F-statistic	2.076288	Prob. F(8,81)	0.0476
Obs*R-squared	15.31526	Prob. Chi-Square(8)	0.0533
Scaled explained SS	17.86826	Prob. Chi-Square(8)	0.0222

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 12/15/18 Time: 16:23
Sample: 1 90
Included observations: 90

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.011551	0.010126	1.140741	0.2573
DR^2	0.016844	0.008023	2.099410	0.0389
DOL^2	4.13E-08	2.05E-07	0.201742	0.8406
RED^2	-0.005704	0.025604	-0.222778	0.8243
LN(CS)^2	-3.46E-05	2.27E-05	-1.525488	0.1310
CR^2	-0.004173	0.005022	-0.831050	0.4084
PG^2	0.007839	0.009356	0.837801	0.4046
DUMMY81^2	-0.000965	0.008070	-0.119623	0.9051
DUMMY82^2	-0.010784	0.006873	-1.569095	0.1205

R-squared	0.170170	Mean dependent var	0.003732
Adjusted R-squared	0.088211	S.D. dependent var	0.006370
S.E. of regression	0.006082	Akaike info criterion	-7.272211
Sum squared resid	0.002997	Schwarz criterion	-7.022230
Log likelihood	336.2495	Hannan-Quinn criter.	-7.171404
F-statistic	2.076288	Durbin-Watson stat	1.912963
Prob(F-statistic)	0.047599		

Source: Output of E-views 8 of the panel data

4. **White's test forHo: homoscedasticity**

   against**Ha: unrestricted heteroskedasticity**

   chi2(29)=32.58

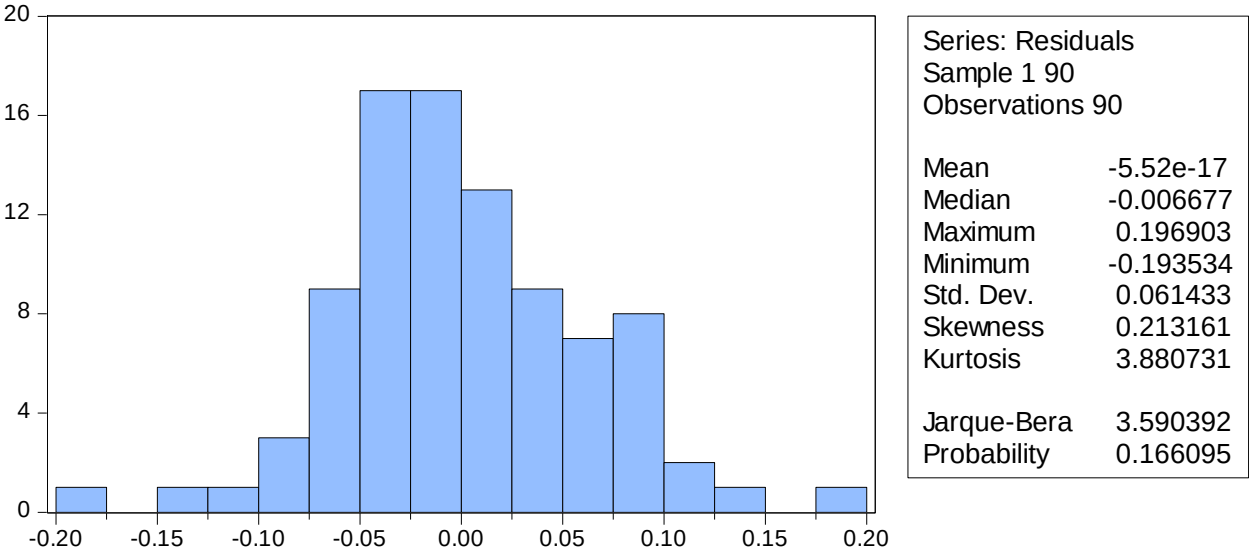
Prob>chi= 0.2948

Cameron &Trivedi's decomposition of IM-test

Source	chi2	df	p
Heteroskedasticity	32.58	29	0.2948
Skewness	5.08	8	0.7485
Kurtosis	1.25	1	0.2637
Total	38.92	38	0.4282

Source: output of Stata 13 of the panel data

Appendix 3: Normality Test



Source: Output of E-views 8 of the panel data

Appendix 4: Test of Autocorrelation

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.191032	Prob. F(2,79)	0.3093
Obs*R-squared	2.634313	Prob. Chi-Square(2)	0.2679

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 12/15/18 Time: 16:33
Sample: 1 90
Included observations: 90
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.005377	0.213442	0.025193	0.9800
DR	-0.008250	0.107018	-0.077087	0.9387
DOL	6.48E-05	0.000258	0.250695	0.8027
RED	0.028045	0.121389	0.231037	0.8179
LN_CS_	-0.000912	0.009402	-0.097019	0.9230
CR	0.014271	0.067886	0.210222	0.8340
PG	0.009231	0.050959	0.181138	0.8567
DUMMY81	-0.004988	0.080718	-0.061798	0.9509
DUMMY82	-0.008557	0.069924	-0.122381	0.9029
RESID(-1)	0.168553	0.116736	1.443883	0.1527
RESID(-2)	0.043750	0.116564	0.375326	0.7084

R-squared	0.029270	Mean dependent var	-5.52E-17
Adjusted R-squared	-0.093607	S.D. dependent var	0.061433
S.E. of regression	0.064244	Akaike info criterion	-2.538185
Sum squared resid	0.326053	Schwarz criterion	-2.232653
Log likelihood	125.2183	Hannan-Quinn criter.	-2.414976
F-statistic	0.238206	Durbin-Watson stat	1.975928
Prob(F-statistic)	0.991391		

Source: Output of E-views 8 of the panel data

Appendix 5: Model Specification Test

Ramsey RESET Test
Equation: UNTITLED
Specification: ROE C DR DOL RED LN(CS) CR PG DUMMY81 DUMMY82
Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	0.910374	80	0.3654
F-statistic	0.828780	(1, 80)	0.3654
Likelihood ratio	0.927581	1	0.3355

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	0.003444	1	0.003444
Restricted SSR	0.335884	81	0.004147
Unrestricted SSR	0.332440	80	0.004155
Unrestricted SSR	0.332440	80	0.004155

LR test summary:

	Value	df
Restricted LogL	123.8815	81
Unrestricted LogL	124.3453	80

Unrestricted Test Equation:
Dependent Variable: ROE
Method: Least Squares
Date: 12/15/18 Time: 16:57
Sample: 1 90
Included observations: 90

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.390547	0.276199	-1.414006	0.1612
DR	0.660589	0.263223	2.509621	0.0141
DOL	0.001558	0.000553	2.814929	0.0061
RED	-0.080500	0.123114	-0.653867	0.5151
LN(CS)	0.034014	0.015430	2.204406	0.0304
CR	-0.669202	0.250785	-2.668433	0.0092
PG	0.043883	0.052215	0.840420	0.4032
DUMMY81	0.047850	0.583643	0.081985	0.9349
DUMMY82	-0.389281	0.213722	-1.821439	0.0723
FITTED^2	-1.215523	1.335191	-0.910374	0.3654

R-squared	0.796904	Mean dependent var	0.188751
Adjusted R-squared	0.774056	S.D. dependent var	0.135616
S.E. of regression	0.064463	Akaike info criterion	-2.541006
Sum squared resid	0.332440	Schwarz criterion	-2.263250
Log likelihood	124.3453	Hannan-Quinn criter.	-2.428999
F-statistic	34.87808	Durbin-Watson stat	1.658709
Prob(F-statistic)	0.000000		

Source: Output of E-views 8 of the panel data

Appendix 6: Summary of the panel data

S.N	Insurance Company Name	Year	ROE	DR	DOL	RED	Ln(CS)	CR	PG
1	Africa	2008	0.123522	0.749578	4.72837	0.270621	19.32757	0.781631	0.2982
2	Africa	2009	0.138201	0.719927	2.174807	0.247908	19.38504	0.752072	0.149591
3	Africa	2010	0.179059	0.737528	1.600873	0.263256	19.72094	0.746688	0.436596
4	Africa	2011	0.162105	0.752484	0.491219	0.23169	19.97988	0.770606	0.368779
5	Africa	2012	0.160383	0.737379	0.461622	0.252268	20.14361	0.810297	0.387607
6	Africa	2013	0.147569	0.689781	-1.89976	0.20244	20.1569	0.827328	-0.07507
7	Africa	2014	0.167823	0.659356	21.37525	0.245723	20.28266	0.862272	0.020146
8	Africa	2015	0.130156	0.599063	-0.04224	0.242788	20.41065	0.748775	0.041424
9	Africa	2016	0.112266	0.56091	-0.32268	0.190856	20.45795	0.796057	0.158872
10	Africa	2017	0.099168	0.586811	-0.35643	0.223324	20.57672	0.883128	0.294578
11	Awash	2008	0.163417	0.649214	1.193727	0.171444	18.93325	0.683593	0.168619
12	Awash	2009	0.171128	0.668301	-0.64702	0.207451	19.11632	0.780189	0.157265
13	Awash	2010	0.217936	0.626998	5.410525	0.174398	19.30086	0.602637	0.2866
14	Awash	2011	0.188668	0.682526	0.245918	0.182445	19.70792	0.590805	0.381105
15	Awash	2012	0.214506	0.70699	0.82469	0.271297	20.05811	0.633328	0.500026
16	Awash	2013	0.272332	0.62809	5.081011	0.109036	20.31285	0.481579	0.24247
17	Awash	2014	0.179397	0.580673	-115.932	0.138777	20.36838	0.568887	0.002468
18	Awash	2015	0.174342	0.531608	3.386498	0.160424	20.48474	0.640665	0.099827
19	Awash	2016	0.100391	0.451243	1.757691	0.216928	20.73112	0.641492	0.182476
20	Awash	2017	0.167367	0.554583	-0.19356	0.231388	20.88631	0.607701	0.144244
21	Global	2008	0.069308	0.554321	2.530978	0.260541	17.60576	0.5119	0.207332
22	Global	2009	0.16931	0.57667	3.99860	0.27207	17.8044	0.50558	0.11518

			7	9	1	8	1	3	2
23	Global	2010	0.144175	0.595136	2.336005	0.209401	17.92265	0.441281	0.288644
24	Global	2011	0.068449	0.574149	-0.2919	0.255858	17.99542	0.787752	0.358278
25	Global	2012	0.045477	0.681474	0.783277	0.270915	18.3545	0.876161	0.443062
26	Global	2013	0.320435	0.647468	6.211825	0.227881	18.63745	0.568191	0.249001
27	Global	2014	0.283794	0.56994	3.532882	0.213316	18.85303	0.573487	0.182357
28	Global	2015	0.209052	0.509635	0.206819	0.204686	19.04361	0.629581	0.142107
29	Global	2016	0.192394	0.502994	0.139154	0.229568	19.21176	0.430202	0.122101
30	Global	2017	0.200782	0.601093	-27.5399	0.259384	19.05826	0.615947	0.011606
31	Nile	2008	-0.0539	0.733126	-143.615	0.199244	19.13217	0.812538	0.014948
32	Nile	2009	0.058735	0.700645	-14.6962	0.277839	19.18696	0.676188	0.125669
33	Nile	2010	0.273662	0.590272	40.47414	0.183388	19.32552	0.53576	0.156272
34	Nile	2011	0.202716	0.6175	-0.47039	0.170176	19.5116	0.704671	0.330618
35	Nile	2012	0.214101	0.607503	0.929574	0.165344	19.80109	0.695651	0.448122
36	Nile	2013	0.226688	0.605425	-8.59989	0.186535	19.9607	0.727559	-0.02896
37	Nile	2014	0.293968	0.596982	1.391267	0.156631	20.12057	0.683792	0.174115
38	Nile	2015	0.169628	0.572949	-1.14418	0.138514	20.28829	0.679091	0.132516
39	Nile	2016	0.069737	0.608266	-3.37091	0.118635	20.41363	0.774079	0.175031
40	Nile	2017	0.27613	0.589945	139.155	0.144704	20.60642	0.727528	0.033934
41	Nice	2008	0.138524	0.666237	1.327301	0.270333	17.59671	0.673995	0.157298
42	Nice	2009	0.169531	0.680229	-0.33139	0.286363	17.74983	0.681306	0.140112
43	Nice	2010	0.159777	0.702859	1.965756	0.343606	17.95911	0.677271	0.315916
44	Nice	2011	0.013305	0.786909	1.060464	0.213533	18.27584	0.727564	0.327505
45	Nice	2012	0.391017	0.681893	4.669747	0.257186	18.78871	0.540506	0.414056
46	Nice	2013	0.348036	0.726376	0.588385	0.207509	19.21429	0.590273	0.257537

47	Nice	2014	0.236974	0.736203	-13.3378	0.193825	19.35385	0.564512	0.018273
48	Nice	2015	0.342491	0.677795	47.39058	0.190347	19.45272	0.700235	0.018273
49	Nice	2016	0.29686	0.719541	-0.85751	0.068072	19.63445	0.657059	0.3589
50	Nice	2017	0.281778	0.698571	4.387256	0.06427	19.80603	0.645805	0.144351
51	Nib	2008	0.274977	0.680905	1.759811	0.140949	18.73538	0.661156	0.507879
52	Nib	2009	0.249679	0.697443	1.049581	0.141962	19.15284	0.680862	0.315626
53	Nib	2010	0.255822	0.715946	0.760911	0.174335	19.40742	0.653841	0.322906
54	Nib	2011	0.24789	0.709125	0.559161	0.190621	19.60341	0.563616	0.306169
55	Nib	2012	0.29167	0.758455	1.098787	0.146571	20.02914	0.67652	0.482227
56	Nib	2013	0.288108	0.708634	31.62074	0.136576	20.11828	0.646089	0.013534
57	Nib	2014	0.279901	0.673674	7.586269	0.191843	20.34446	0.760282	0.029328
58	Nib	2015	0.190975	0.656109	-2.8168	0.196579	20.50111	0.672019	0.077585
59	Nib	2016	0.127698	0.624012	-11.2524	0.14154	20.58921	0.706755	0.017711
60	Nib	2017	0.139175	0.637684	3.308357	0.151472	20.71924	0.707347	0.086939
61	Nyala	2008	0.11877	0.617412	-0.65762	0.207435	18.83157	0.672098	0.536279
62	Nyala	2009	0.238589	0.548762	44.00529	0.23481	18.93231	0.541386	0.03506
63	Nyala	2010	0.238745	0.625399	1.048128	0.359388	19.17359	0.539294	0.263613
64	Nyala	2011	0.383629	0.679408	1.580568	0.33669	19.53821	0.443362	0.205063
65	Nyala	2012	0.256203	0.524037	1.969196	0.252588	19.68463	0.341619	0.323836
66	Nyala	2013	0.296023	0.594025	0.914464	0.323379	19.98102	0.395811	0.275794
67	Nyala	2014	0.255159	0.581013	1.14687	0.287958	20.24189	0.356761	0.094019
68	Nyala	2015	0.262366	0.636134	0.722134	0.226801	20.54073	0.715801	0.24625
69	Nyala	2016	0.244516	0.637777	1.290346	0.317736	20.70383	0.723269	0.084581
70	Nyala	2017	0.295833	0.610545	6.008517	0.321822	20.93531	0.549888	0.090976
71	Unic	2008	0.26481	0.55758	4.46030	0.31375	18.9303	0.56417	0.26923

			9	8	2	6	4		1
72	Unic	2009	0.10616	0.611678	-17.7191	0.315172	19.10291	0.745972	0.03772
73	Unic	2010	0.237278	0.569601	46.85249	0.26965	19.28449	0.556241	0.056882
74	Unic	2011	0.163965	0.574482	-0.71051	0.301892	19.50266	0.691015	0.341689
75	Unic	2012	0.215379	0.586157	2.291693	0.276132	19.82316	0.470907	0.405949
76	Unic	2013	0.276679	0.55966	16.56782	0.31596	20.01284	0.526847	0.04306
77	Unic	2014	0.236496	0.548094	0.222895	0.239765	20.18912	0.505962	0.164389
78	Unic	2015	0.181421	0.487147	-0.77051	0.244347	20.28943	0.516264	0.083448
79	Unic	2016	0.146659	0.469304	-0.05901	0.19296	20.4765	0.623148	0.062037
80	Unic	2017	0.140464	0.526687	-0.14003	0.233941	20.6383	0.682773	0.219843
81	Lion	2008	-0.5923	0.529164	0	0.270433	16.96121	1.087682	0
82	Lion	2009	-0.41895	0.754841	-0.77627	0.335211	17.29598	0.765022	0.62512
83	Lion	2010	0.313766	0.763279	-1.75917	0.254782	17.82738	0.665597	0.593148
84	Lion	2011	0.241549	0.779945	0.037493	0.274337	18.18183	0.494892	0.535284
85	Lion	2012	0.448313	0.774176	3.434039	0.277914	18.60398	0.646735	0.554747
86	Lion	2013	0.275426	0.702766	1.785719	0.251506	18.88982	0.670027	0.19021
87	Lion	2014	0.201868	0.643372	1.50191	0.215908	19.25934	0.576516	0.165064
88	Lion	2015	0.198	0.677354	0.303363	0.185013	19.41622	0.60746	0.2714
89	Lion	2016	0.166463	0.73097	-0.92813	0.165359	19.63033	0.659145	0.252001
90	Lion	2017	0.165731	0.780584	-0.34072	0.229662	19.82698	0.736259	0.238902