Addis Ababa University
School of Graduate Studies
College of Business and Economics
Department of Accounting and Finance

DETERMINANTS OF CAPITAL STRUCTURE IN FINANCIAL INSTITUTION-THE CASE OF INSURANCE COMPANIES IN ETHIOPIA

A Thesis Submitted to the Department of Accounting and Finance, College of Business and Economics, Addis Ababa University, in Partial Fulfillment of the Requirements for Degree of Master of Accounting and Finance

By Tibebe Alemayehu Alemneh

Addis Ababa University

Addis Ababa, Ethiopia
MAY, 2020

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DECLARATION

Tibebe Alemayehu Alemneh, here***b***y declare that the project work entitled "The Determinants of Capital Structure: Evidence from insurance companies in Ethiopia "Submitted by me for the award of the degree of Master of Science in Accounting and Finance in Addis Ababa University, is original work and it hasn't been presented for the award of any other Degree, Diploma, Fellowship or other similar titles of any other university or institution.

Declared by	Confirmed by Advisor
Name: Tibebe Alemayehu	Name: Habtamu B. (PhD)
Signature __________	Signature ____________
Date______________	Date_________________

CERTIFICATION

This is to certify that Tibebe Alemayehu Alamneh has carried out his research work on the topic entitled "Determinants of capital structure in the case of insurance companies". The work is original in nature and is suitable for submission for the reward of the MSc Degree in Accounting and Finance.

Signed by the Examining Committee:

Advisor ______________________________ Signature ______________ Date ______________

Examiner______________________________Signature ______________ Date ______________

Examiner_____________________________ Signature ______________ Date ______________

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Chair of Department of Graduate Program Coordinator

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ABBREVIATIONS AND ACRONYMS

ACT	Agency Cost Theory
AG	Age
CLRM	Classical Linear Regression Model
DBE	Development Bank of Ethiopia
DER	Debt to Equity Ratio
EIC	Ethiopian insurance companies
G7	Group of Seven
GDP	Gross Domestic Product
GRO	Growth
H0	Null Hypothesis
H1	Alternate Hypothesis
IBIT	Income before interest and tax
IFC	International Finance Corporation
INF	Inflation
MM	Modigliani and Miller
MOFED	Ministry of finance and Development
OLS	Ordinary Least Square
POT	Pecking Order Theory
PRO	Profitability
TT	Trade-off Theory
SZ	Size
TAN	Tangibility

ABSTRACT

This study empirically examines the determinants of capital structure of insurance companies in Ethiopia. The study tried to identify the specific firm and macroeconomic factors that managers should consider when deciding their optimal capital structure. The study employed fixed effect panel regression model in examining the capital structure of insurance companies in Ethiopia with financial statements of 9 insurance companies covering the period of thirteen years, 2005-2017. The model (fixed effect panel regression model) fitness was tested using normality, multicollinearity, Heteroskedasticity, autocorrelation and redundant fixed effects tests on the data used for the model. The results show that pecking order theory is prominently important in explaining the capital structure of insurance companies in Ethiopia. Firm specific factors such as profitability, growth, risk, tax rate, and size of the firm were found to be significant in relation to leverage. Macroeconomic factors used in this study, GDP and inflation were positively related with leverage at significant level of 1%. The study indicated that the independent firm specific variables of profitability, growth, risk, tax rate, and size of the firm and macroeconomic variable of GDP and inflation were significantly related to leverage. Therefore, managers of the insurance companies should consider the impact of these significant variables in determining their financing needs so as to maximize the value of the company and meet the shareholders return to the extent that gives value for their invested money.

Key Words:-Capital Structure, Determinants, Insurance Companies, Ethiopia, D/E

Chapter One

Introduction

1.1 Background of the study

Capital is an important and critical resource for all companies. The capital resources can be divided into two main categories, namely equity and debt. Equity arises when companies sell some of its ownership rights to gain funds for operation and investing activities. Debt is a contractual agreement, where by companies borrow an amount of money and repay it with interest within a stipulated time frame.

There are many definitions given to capital structure of companies. Brealey and Myers (1991) defined capital structure as comprising of debt, equity or hybrid securities issued by the firm. Schmuckler and S, Vesperoni, E. (2000) defined capital structure as the proportion of debt to the total capital of the firms. Haugen and Senbet (1988) defined capital structure as a choice of firms between internal and external financial instruments.

From the definitions given by many previous researchers, capital structure can be Referred to as "the mixture of sources of funds a firm uses" (debt, preferred shares, and ordinary shares). The amount of debt that a firm uses to finance its assets is called leverage. A firm with a lot of debt in its capital structure is said to be highly levered. A firm with no debt is said to be unlevered.

In terms of financial theory, insurers are no different from other sector in the economy with respect to the general factors that determine the capital structure and the market value of the firm except that insurer's debt as more closely corresponding to policy claims than to conventional debt, then insurer debt is contingent and indeterminate (Dionne, 2013).

As per the researcher's access and knowledge, the study conducted on determinants of capital structure so far in the Ethiopian insurance sector include: Regassa (2014), Abate (2012), Kinde (2011), and Getahun (2014). Though, their contributions are important and worth mentioning, most of these studies focused on limited dataset that covered less than ten years attributed to firm specific factors. Moreover, these researchers used only internal firm specific factors for their analysis. The impact of macroeconomic variables and other external factors such as GDP growth rate and inflation rate were not considered. Therefore, the aim of this study was to assess the influence of firm specific and macroeconomic factors on capital structure decision made by Ethiopian insurance firms.

The objective of this study is to empirically test the influence of firm specific characteristics and macroeconomic variables on capital structure of insurance companies in financing their operations

The importance of this study has been initiated from the fact that insurance sector plays a valuable role in support of the growth of the country's economy, and providing cover for properties and services exposed for different insurable risks to the public who are exposed for these risks. In this context, this study examined the main firm specific and macroeconomic factors that determine capital structure decision of companies that enable them achieve their objectives of supporting the economy in general, the specific needs of its stakeholders in particular. Given limited domestic studies exclusively on insurance capital structure determinants, especially taking into consideration of the minimum regulatory capital requirement, the study was conducted to bridge the gap in this regard.

1.2 Statement of the Problem

Despite extensive research of four decades, the theory of capital structure remains one of the most controversial issue in modern corporate finance subject and Myer's (1984) twenty-five years old question; "How do firms choose their capital structure"? Still remains unanswered.

Over the previous years, numerous studies on capital structure theory have appeared. However, based on the research made by Myers (1984), it is stated that each of the theories on capital structure applied are based on certain circumstances. As such, the theories are not designed to be general rather they are conditional theories of capital structure; each of which emphasizes on certain costs and benefits of alternative financing strategies. Most capital structure studies to date are based on data from developed countries' firms and very few studies provide evidence from developing countries. The capital structure of insurance companies have not also been investigated; there is no clear understanding on how insurance companies construct their capital structure and what internal (firm-specific) factors and macroeconomic factors influence their corporate financing decision. Therefore, given the unique financial features of insurance companies and the environment in which they operate, there is a strong ground to conduct separate study on capital structure determinants in insurance companies (Amidu, M. 2007).

An insurance company is in the business of transferring risk. It does this by accepting premium from policyholders and paying claims. It can happen that the premium collected is less than the total amount paid for claims. If this is the case, the insurer is expected to pay for the claims from the capital of the insurance company. It is for this reason that the insurance regulator has a prime concern in the capital that the insurer has maintained. The regulator concern is to maintain the safety and soundness of insurance companies so that they can fulfill their obligations to the policyholders. Whereas, the owners (or investors) of the insurance company are concerned with the return and the safety of their investment (Fortune, 2014).

From regulatory perspective, insurers need to estimate the capital they need, and then effectively manage their capital to maximize the company's value and shareholder returns considering the minimum required regulatory capital. On the other hand considerable debate is happening among the industry officials regarding the level of capital required to support their business operation and maximize return to the shareholders. Their argument goes with the tradeoff postulates that increasing of profitability is possible when the proportion of debt to equity is increased and when Companies get more leveraged (dionee, 2013).

The analysis of factors that determine the capital structure of the Ethiopian insurance companies in context with the above discussion points had not been adequately dealt to the author's best knowledge. The studies made in Ethiopian insurance sector so far did not consider testing the effect of macroeconomic variables (such as GDP and inflation) which are expected to have significant effect on the capital structure of Ethiopian insurers. Hence this study is made to independently identify the influence of firm specific factors and macroeconomic factors so as to fill the above stated gap by analyzing their impact on financing decision of insurance companies in Ethiopia by utilizing the most recent dataset, covering the years 2005-2017.

Research question

I. Which Specific factors and macroeconomic are important in determining the capital structure of insurance companies in Ethiopia?

1.3. Objective of the Study

1.3.1. General Objective

The general objective of this study is to analyze the internal (firm level) factors and Macroeconomic factors (External factors) determining capital structure decisions of Insurance companies in Ethiopia.

1.3.2. Specific Objectives

This study attempted to achieve the following specific objectives:

i. To determine the effect of change in profitability on the capital structure of insurance companies in Ethiopia.

ii. To determine the effect of tangibility of assets held by insurance companies of Ethiopia on the capital structure.

iii. To explore whether the variations in debt to equity ratio of insurance companies in Ethiopia

iv. To determine the effect of a change in growth of insurance companies on their leverage.

v. To determine the Impact of business risk on capital structure in insurance companies of Ethiopia.

Vi. To Determine the impact of business Tax rate on capital structure of insurance companies in Ethiopia.

Vii. To Analyze The impact of liquidity on financial decision of insurance companies in Ethiopia

viii. To analyze the Impact of GDP on financial leverage

ix. To determine the impact of inflation on leverage.

1.4. Research hypothesis

In this section, I will present a brief discussion of explanatory attributes as proxy for the determinants of the firm's debt-equity choice. These attributes are denoted profitability, tangibility, size, growth, risk, tax rate and liquidity. These determinants and indicators are discussed below.

Table 1

S/N	VARIABLES	SIGNE	DEFINITION
1	Profitability	-	EBIT/TOTAL ASSETS
2	Tangibility	+	Tangible Assets/Total Assets
3	Size	+	Log of sales
4	Growth	-	%change EBIT
5	Risk	+	SD of EBIT
6	Business Tax Rate	-	Tax paid/EBIT
7	Liquidity	-	Liquid Assets/Total Assets
8	GDP	+	Annual percentage of change of gross domestic product
9	Inflation	+	%increase on price and cost

H1. A negative relationship between leverage and profitability is expected in Insurance companies.

H2. Insurance companies with more tangible assets has higher leverage ratios.

H3. Larger Insurance companies have higher leverage ratios.

H4. Insurance companies with more growth opportunities will have lower leverage ratios.

H5. Insurance companies with higher business risk have lower leverage ratios.

H6. Business tax rates are positively related with leverage, because of the influence of tax shields.

H7. There is a negative relationship between leverage ratio and liquidity.

H8. There is a positive relationship between leverage ratio and GDP.

H9. There is a positive relationship between leverage ratio and inflation rate.

1.5 Significances of the Study

The main reason for this study were that the researchers have not paid enough attention to this subject in Ethiopia. Therefore, this study would drop light on the scarcity of these types of study.This study, attempted to assess the determinants of insurance companies' capital structure in Ethiopia, and provides evidence on what effect the firm-specific factors and macroeconomic factors have on the insurance company's capital structure in Ethiopia. Analysing and understanding the impact of different factors on the insurance capital structure in Ethiopia is a major stepping result to enlighten what should be done if the right mix of capital structure is to be achieved. Therefore, the findings of the study would benefits to insurance companies, regulatory authorities, managers and others interested parties in the area and give the opportunity to gain deep knowledge about the relationship of internal and external factors with capital structure. This in turn helps those knowing factors affecting capital structure and thereby takes appropriate actions to know the determinants of capital structure of insurance industry. Moreover, the researchers also contribute that this study would potentially serve as a stepping stone for further research in the area.

1.6 Scope and Limitation of the study

The scope of the study determined by the objective of the research which is stated earlier and it's emphasizes on identify and examining the determinants of capital structure. The study focused only on the determinants of capital structure of insurance companies in Ethiopia. There are only one public insurance sector and 16 private insurance companies in Ethiopia. 9 out of 17 insurance companies included in the sample. 8 excluded insurance companies are either newly established (not operational before 2005) or their data is not retrievable. Secondary annual balanced panel data of selected insurance companies for 13 years (2005-2017) used in this study; the time period is used to get relevant and recent data for the study.

The study focused on the most commonly used firm's specific determinants like (profitability, tangibility, size, growth, risk, growth, profit tax rate and liquidity) and macroeconomics determinants like (GDP and inflation). Scope of the study confined merely on the quantitative measure of determinates of insurance companies capital structure in Ethiopia. Therefore the researcher used entirely secondary data for the study.

The major limitations that hamper the study were resource constraint and unavailability of secondary market which forced the researcher to measure the dependent variable i.e. measure of leverage as well as the proxies of the independent variable interns of book values rather than market values.

1.7 Organization of the study

The research paper organized in to five chapters. Chapter one is introduction in which overview of the insurance industry background, statement of the problem, objectives of the study, formulation of research hypothesis, significance of the study and scope and limitation of the study presented. Chapter two would be review of related literature in which theories, empirical evidence and conceptual frame work are identified. Chapter three is research design and methodology. Chapter four is data analysis and discussion in which the finding results interpreted. Finally, Chapter five brings to an end the research with summary, conclusions and possible recommendations.

Chapter Two

Review of Related Literature

2.1. Objectives of the Chapter

This chapter is a review of the definition of capital structure, the theory of capital structure, empirical evidences of determinants of capital structure, insurance companies' capital structure.

2.2. Definition of capital structure

As companies' capital structure constitutes the core element in this dissertation it is suitable to define what the concept of company capital structure actually is. Different definitions have been used in the capital structure literature. Brealey, Myers, & Marcus (2009) defines capital structure as the 'mix of long-term debt and equity financing'. However, as capital structure relates to the way that companies finance their assets it is inadequate only to include long term debt and equity in the capital structure definition, as they can just as readily issue short term debt or convertible debt to provide financing.

The choice will ultimately relate to company preferences, as well as the nature of the asset being financed. Similarly, Welch (2011) challenges the use of only including financial debt and equity into the capital structure measure and advances instead a measure including total liabilities to total assets. Using this leverage measure indicates that capital structure consists of all liabilities, both financial and non-financial, and equity. For the purpose of the literature review and the capital structure theories treated it is sufficient to use a definition of capital structure between the two above mentioned. As such capital structure is defined as the mix of financial debt, including long- and short-term debt and convertible debt, and equity.

This definition is able to capture the implications of the capital structure theories examined in the following sections. When financial leverage increases, it may bring better returns to some existing shareholders but its risk also increases as it causes financial distress and agency costs (Jensen and Meckling, 1976). The cost of financial distress can be both direct and indirect. The bankruptcy cost is an example of direct financial distress cost while extraordinary administrative costs, loss of trade credit, loss of sales and key personnel are examples of indirect financial distress costs. Therefore, optimal capital structure is determined by the trade-off between benefits and costs of debt financing. The benefits are typically tax savings and the costs are financial distress and agency costs (Titman and Tsyplakov, 2007).An appropriate capital structure is a critical decision for any business organization.

The decision is important not only because of the need to maximize returns to the Shareholders, but it is also important because of the impact of such decision on an Organization's ability to deal with its competitive environment (Simerly and Li, 2002).

2.3. Capital structure Theoretical studies and Empherical studies

2.3.1 Theoretical studies

How can the capital structure be determined that maximizes the firm's value? This puzzle is introduced by Modigliani and Millers (1958). Whether the costs and benefits of leverage drive the managers to decide leverage in capital structure or they are market opportunities that guide managers to issue debt or equity? Do firms have any target leverage that changes overtime for which manager adjust debt equity ratio continuously or they don't have any target leverage to maintain? To answer these questions four popular theories of capital structure are available in literature are MM theory, trade-off theory, pecking order theory and agency theory. Because there is no formula given to find the exact capital structure to maximize firm value, many studies have been conducted to collect the empirical evidence from all over the world to test the hypothesis given by these theories (Ross et al, 2008).

2.3.1.1 Modigliani and Miller (MM) theory

Capital structure theory was initiated by Modigliani and Miller (1958) who hypothesized that when there are no taxes, the market will be more efficient. They indicated that the firm's value does not depend on the amount of debts taken by the firm. According to Modigliani and Miller (1958), the model depends on two keys: arbitrage and borrowing on personal account. The former is a process ensuring that two firms varying only in their capital structure must have the same performance. The latter means that an investor raises a personal loan through a share that he/she held in a levered firm. He/she can sell the share, spend the proceeds in the unlevered firm, or increase his/her income without additional costs.

In a further study, Modigliani and Miller (1963) introduced corporate taxes into the existing model and found that once this underlying assumption was relaxed, capital structure can become relevant because the value of firms increases. Modigliani and Miller (1963) affirmed that the firm's value does depend on the amount of debts employed by the firm. They considered the tax shield benefits associated with the debt used. In addition to the tax model of Modigliani and Miller (1963), Miller (1977) introduced personal taxes into the model (i.e. previously only corporate taxes). According to Miller (1977), firms may continue to utilize debt until the marginal investor's personal tax equals the corporate tax rate. This is because additional supply of debts may increase interest rates until the tax advantages of interest deduction are equalized by higher rates. Modigliani and Miller's theory has been expanded by Myers and Marsh, P. (1982). They proposed that firms rely on internal funds at the beginning of the business. For those firms with less information to provide, they may use less debt capital as they encounter a problem of asymmetric information and possess high earnings, respectively. Durand et al. (1959) criticized the theory of efficient market (Modigliani and Miller, 1963). They stressed the effect of imperfectness in the market, a preference for present income over future returns, transaction costs and institutional restriction; on capital structure and the value of the firm. More recently, Ebrahim and Mateus, C. (2006).addressed the limitations of Modigliani and Miller's (1958) model and rejected the optimal pricing parameters of debts. They stressed the same negotiating ability of individuals (who are resorting to Modigliani and Miller's arbitrages) with lenders as that available to the organization.

2.3.1.2 Pecking order theory

Pecking order theory was initially proposed by Donaldson (1961), who found that owner-managers prefer to finance investment using retained earnings instead of external funds, regardless of the size of the firm. Debt would be repaid if retained earnings exceeded investment needs. Alternatively, if external funds were required, external equity would be the last option chosen by the firms after the safest security and debt.

Myers (1977, 1984) then developed a hierarchical pecking order of preferred sources of firm's finance. Accordingly, retained earnings are used whenever possible. Debt financing will be used if there are insufficient retained earnings. Alternatively, equity will be used in exceptional circumstances since it involves relatively high constraints in the management of the business. The debt tax shields encourage the use of debt as opposed to equity financing (Krishnan and Moyer, 1996) as a tax shield may reduce the income tax payments.

The theory also affirms that following particular financing hierarchy will maximize the value of the firms (Myers, 1977, 1984; Myers and Majluf, 1984). The theory assumes there is no optimal debt-to-equity ratio. Firms will utilize all available internal funds before choosing an external finance, especially external equities, in order to avoid dilution of control of the firm (HenrikS.and Sandra S. 2004). However, in reality, some companies issue equity even when other sources are not fully exhausted (Baker and wurgler, 2002)

In terms of debt finance, banks were thought to be the most favorable external sources of finance. The main reason was because bank finance results in no loss of equity and little dilution of ownership control and, obviously, managers are concerned with independence (Read, 1998) and financial freedom (Bolton, 1971; Cressy, 1995). They do not want to lose control of their business and properties (Hamilton and Fox, 1998). This situation mostly happens in small firms as external equity is considered as being a relatively uncommon source of financing in small firms. The main reason is that few owners have the means to absolutely own their firms, and small firms are less likely to share markets; thus, debt financing is a requirement for most SMEs (Baker and Martine, 2011).

Another critical issue in this theory is that of how capital structure is affected by the relationship between the capabilities to generate internal funds (i.e. retained profits) and the viewpoint of getting new investment projects. According to the theory, only companies that are expecting to generate profitable growth options will need external financing if internally generated funds are not large enough. The aforementioned arguments confirmed the findings of Hutchinson (2003) who asserted that those with a lower level of earnings will make use of external funds. According to Hutchinson (2003), it is more likely that smaller firms will need to borrow than larger firms when faced with investment opportunities. Alternatively, Shyam-Sunder and Myers (1999) stated that the debt would only be issued when there was a shortage of internal funds. This is because, logically, if there is readily available internal financing, firms will prefer to settle up the debt instead of borrowing it. However, (Cornelli, Portes and shafir (1996) maintained that owners who are reluctant to consider external equity under any conditions will not move down the pecking order to that point.

The problem of ‘information asymmetry’ is quite inter-related with the hierarchical system of pecking order theory (Newman et al., 2011). In fact, Myers and Majluf (1984) had considered the issue of information asymmetry when developing the pecking order model. They assumed that asymmetric information problems drive the capital structure of firms. According to Myers and Majluf (1984), common stocks would be undervalued by the market since owner-managers possess more information about the firm than the investors. Leverage would increase concurrently with the level of information asymmetry when greater risk is attached to a firm. Moreover, according to Lopez-Gracia and Sanchez-Andujar (2007), businesses will start financing their project using the internal source of financing as there was no information cost. The second choice was debt or borrowing, and the final choice was external equity, which has the highest information costs.

2.3.1.3 Trade-off theory

In contrast to pecking order theory, where there is no target debt ratio, trade-off theory (Myers and Majluf, 1984), assumes the existence of optimal capital structure. According to Myers (1984), an optimal capital structure is determined by substituting equity for debt and vice versa until the value of the firm is maximized (e.g. trade-off the cost and benefits of debt). It means firms trade-off between the financial distress derived from debt (i.e. when firms are unable to meet the interest and principal payments) and tax savings (Seifert and Gonenc, 2008). Thus, most of the firms would use a fair deal of debt to take advantage of tax deductibles (Myers, 1984). However, the firms would not utilize debt excessively to avoid the problem of bankruptcy (Myers, 1984).

According to Myers (1984), firms set the target debt ratio and move towards achieving it. In contrast to pecking order theory, this theory suggests that more profitable firms have a higher target debt ratio. This is because higher profitability firms ensure lower probability of bankruptcy, higher tax savings from debt, and higher overinvestment. Scott (1976) stressed that a trade-off between bankruptcy cost and the tax advantage of borrowing determines the optimal debt ratio of a firm. However, this effect can be insignificant due to the existence of non-debt tax shields (DeAngelo and Masulis, 1980) and personal taxes (Miller, 1977). Further, Eriotis, Vasiliou, and Ventoura-Neokosmidi (2007) who examine the target debt ratio based on the one-year lag of the debt ratio, found a positive association between target debt ratio and leverage.

In addition, Fischer, Heinkel, and Zechner (1989) popularize a dynamic trade-off theory. This theory stresses the deviating debt ratio from the target, in a situation where the costs of adjusting the debt ratio are higher than the costs of maintaining sub-optimal capital structure. According to this theory, there is a negative association between profitability and leverage, since firms reflexively accumulate profits and losses and let the debt ratios deviate from the target. Similarly, according to Hovakimian, Opler, and Titman (2001), firms that were highly profitable in the past are likely to have low gearing. Although there are quite a number of studies (e.g. Bhaduri, 2002; Bancel and Mittoo, 2004; Gaud et al., 2005; Beattie, Goodarce, and Thomson, 2006) that verified that the firms manage leverage towards a target ratio, nevertheless, the evidence is indecisive.

2.3.1.4 Agency cost theory

Fama and Miller (1972) initiate the work by examining the possibility of different utility functions between managers and shareholders. Building on the work of Fama and Miller and expanding from Modigliani and Miller'stheory (1958), Jensen and Meckling (1976) developed an agency theory; agency theory concentrates on agency costs. Jensen and Meckling (1976) assert that agency costs rise due to a conflict of interest between shareholders or equity-holders and managers (i.e. agency cost of equity) and a conflict of interest between debt-holders and shareholders (i.e. agency costs of debt). The problem of agency cost of equity happens since managers are motivated to invest funds in a risky business for shareholders' interest (Harris and Raviv, 1991) as they are not the single beneficiary to receive any profits from the firm. Lenders are most likely to bear the cost in a situation of investment failure since members of limited liability entities have limited liability for the debts of the business. Debt can play an important role in monitoring or reducing the conflicts between shareholders and managers (Jensen, 1986). The free cash flow of the owner-managers may reduce due to issuing additional debt since the firm is now committed to servicing the debt rendered. Meanwhile, the problem of agency cost of debt happens when the funds obtained through debt could elicit equity-holders to invest sub-optimally. Leverage increases the incentive of equity-holders to shift wealth from bondholders to equity-holders (Fama and Miller, 1972; Jensen and Meckling, 1976). Equity-holders anticipate capturing gains from the high-returned investment while debt-holders only collect the fixed payment from the interest and principal. Having too much leverage financing may increase the likelihood of financial distress (Jensen and Meckling, 1976). The loss can be damaging if the debt-holders can correctly predict the equity-holders' intentions, as debt-holders prefer less risky projects, while equity-holders prefer the opposite.

2.3.2 Determinants of capital structure

Profitability

Profitability is one of the most tested company characteristics in empirical research regarding companies' choice of capital structure. The trade-off theory predicts that higher profitability is associated with increased debt levels and the reason for this is twofold. First, companies achieving high profitability have less risk of financial distress and bankruptcy, so the cost of debt is lower. Second, higher profitability means that companies can achieve higher utilization of the interest tax shield by increasing the amount leverage and hence the promised interest payments each period. Similarly, increased debt will serve as a disciplinary factor for managers when free cash flow likely increase with increased profitability. (Jensen, 1986) However, as dynamic trade-off theory predicts adjustment costs will prevent companies from adjusting the capital structure immediately and the unlikelihood of companies being at their refinancing points at the time of measurement causes the prediction of the found relationship between leverage and profitability to be negative due to the static nature of the determinant analysis.

Retained earnings are the favored financing according to the pecking order theory which contradicts the predictions made by trade-off theory. Higher profitability should enable the company to retain more earnings which is the preferable source of funding, and as such, the amount of leverage needed by the company should decrease. (Myers, 1984)

Empirically, profitability is consistently found to be negatively related to leverage, as predicted by both theories. Therefore the following hypothesis is made:

H1: Profitability is expected negative effect on capital structure in Ethiopia insurance companies.

Measures of profitability used in earlier empirical research differ slightly as some use EBIT to total assets (Fama& French, 2002; Flannery &Rangan, 2006) or EBITDA to total assets (Rajan&Zingales, 1995; Alves & Ferreira, 2011) while others use operating income to total assets (Titman &Wessels, 1988; Frank &Goyal, 2003). This paper tests initially for both proxies for profitability, but as there is differences in the legal treatment of depreciation and amortization across countries, EBITDA is believed to be a better measure than EBIT.

Tangibility

The thought behind asset tangibility as a determinant is that tangible assets provide more security for potential investors as assets can serve as collateral. This will reduce the risk for debt holders and ultimately reduce the cost of debt for the companies and they will be able to operate with higher leverage ratios without incurring higher financial distress costs. (Titman &Wessels, 1988) Accordingly, the trade-off theory predicts that companies in which tangible assets accounts for a large part of the asset structure should include larger debt levels than companies with a relatively larger amount of intangible assets. Furthermore, collateralized debt makes it difficult for investors to conduct asset substitution as the debt holders have collateral in specific assets. Therefore agency costs should be lower between shareholders and debt holders, and companies should use more debt relative to the amount of tangible assets they own. The pecking order theory makes the opposite prediction as it suggest that tangibility will generate less information asymmetries between potential investors and shareholders, and hence the cost of issuing equity will fall, resulting in lower levels of debt. (Frank &Goyal, 2009) Arguably, the argumentation used to predict this relationship could also be used to predict that the cost of debt will fall as they will now be able to have collateralized debt. So unless the cost of equity falls below the cost of debt, the pecking order theory implies that companies will use the cheapest sources of funding, debt would still be the preferred funding to equity, at least for moderate amounts of debt. Therefore the prediction of the pecking order theory might not be as unambiguous as some researchers argue Based on predictions of these theories and the consistent findings in previous empirical research the following relationship between asset tangibility and leverage is expected:
H2: Insurance Companies with more tangible assets have higher leverage ratios.

Measures of asset tangibility differ between the empirical papers. The measure used should be compared to the measure used for leverage. If the leverage measure used is total liabilities to total assets, as Welch (2011) suggest, a broad measure of tangibility is likely needed in order to capture all factors that could serve as collateral e.g. inventory, accounts receivables etc. In studies using total debt to total assets as a proxy for leverage, fixed assets to total assets will be a suitable measure of asset tangibility. The latter is used as a measure in this paper, measured as property, plant and equipment.

Size

Company size is also a common company characteristic used in empirical research and a determinant which also provides consistent results in its relationship to leverage. The interpretation of size in a trade-off perspective is frequently that of larger companies being more diversified and therefore subject to lower default risk and less volatility in cash flows (Frank &Goyal, 2009). Similarly, direct bankruptcy costs, are relatively fixed and therefore as a proportion of company value they decrease with company size. The trade-off theory thus predicts that company size is positively related to leverage. Larger companies are likely to be better known and will therefore be subject to less asymmetric information and the related costs. Accordingly, larger companies will be able to issue equity at lower costs which will mean a lower leverage ratio and furthermore larger companies are assumed to have had an opportunity to retain earnings (Frank &Goyal, 2009). So according to the pecking order theory larger

Companies will make less use of debt. The empirical results of the relationship between size and leverage are consistently

Positive, although Rajan and Zingales (1995) find that it is the opposite in Germany.

H3: Larger Insurance companies have higher leverage ratios.

Size is usually peroxide by the logarithm to either sales or total assets. The logarithm to sales is used.

Growth

Growth opportunities calls for a similar reasoning as previously used to explain the predictions of asset tangibility’s effect on leverage, although with opposing conclusions. The first notion of the relationship between growth opportunities and leverage is made by Myers (1977) who states that the problem of shareholders making suboptimal investment decisions is more severe when a company has more growth opportunities as potential investors cannot value or decide which growth opportunities the company should follow.

The value of a company's growth opportunities are most likely only valuable to the individual company, or at least less valuable to other companies, in which case the costs of financial distress and bankruptcy will be higher for companies with many growth opportunities. With this consideration the trade-off theory suggests a negative relationship between growth opportunities and leverage (Titman &Wessels, 1988). Similarly, with many investment opportunities the earnings before taxes is assumed to be lower in which case companies will not be able to fully utilize the interest tax shields associated with high amounts of leverage. Furthermore, companies having more Growth opportunities calls for a similar reasoning as previously used to explain the predictions of asset tangibility's effect on leverage, although with opposing conclusions. The first notion of the relationship between growth opportunities and leverage is made by Myers (1977) who states that the problem of shareholders making suboptimal investment decisions is more severe when a company has more growth opportunities as potential investors cannot value or decide which growth opportunities the company should follow.

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Contrasting this prediction is once again the pecking order theory, as it predicts a positive relationship between debt and growth opportunities. The argumentation behind is that growth opportunities involves higher information asymmetries as shareholder are not willing to reveal much information about their investment opportunities, and given that investment opportunities requires investment outlays and thus increasing a company's financing deficit, companies will issue debt financing and preferable short-term financing when they experience finance deficits (Gaud, et al., 2005) .The empirical results show consistent behavior of the relationship between leverage and growth opportunities and it is expected that this behavior is also present for Danish companies.

H4: Insurance Companies with more growth opportunities will have lower leverage ratios.

The most common proxy for growth opportunities is a company's market-to-book ratio, as it reflects investors' expectations of future earnings.

Risk

Risk relates to the volatility in earnings and according to the trade-off theory companies with high risk are likely to face higher costs of financial distress and will therefore use less debt. Similarly, volatility in earnings may limit the probability of fully utilizing the benefits from tax shields, again leading to lower debt levels (Frank &Goyal, 2009). Conversely, the pecking order theory posits that higher volatility in earnings will lead investors to require a higher rate of return, making it more expensive to issue equity. Therefore the prediction of the pecking order theory is that higher risk leads to higher leverage (Rajan&Zingales, 1995).

The empirical results from the previous chapters offer mixed findings in regards to the relationship between leverage and risk. However, the following hypothesis are suggested for the relationship between risk and leverage for Danish companies:

H5: Insurance Companies with higher risk have lower leverage ratios.

The measures of risk vary in the papers examined, but most common is a standard deviation measure of earnings. In this paper the standard deviation of EBIT will be used.

Tax rate

Tax rate are compulsory contribution levied by the local government are applied to all of the firms and also play an important role in capital structure decision. Firms with high degree of leverage can get much benefit from tax shield, because interest on debt is a tax-deductible expense. Trade-off theory explains that in case of higher tax rate, firms will issue more debt to obtain a tax shield gain (Modigliani & Miller, 1963); and the study of Mansur (2013) provided evidence that the marginal tax rate affect financing decision.

H6: tax rates are positively related with leverage, because of the influence of tax shields.

Correspond to the percentage of tax payment over EBIT Tax Paid / EBIT

Liquidity

There are two different opinions on the association between liquidity and capital structure: First view implies a positive significant relation that is consistent with tradeoff theory. Companies with more liquidity (more current assets) tend to use more external borrowing, because of their ability in paying off their liabilities. Second viewpoints to a negative significant relation that is consistent with the pecking order theory, arguing that companies with more liquidity will decrease external financing, relying on their internal funds. Thus, liquidity ratios may have a mixed effect on the capital structure decisions. Most of the previous studies, confirm the negative relation,(Ahmed et al., 2010, and Najjar and Petrov 2011). Hence, liquidity is expected to have negative impact on leverage ratio

H7: Liquidity have negative effect of capital structure.

Liquidity is the Ratio of Liquid Assets /Total Asset

GDP

Gross Domestic Product (GDP) was one of the macroeconomic variables tested by Very few studies (Booth et al., 2001 and Muhammad, 1999). Balla and Mateus (2004) Undertook a research on capital structure in Hungary and Portugal. The financial statements were collected for the listed corporations in Hungary and Portugal between 1995 and 1999 and leverage was defined from the data collected. GDP was examined to see the effect on leverage. The results indicated that GDP or gross domestic product was a significant effect on corporate leverage of both firms.

H8*:* GDP have a positive effect on capital structure.

Inflation Rate

Gulati (1997) developed a general case model to identify the effect of inflation on capital structure. In his study, the inflation was represented by the percentage increase in product prices and production costs and was "adjusted" accordingly to get the effect of inflation. The result indicated that inflation is significantly affecting leverage. In another study, Mutenheri and Green (2002) measured inflation as the percentage change in consumer price index. The study was conducted on 52 listed companies in Zimbabwe for period 1990 till 1999. The result indicated that inflation has no significant effect on the capital structure choice of firms in Zimbabwe. Sener (1989) conducted empirical findings on the effect of inflation on debt ratio. The time period chosen for the study is from 1970 till 1986 period, which is divided into three periods ; 1970 to 1975 (with average of inflation of 6.7%); 1976 to 1981 (inflation of 9.2%) and 1982 till 1986 (inflation of 3.8%). Interesting results were noted here. The debt ratio increases to some extent as inflation rates rises. At low and moderate inflation rate, there was a direct relationship between inflation and leverage. However, as the inflation rises at very high level, then the debt ratio reduces due to the leverage related costs or demand side effect. Hatzinikolaou et al. (2002) undertook a study to examine the effect of inflation uncertainty on capital structure decision of US corporations. A 20 years (1978-1997) data from 30 Dow Jones corporations were examined and three independent variables namely inflation uncertainty, expected real interest rate and asset tangibility were tested to see its influence on the debt-to-equity ratio using cross-section all heteroskedastic and time-wise autoregressive model. The results indicated that inflation uncertainty and expected real interest rate were negatively related to debt-equity ratio. According to the authors, the negative effect of inflation uncertainty could be due to the fact that companies reduce their investment and capital investment that were financed by debt in the case of higher inflation or uncertainty in inflation.

H9***:*** Inflation have a positive effect on capital structure

2.4. Empirical Evidences of Determinants of Capital Structure

After knowing theories of capital structure we need so see how much research work has been done on capital structure with regard to justify the predictions of these theories by collecting empirical evidence from all around the world. Is there any difference between developed and developing world with regard to source of finance? As mentioned below all the empirical evidence in the literature of capital structure subject to specific condition in which prediction of some theories work while hypothesis of other theories do not. Likewise the behavior of firms to adjust the capital structure is changing when they are confronted certain internal (company specific) and external (outside of the firm) situation. Myers (2001) states all three theories of capital structure are conditional because they work under their own set of assumption. It means none of three theories can give vivid picture in practicing the capital structure. Titmanand Wessels (1988) argue that in practice, business conditions are dynamic that cause firms changing their capital structure thus moving from one theory to another, for example, when the tax rate increases firms issuing debt for taking advantage of tax shield (TOT). When debt becomes less attractive to issue then firms may seek financing from retained earnings (POT). Likewise if market offers some opportunities of low equity risk premium firms may finance their project with equity (Market timing).

There can be many economic (country specific) factors such as GDP growth, interest rate, inflation, capital market development and situational factors which directly or indirectly affect the capital structure of the firm. Graham and Harvey (2011) depict that firms consider the price appreciation of share before issuing it, and debt rating and financial flexibility before issuing debt. Gupta (1969) claims to introduce competitive equilibrium model of capital structure and industry dynamics, and says firms make capital structure decision on the basis of peculiar technology shocks.

Cook and Tang (2010) posit well macroeconomic conditions help firm to adjust capital structure toward target quicker than that in bad macroeconomic conditions, Korajczyk and Levy (2003) argue that ―our results support the hypothesis that unconstrained firms time their issue choice to coincide with periods of favorable macroeconomic conditions, while constrained firms do not.‖ Hennessy and Whited (2005) argue more liquid firms hold lower level of leverage. They say debt issue is more attractive when it is used to purchase back equity than when borrowed amount is distributed in shareholders. Barry et al (2008) argue that interest rate affects the leverage; firms issue more debt when interest rate is low as compare to its historical level.

2.4.1. In Developed countries

It has been unanimously observed that most of the empirical research on corporate capital structure is conducted in developed world (Mazur, 2007). Margaritis&Psillaki (2007) investigate capital structure of 12,240 firms in New Zealand and find evidence consistent with agency cost model. Frank & Goyal (2009) examine capital structure of publically traded American companies from 1950 to 2003 and find the evidence supporting some versions of trade-off model. Beattie et al (2006) conducted survey research in which they examine the capital structure of listed UK firms and evidence support the predictions of TOT as well as pecking order theories. Huang & Ritter (2009) argue that US firms finance their operations more with external equality than debt if cost of equity capital is low. Lipson & Mortal (2009) investigate the relationship between liquidity and capital structure of US firms and find negative relationship between liquidity and debt. Cook & Tang (2010) investigate the financing behavior of US firms in good and bad economic condition and find that US firm adjust their capital structure more quickly in good economic condition than bad. Antoniou et al (2008) investigate capital structure of firm and find the evidences supporting POT and TOT of capital structure. Bancel & Mittoo (2004) conduct survey in 16 European countries and find the evidences consistent with TOT of capital structure. Barry et al (2008) analyze capital structure of more than 14000 nonfinancial US firms and find evidences supporting MTT. Rajan & Zingales (1995) investigate the capital structure of firms in G7 countries and find the similar treatment of variables of capital structure in all seven industrialized countries. Brounen et al (2006) conducted survey to investigate the capital structure of firms in Europe and find the evidences consistent with POT. Allen & Mizuno (1989) examine the financing decision of the Japanese firms and find evidences consistent with POT. Pushner (1995) analyses the capital structure of Japanese firms and finds evidence consistent with agency cost theory. Polish firms' financing choice is determined by POT (Mazur, 2007). Evidence suggests that financial choice of Spanish firms is determined by trade-off, pecking order and free cash flow theories (Miguel & Pindado, 2001). The evidence from Switzerland also supports pecking order and trade-off (Drobetz & Fix, 2005).

2.4.2. In Developing countries

Relatively little research work on firms' financing decision has been done in developing countries (Shah & Khan, 2007). The main difference between developing and developed world is that in developed world firms finance their leverage with long-term debt and short term debt is mainly contributing in leverage of firms in developing world (Booth et al. 2001). Tong and Green (2005) inspect capital structure of listed Chinese companies and find evidence in the support of POT (Cobham & Subramaniam, 1998). Huang and Song (2006) examine capital structure of 1200Chinese firms and find the results consistent with TOT and POT of capital structure. Eldomiaty and Ismail (2009) examine the capital structure of Egyptian firms and find the evidence supporting TOT. 60% evidence of capital structure of Iranian firms support POT and rest 40% evidence support TOT of capital structure (Shahjahanpour et al. 2010). Teker et al. (2009) investigates capital structure of Turkish firm and find evidence supporting POT and TOT of capital structure. Qureshi (2009) investigates the capital structure of Pakistani firms and find the results consistent with POT. Gurcharan (2010) examines the capital structure firms in selected four developing ASEAN countries and finds significant negative relationship between profitability and growth in all four counties but other determinants of capital structure are treating differently in each country. Booth et al .(2001) investigate capital structure of 10 developing countries and argue that there is negative relationship between tangibility and leverage in Pakistan, Brazil, India and Turkey unlike the corresponding results in G7 by Rajan & Zingales (1995). While investigating capital structure of Pakistani companies (Shah and Hijazi 2004) also do not find significant relationship between tangibility and leverage. Chakraborty (2010) argue the positive relationship between tangibility and leverage of Indian firms. Booth et al. (2001) and (Shah and Hijazi (2004) find evidence supporting POT. As mention above, evidences in developing world indicate the dominancy of pecking order theory as compared to trade-off theory. Evidence in favor of market timing theory in developing world could not go through my literature review.

2.4.3. In Ethiopia

The determinants of capital structure of Ethiopian firms are still under-explored area in the literature of financing decision. As per the researcher access and knowledge, the researches on determinants of capital structure so far done in Ethiopian case are by Ashenafi (2005) and Mintesinot (2010). Ashenafi (2005) approached the question of capital structure using data from medium firms in Ethiopia. He take a sample of 50 medium enterprises and made multivariate regression analysis based on financial data of Ethiopian medium enterprises over the period 1991 to 1996 E.C. Variables like non-debt tax shield, economic risk, age of firms, size of firms, tangibility, profitability and growth were regressed against leverage. The outcome of the multivariate regression analysis was consistent with earlier studies for variables like no debt tax shield, economic risk, size of firms and profitability. Mintesinot (2010) has undertaken an attention-grabbing study entitled, "The Determinants of Capital Structure: Evidence from Selected Manufacturing Private Limited Companies of Tigray Region, Ethiopia''. Mintesinot have used eight explanatory variables: Tangibility, Profitability, Growth, Age, Uniqueness, Size, Earnings Volatility, and Non-Debt Tax Shields, and were regressed against dependent variables: Total Debt Ratio, Long-Term Debt Ratio and Short-Term Debt Ratio. He also used secondary data collected from audited financial statements of selected 14 companies for the period of five years (2004-2008). After analyzing the data he came up with this result: Tangibility, Firm Growth, Age of the Firm, Firm Size, Earnings Volatility and Non Debt Tax Shields variables are the significant determinants of capital structure in at least one out of the three models for capital structure employed in the study. Kibrom (2010) studied the determinant of capital structure of commercial banks in Ethiopia by analyzing the dependent variable leverage with the independent variables Profitability, Tangibility, Size, Growth, Age and Tax-Shield by taking the financial statements of seven (7) commercial Banks from the year 2000-2009 and Weldekidan (2012) studies the determinant of capital structure of commercial bank in Ethiopia by taking leverage (Total debt/Total Equity) as dependent variable and Profitability Tangibility Growth Risk Size and Liquidity as independent variables by taking the financial statement of eight (8) commercial banks from the year 2000-2011.

2.5. Overview of Insurance Companies in Ethiopia

Financial institutions are the most important engines of economic growth for any economy in the world. In Ethiopia the major financial institutions operating are banks, insurance companies and micro-finance institutions. For the last decade, the Ethiopian financial institutions in general and insurance companies in particular have shown the impressive progress in terms of number and service which not only creates the employment opportunities but also enhances the business activities in the Ethiopian economy. (NBE report 2nd quarter 2015/2016)

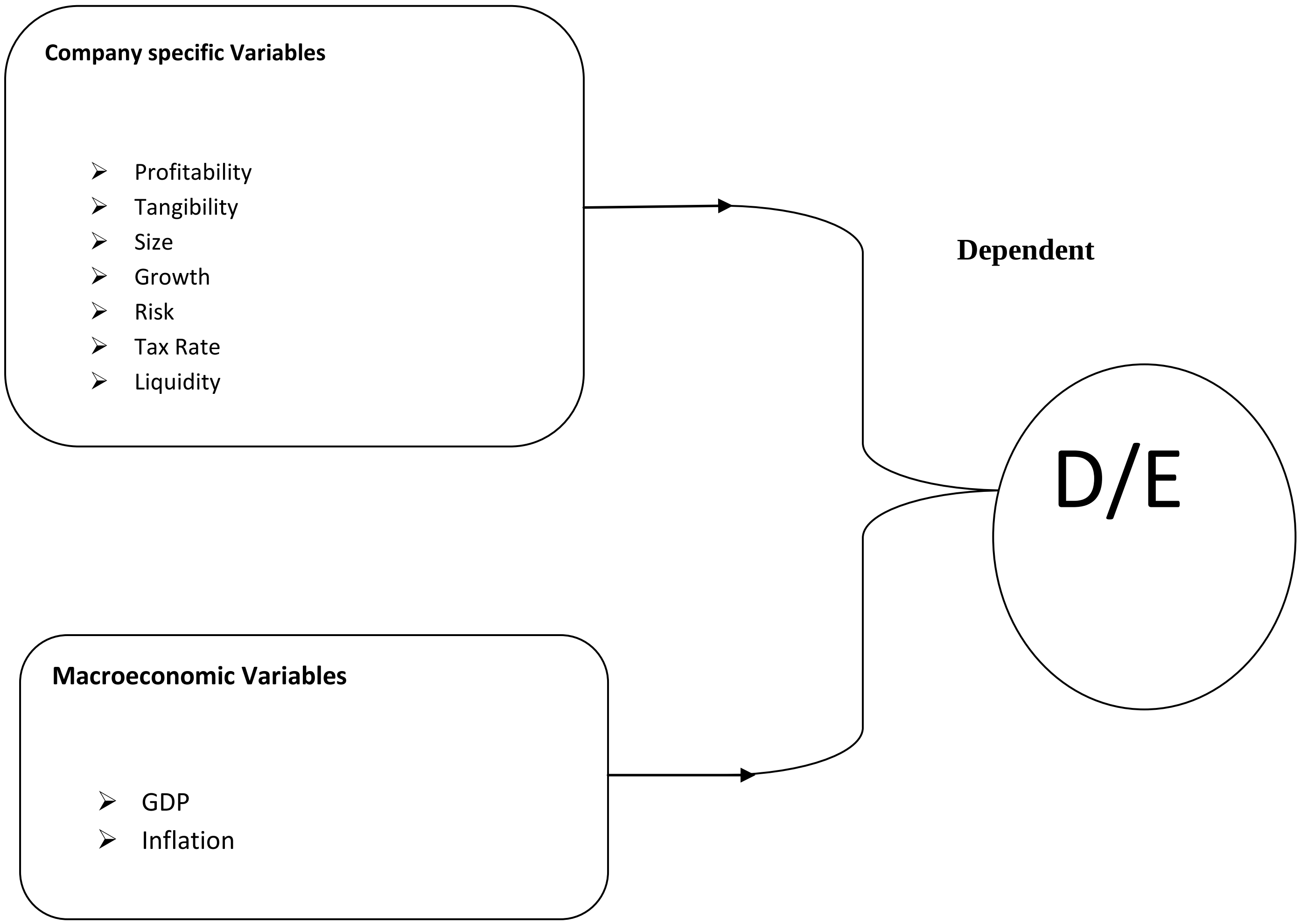
The history of insurance service is as far back as modern form of banking service in Ethiopia which was introduced in 1905. At the time, an agreement was reached between Emperor Menelik II and a representative of the British owned National Bank of Egypt to open a new bank in Ethiopia. Similarly, modern insurance service, which were introduced in Ethiopia by foreigners, mark out their origin as far back as 1905 when the bank of Abyssinia began to transact fire and marine insurance as an agent of a foreign insurance company. According to a survey made in 1954, there were nine insurance companies that were providing insurance service in the country. With the exception of Imperial Insurance Company that was established in 1951, all the remaining of the insurance companies were either branches or agents of foreign companies. In 1960, the number of insurance companies increased considerably and reached 33. At that time insurance business like any business undertaking was classified as trade and was administered by the provisions of the commercial code (HailuZeleke, 2007)

2.6 Conceptual Framework

General insurers' capital structure is influenced by both internal and external factors. Whereas internal factors focus on insurers specific characteristics, the external factors concern both industry features and macroeconomic variables. This study used both internal and external determinants of insurance's profitability by including company profitability, tangibility, size, growth, risk, tax rate, liquidity, GDP and inflation. The study identified how these variables determine the capital structure of insurance company in Ethiopia.

Figure 2.1 Conceptual frame work

Independent Variables



Source: - Developed by the researcher

Chapter Three

Research Design and Methodology

3.1. Study Design

This research presented an empirical analysis of determinants of capital structure of insurance sector in Ethiopia with most recent available data. It was an explanatory research and employed a quantitative method. A multiple regression model was used to analyze the data collect from the financial statements of some insurance companies in Ethiopia which have an age 10 years and above. Based on the regression outputs, test of the data will use and hypotheses; and analysis of the result will be make. The analyses will present by using descriptive approach.

3.2. Sample Design

Sample of nine insurance companies were selected from the population of 17 insurance companies. It represents 53 percent of the existing Insurance companies. In other words, the entire population of insurance companies that exists, at least, for the last thirteen years (2005-2017) would selected and secondary data were collected from their 13years' financial statements. Therefore, pooling the cross sectional data of 13years for 9 insurance companies, there were a total of 117 (one hundred seventeen) observations in the regression analysis. For this reason, using purposive sampling, the selected insurance companies which are above 13 years in insurance industries of Ethiopia, Ethiopian Insurance companies, Awash Insurance, Global insurance , Nile insurance, Nice insurance, Africa insurance, NIB Insurance, Nyala Insurance and United insurance.

3.3. Data source and Collection

The researcher were used secondary sources of data, audited financial statements (Balance sheets and income statements), of 9 insurance companies aged 13 years and above and are operating in the Ethiopian economy for the specified time period. Though some of the sample insurance companies have an experience of greater than ten years, the researcher has taken secondary data from their financial statements that belong or correspond to only the past ten consecutive years.

The data were reliable because it was collected from insurance companies, from MOF and central statistics. Furthermore, selected explanatory attributes and used regression model had taken from most prominent and recent research studies in the area of capital structure.

Table 2: List of sample Insurance Companies used in this research

NO.	NAME OF INSURANCE	ESTABLISHED DATE	OWENERSHIP
1	Ethiopian Insurance com.	1/14/1976	Gov't
2	Awash Insurance com.	1/10/1994	Private
3	Africa Insurance com.	1/12/1994	Private
4	Nyala Insurance com.	6/1/1995	Private
5	Nile Insurance com.	11/4/1995	Private
6	NICE	23/9/1994	Private
7	United Insurance com.	1/4/1997	Private
8	Global Insurance com.	11/1/1997	Private
9	Nib Insurance com.	1/5/2002	Private

Source: Developed by the researcher.

3.4. Method of Data Analysis

To measure the importance of the determinants, different variables have been used and tested with an ordinary least square (OLS). This method examines if there is a possible relation between the independent variables and the dependent variables, which is in this research leverage. An advantage of the regression analysis for this kind of study is that it helps to measure how big the influence is of the independent variables on the dependent variable (Alisson, 1998). This can be observed from the result of the regression analysis, where can be investigated what the significance is of the variables. The coefficient explains the relation between the independent and dependent variable. From the significance level it can be concluded if the result for a variable is generalizable. The results of the regression models are used to investigate which variables are important in determining leverage. From this conclusions can be drawn concerning which factors are the most important for insurance companies in Ethiopia in determining the capital structure.

Data were regressed using EVIWE 8 application software and the resulted (or obtained) regression outputs are analyzed. On top of this, MS Excel was also used to compute and feed convenient data into the EVIWE 8 employed

3.5. Model Specifications

Most of the existing empirical studies on capital structure use linear regression techniques with proxies for the determinant factors used to explain the variation in leverage ratios across firms.

It is also necessary to determine whether the fixed effect or random effect approach is appropriate. A common practice to make the choice between both approaches by running a Hausman test. To conduct a Hausman test the number of cross section should be greater than the number of coefficients to be estimated. But, in this study the number of cross sections are smaller than the numbers of coefficients so it is not possible to conduct a Hausman test.

The following multiple ordinary least square (OLS) regression model is specified and used to test the relationship between the financial leverage (Debt/Equity) and its determinate factors in the selected insurance companies.

Table 3

General Form of the Equation is:

LEVERAGE **=** Function of **(**Profitability, Tangibility, Size, Growth, Liquidity, Tax Rate, Risk, Inflation and GDP)

Therefore the Specified Model is:

Leverage = β0 + β1(Prof) + β2(Tang) + β3(Size) + β4(Grow) + β5(Age) + β6(TR) +β7(Risk)+ β8(INF)+ β9(GDP)+ε

DER = β0 + β1

Where:

STANDARD COEFFICIENTS AND ERROR TERM

β0 = Coefficient of Intercept (Constant)
β4 = Coefficient of Growth

β1 = Coefficient of Profitability
β5 = Coefficient of Liquidity

β2 = Coefficient of Tangibility

β3 = Coefficient of Firm Size
ε = the Error Term**) +N) SZ) +**

β6= Coefficient of Tax Rate**===4(GR) + β5AG) + β6TXS) + ε**

β7= Coefficient of Risk

β8= Coefficient of Inflation

β9= Coefficient of GDP

Dependent Variable

DER:-denotes leverage as a measure of Debt to Equity ratio and is computed as total Liabilities divided by total Stockholders’ Equity

Independent Variable

PR: denotes profitability which is measured by using the ratio of operating income over total assets,

TN: denotes tangibility of assets which is measured by the ratio of fixed assets to total assets,

SZ: denotes size which is measured by the natural logarithm of total assets,

GR: denotes Growth which is measured by the percentage change of total assets,

LIQ: denoted by the ratio of Liquid assets over Total Asset

TR: denoted by the ratio of Tax paid over earning before tax and interest.

RISK: denoted by the standard deviation of EBIT.

INF: denoted by percentage increase of price and cost.

GDP: Denoted by annual percentage change of Gross Domestic product.

3.6 Diagnostic Analysis

As mentioned in Chris. B (2008), there are basic assumptions required to show that the estimation technique, OLS had a number of desirable properties, and also so that hypothesis tests regarding the coefficient estimates could validly be conducted. If these Classical Linear Regression Model (CLRM) assumptions hold, then the estimators determined by OLS will have a number of desirable properties, and are known as Best Linear Unbiased Estimators. Therefore, for the purpose of this study, diagnostic tests are performed to ensure whether the assumptions of the CLRM are blue or not in the model. Consequently, the basic CLRM assumptions test in this study are errors have zero mean, homoscedasticity, autocorrelation, multicollinearity and normality. According to Chris. B (2008) when the assumptions are satisfied, it means that all the information available from the patterns was used. But, if there is assumption violation of that data usually means that there is a pattern of data that have not included in the model, and could actually find a model that fits the data better.

3.6.1. The errors have zero mean (E (ut) = 0)

According to Chris (2008), if a constant term is included in the regression equation, this assumption will never be violated. Thus, since the regression model used in this study included a constant term, this assumption will not violate.

3.6.2. Multicolinearity

According to Chris.B (2008), Multicolinearity will occur when some or all of the independent variables are highly correlated with one another. If the multicolinearity occurs, the regression model is unable to tell which independent variables are influencing the dependent variable. The consequences of Multicolinearity are OLS estimators still Best, Linear and Unbiased, large variances and covariance of OLS estimators, wider confidence interval, and insignificant ratio. In this case, this study chooses to use high pair-wise correlation coefficients method because it can see the correlation of independent variables between each other one by one.

There were different arguments towards the multicollinearity problem (Gujarati D. N. (2004) stated that multicollinearity problems exist when the correlation coefficient among variables greater than 0.80. (Hair JF, 2006) also argued that correlation coefficient below 0.9 may not cause serious multicollinearity problem. In contrary to this (Kennedy, 2008) argued that as any correlation coefficient above 0.7 could cause a serious multicollinearity problem leading to inefficient estimation and less reliable results.

3.6.3. Autocorrelation

According to Chris.B (2008), when the error term for any observation is related to the error term of other observation, it indicate that autocorrelation problem exist in this model. In the case of autocorrelation problem, the estimated parameters can still remain unbiased and consistent, but it is inefficient. The result of T-test, F-test or the confidence interval will become invalid due to the variances of estimators tend to be underestimated or overestimated. Due to the invalid hypothesis testing, it may lead to misleading results on the significance of parameters in the model. Durban-Watson Test will be used to detect Autocorrelation problem.

H0: There is no autocorrelation problem in the model.

H1: There is autocorrelation problem in the model.

Decision Rule**:** Reject H0 if DW-value of the regression is less than dl and greater than 4-dl. But do not reject H0 if DW value is between du and 4-du.

3.6.4. Heteroscedasticity

According to Chris.B (2008), Heteroscedasticity means that error terms do not have a constant variance. If heteroscedasticity occur, the estimators of the ordinary least square method are inefficient and hypothesis testing is no longer reliable or valid as it will under estimate the variances and standard errors. There are several tests to detect the Heteroscedasticity problem, which are Park Test, Glesjer Test, Breusch-Pagan-Goldfrey Test, White's Test and Autoregressive Conditional Heteroscedasticity (ARCH) test. In this case, this study chooses to use White test to detect Heteroscedasticity.

H0: There is No Heteroscedasticity problem in the model.

H1: There is Heteroscedasticity problem in the model.

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

3.6.5. Normality

Normality tests are used to determine if a data set is well-modeled by a normal distribution. With the normality assumption, ordinary least square estimation can be easily derived and would be much more valid and straight forward. This study will use Jarque-Bera Test (JB test) to find out whether the error term is normally distributed or not.

H0: Error term is normally distributed

H1: Error term is not normally distributed

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

Chapter Four

Data Analysis and Interpretation

This chapter deals with the analysis and interpretation of the results of the study. The data were analyzed by using E-views 8 software. The descriptive statistics and the correlation analysis were discussed. Followed by the diagnostic test, which is necessary to fulfill the assumption of the classical linear regression model. Then, econometric analysis and discussion of the main finding of the study were presented. Finally, the results of the regression analysis were discussed by supporting empirical evidence.

4.1 Descriptive Statistics

Table 4.2 demonstrates the summary of descriptive statistics for the variable values used in the sample. The summary of descriptive statistics includes the mean, standard deviation, minimum and maximum of one dependent variable (DER) and nine explanatory variables (PR, TN, SZ, GR, LIQ,TR,RISK,INF & GDP) from year 2005 – 2017. The data contain sample of nine insurance companies in Ethiopia for the past thirteen years (2005 – 2017).

Table 4.1

	D_E	GRO	LIQ	RISK	SIZE	TAN	TR	PRO	GDP	INF
Mean	3.563915	0.217785	0.106572	19.44005	0.708009	0.897676	16.31824	0.092020	0.106692	0.152692
Median	3.145292	0.192066	0.105823	19.61706	0.701477	0.860947	16.71907	0.079546	0.109000	0.105000
Maximum	5.123214	0.525503	0.129990	20.17798	0.768307	1.155066	17.54714	0.148475	0.126000	0.364000
Minimum	1.945219	0.000000	0.086478	18.27544	0.608985	0.784643	12.02541	0.051850	0.081000	0.028000
Std. Dev.	1.052329	0.151979	0.011719	0.684782	0.042908	0.111704	1.408039	0.030510	0.010418	0.101635
Skewness	0.048809	0.497921	0.265906	-0.327652	-0.591670	1.270079	-2.033555	0.672644	-0.644857	0.993729
Kurtosis	1.541390	2.421403	2.967769	1.547769	3.028245	3.361582	6.913663	2.283008	3.953972	2.729935
Jarque-Bera	10.41823	6.466563	1.383833	12.37468	6.830325	32.09281	155.3084	11.32891	12.54546	19.61177
Probability	0.005467	0.039428	0.500616	0.002055	0.032871	0.000000	0.000000	0.003467	0.001887	0.000055
Sum	416.9781	25.48084	12.46891	2274.486	82.83699	105.0281	1909.235	10.76638	12.48300	17.86500
Sum Sq. Dev.	128.4579	2.679325	0.015931	54.39552	0.213565	1.447416	229.9787	0.107977	0.012589	1.198249
Observations	117	117	117	117	117	117	117	117	117	117

Source: ***Researcher's own computation based on the financial statements***

The descriptive statistics summarized in Table 4.1 are a collection of measurements of two things: *location* and *variability*. Location tells one the central value of the variables (the mean is the most common measure of this). Variability refers to the spread of the data from the center value (i.e. variance, standard deviation).The *mean* is the sum of the observations divided by the total number of observations. The*med an*is the middle value of the total observation. The *standard deviation* is the squared root of the variance and indicates how close the data is to the mean. The *variance* measures the dispersion of the data from the mean. It is the simple mean of the squared distance from the mean. *Count* (N in the table) refers to the number of observations per variable. *Range* is also another measure of dispersion. It is the difference between the largest and smallest values, max minus min. *Min* is the lowest value in the variable. *Max* is the largest value in the variable.

Taking a look at table 4.1 the researcher has discussed the following issues:

Debt-Equity The average (mean) debt to equity ratio (DER) of Ethiopian insurance companies is found to be 3.56 and this indicates insurance companies are financed (leveraged) with debt at approximately four times greater than equity option. That is the insurance financing decision is inclining to debt financing than to the equity financing. Even the standard deviation show that the insurances have, in the past ten years, focused more on debt financing than on equity financing.

Growth The banks' total assets have an average growth rate of 21.76 percent for the thirteen years of study period. The asset growth ranges approximately from 0 percent (minimum growth rate) to 53 percent (maximum growth rate) which in turn strengthen the acceptance of value of variance of the variable.

Liquidity measures the ability of insurance companies to fund increases in assets and meet obligations as they come due, without incurring unacceptable losses (CR) is measured by dividing current asset to current liability. As clearly shown in the above table CR resulted a maximum of 20.18 and minimum of 18.28. The average value of the liquidity measured by current ratio for insurance companies under the study were 106.5% that was far below the NBE requirement of 150% which showed the sector was operating at a low current ratio position during the study period. The mean value of the companies CR is 1.065 this implies on average the companies have br. 1.065 current assets to pay every 1 br. Current liability and standard deviation is 0.011. This asset huge gap comes from their operational success and history of their existence.

Risk-Concerning, the firms risk which was presented by the standard deviation of operating income (volatility of earning). The mean of this variable was 0.66 percent and the median was 0.49 percent with a standard deviation of 0.65. Firms vary in adopting risk; for the study sample, risk was ranged between 0.000 to 3.3 percent.

Size-The mean of the firms' size which was represented by the natural logarithm of total assets was 21.79 and median was 21.68 with a standard deviation of 1.36. Natural logarithms of total assets for the sample were ranged from 18.78 to 25.46

Tangibility-The mean of asset composition is found to be 0.89 percent indicating that the Insurance companies fixed assets represent only 0.89 percent of the total assets. Due to the nature of the business insurance have high current assets, which is equal to approximately 98.4 percent. Tangibility of the insurance companies operating in Ethiopia, as measures by the ratio of fixed assets to total assets, ranges from 0.78 percent to 0.15 percent.

Tax Rate -denoted by the ratio of Tax paid over earning before tax and interest. The average annual tax rate of the insurance companies is 1.32% and their maximum tax rate is 17.55% and the minimum tax rate is 12.03 %.

-**Profitability** The average annual profitability of the insurance under investigation is found to be 9percent. Since profitability was measured by the ratio of operating income to total assets, the maximum attained average profitability rate is 14 percent whereas the lowest recorded average profitability rate is 5 percent and the dispersion other values of profitability rate is 0.03 percent which indicates the individual insurances have constant profitability rate every year.

GDP- Regarding to major macroeconomic factor GDP, the mean value of real GDP growth rate was 10.7% indicating the average real growth rate of the country’s economy over the past 13 years. The maximum growth of the economy was recorded in the year 2005 which is about 13% and the minimum was in the year 2005 which is -8%. The country has been recording double digit growth rate with little dispersion towards the average over the period under study except the year 2005 and 2008 with the standard deviation of 3.3%. This indicates that economic growth in

Ethiopia during the period of 2005 to 2017 remains stable except the year 2005 was recorded negative economic growth.

Inflation- inflation rate of the country on average over the past thirteen years was 15.2%.The maximum inflation was recorded in the year 2008 which is 36.4% and the minimum was in the year 2009 it was about 0.3%. The rate of inflation was highly dispersed over the periods under study towards its mean with standard deviation of 9.9 %. This implies that inflation rate in Ethiopia during the study period was somehow unstable which may affect the insurance companies profitability.

4.2. CLRM assumptions and Diagnostic tests

The diagnostic tests were undertaken to ensure that the assumptions of classical linear regression model are concerned, the coefficient estimators of both α (constant term) and β (independent variables) that are determined by ordinary least square (OLS) will have a number of desirable properties, and usually known as Best Linear Unbiased Estimators (BLUE). Hence, the following sections discuss results of the diagnostic tests (i.e., the error have zero mean, heteroscedasticity, autocorrelation, multicollinearity and normality) that were conducted to ensure whether the data fits the basic assumptions of classical linear regression model or not. The implication of the test, decision rules therein, test results and their discussion are discussed in the upcoming sub sections.

4.2.1 The Errors have zero mean (E (ut) = 0)

According to Chris B. (2008), if a constant term is included in the regression equation, this assumption will never be violated. Thus, since the regression model used in this study included a constant term, this assumption was not violated.

4.2.2 Heteroscedasticity Test

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

Table 4.2

Heteroskedasticity Test: White D/E

F-statistic	0.601747	Prob. F(54,62)	0.9709
Obs*R-squared	40.23350	Prob. Chi-Square(54)	0.9180
Scaled explained SS	54.76469	Prob. Chi-Square(54)	0.4454

Source: computed via E-views 8, Heteroscedasticity result.

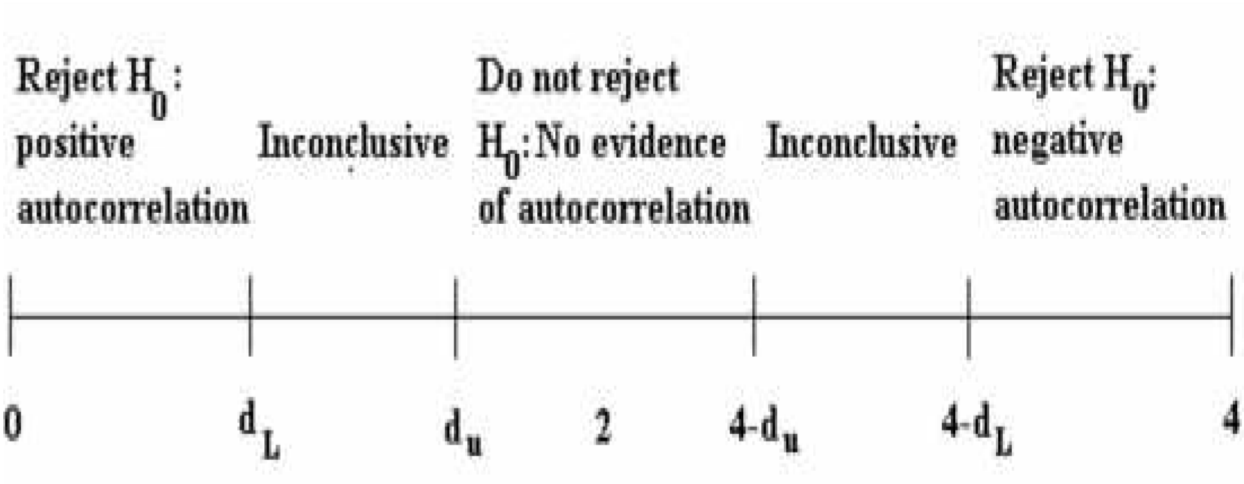
In this study as shown in table 4.2 .2 above both the F-statistic and Chi-Square versions of the test statistic gave the same conclusion that there is no evidence for the presence of heteroscedasticity in the models, since the p-values were in excess of 0.05 or 5%.

4.2.3 Test for Autocorrelation

This is an assumption that the errors are linearly independent of one another (uncorrelated with one another). If the errors are correlated with one another, it is stated that they are auto correlated. Chris B. (2008) noted the well-known test for detecting serial correlation is the Durbin-Watson (DW) test.

The DW test uses two critical values; the upper critical value (dU) and the lower critical value (dL). According to DW test, the null hypothesis of there is no autocorrelation will be rejected if the DW value from the regression is less than DL and greater than 4 -dL. But the null hypothesis is not rejected if the DW value is between dU, and 4-dU. and finally, the test result will be inconclusive if the DW value is between dU and dL, and between 4-dU and 4-dL. The rejection /non-rejection rule is given by selecting the appropriate region from the following figure 2:

Figure 4.1



Model	0	dL	du	**2**	4-du	4-dl	4
DE	0	1.484	1.874	**2.03**	2.126	2.516	4

Table 4.3

Source: Own estimation via Eviews 8, durbinwatson table, Autocorrelation Test result

The Durbin-Watson test statistic value in the regression result was 2.03 for model of D/E(Capital Structure). Thus the null hypothesis of no autocorrelation is within the non- rejection region of the number line and thus there is no evidence for the presence of autocorrelation on both model.

4.2.4 Multicollinearity Test

Multicollinearity means the existence of a “perfect” or exact, linear relationship among some or all explanatory variables (Gujarati D, 2004). If multicollinearity is perfect, the regression coefficients of the explanatory variables are indeterminate and their standard errors are infinite. If multicollinearity is less than perfect, the regression coefficients, although determinate, possess large standard errors (in relation to the coefficients themselves), which means the coefficients cannot be estimated with great precision or accuracy. If there is no relationship between the explanatory variables (independent variable), they would be said to be orthogonal to one another. If the explanatory variables were orthogonal to one another, adding or removing a variable from a regression equation would not cause the values of the coefficients on the other variables to change (Chris B, 2008). According to Gujarati (2004) multicollinearity could only be a problem if the pair-wise correlation coefficient among regresses is above 0.80. In addition, Hair JF (2006) argued that correlation coefficient below 0.9 may not cause serious multicollinearity problem.

Table 4.4 Multicolliniarity test: correlation analysis of independent variables

Correlation

	GRO	LIQ	RISK	SIZE	TAN	TR	PRO	GDP	INF
GRO	1.000000	-0.231535	0.175816	0.690343	-0.356332	0.017356	-0.260363	-0.069050	-0.569153
LIQ	-0.231535	1.000000	-0.263752	-0.207541	0.158693	-0.607652	-0.101807	-0.127402	-0.284750
RISK	0.175816	-0.263752	1.000000	0.690268	-0.597786	0.533911	0.673011	0.023844	-0.356348
SIZE	0.690343	-0.207541	0.690268	1.000000	-0.757702	0.319988	0.157815	0.019510	-0.496100
TAN	-0.356332	0.158693	-0.597786	-0.757702	1.000000	-0.050927	-0.147045	-0.055130	0.245799
TR	0.017356	-0.607652	0.533911	0.319988	-0.050927	1.000000	0.216037	0.217800	0.075642
PRO	-0.260363	-0.101807	0.673011	0.157815	-0.147045	0.216037	1.000000	-0.276278	-0.100228
GDP	-0.069050	-0.127402	0.023844	0.019510	-0.055130	0.217800	-0.276278	1.000000	0.417889
INF	-0.569153	-0.284750	-0.356348	-0.496100	0.245799	0.075642	-0.100228	0.417889	1.000000

Autocorrelation

Durbin-Watson stat	2.031159

Source: Computed via E-views 8, correlation matrix result

Table 4.4 above showed that there is no strong pair-wise correlation between the explanatory variables (GRO, LIQ, RISK, SIZE, TAN, TR, PRO, GDP and INF). In this study the highest correlation coefficient is 0.757702 between company size and tangibility of insurance companies. Thus, it can be concluded using the rule of both Gujarati, (2004) and (Hair JF, 2006) the all variables have low correlation power which is below 0.8 implies no multicollinearity problem in the explanatory variables of this study.

4.2.5 Normality Test

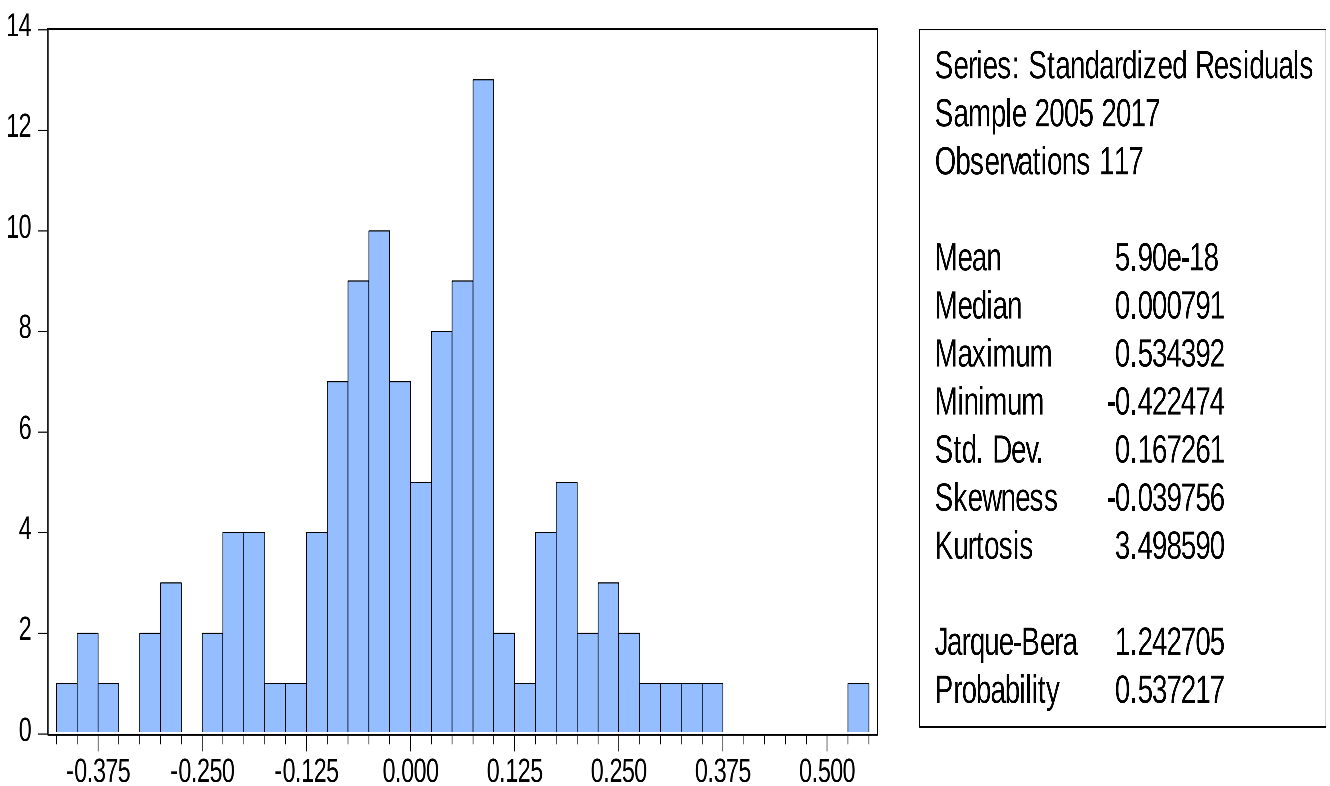
The normality test for this study is shown in figure 4.4 below. If the residuals are normally distributed, the histogram should be bell-shaped and the Bera-Jarque statistic would not be significant meaning disturbance to be normally distributed around the mean. This means that the *p*-value given at the bottom of the normality test screen should be bigger than 0.05 to not reject the null of normality at the 5% level. A normal distribution is not skewed and is defined to have a coefficient of kurtosis of 3 (Chris B., 2008). The hypothesis for the normality test was formulated as follow:

H_0: Error term is normally distributed

H_1: the error term is not normally distributed

Decision Rule: Reject H_0 if P value of JB less than significant level . Otherwise, do not reject H_0.

Figure 4.2 Normality test for D/E model



Source: Own estimation via Eviews-8, Bera-Jarqu normality test

As shown in figure 3 since, the normality tests for this study the coefficient of kurtosis was closer to 3, and the Bera-Jarque statistic has a P-value of 0.54 implies that the p-value for the Jarque-Bera test for models is greater than 0.05 which indicates that the errors are normally distributed. Based on the statistical result, the study failed to reject the null hypothesis of normality at the 5% significance level this implying that the data were normally distributed**.**

4.3 Model Selection

Fixed Effect versus Random Effect

There are broadly two classes of panel estimator approaches that can be employed in financial research: fixed effects models (FEM) and random effects models (REM). It is also necessary to determine whether the fixed effect or random effect approach is appropriate. A common practice in corporate governance research is to make the choice between both approaches by running a Hausman test (Chris B., 2008). To conduct a Housman test the number of cross section should be greater than the number of coefficients to be estimated. But, in this study the numbers of coefficients are greater than the number of cross sections so it is not possible to conduct a Hausman test. Therefore, a redundant fixed effects test was conducted to determine whether the fixed effect is appropriate for the models. As a result the cross section fixed is appropriate, so cross section fixed approach was applied. Simple pooled multiple regression techniques also used on which fixed or random effect test is not allowed to test heteroscedasticity

4.4. Regression Analysis

This section presents the overall results of the regression analysis on the determinants of Ethiopian insurance companies' capital structure. In this study D/E was used as proxy for capital structure measure. The regression analysis result is presented by using separate table for each model

4.4.1. Regression result of model Capital Structure

Table 4.5 below shows the regression analysis for D/E. In this regression analysis the dependent variable is D/E while the independent variables are company Growth, Liquidity, Risk, size, Tangiblity tax Rate, Profitability, GDP and inflation. The following regression equation estimated as follow.

Estimation Command:
=========================
LS(CX=F) DE C GRO LIQ RISK SIZE TAN TR PRO GDP INF
Estimation Equation:
=========================
D_E = C(1) + C(2)*GRO + C(3)*LIQ + C(4)*RISK + C(5)*SIZE + C(6)*TAN + C(7)*TR + C(8)*PRO + C(9)*GDP + C(10)*INF + [CX=F]
Substituted Coefficients:
=========================
D_E = -11.8773018011 + 1.69794082835*GRO + 10.4785394491*LIQ + 0.807385176082*RISK + 12.3299672631*SIZE + 0.57319042402*TAN - 0.459552743251*TR - 24.9599314584*PRO - 16.0273559061*GDP + 3.41048874812*INF + [CX=F]
Dependent Variable: D_E
Method: Panel Least Squares
Date: 10/18/19 Time: 20:49
Sample: 2005 2017
Periods included: 13
Cross-sections included: 9
Total panel (balanced) observations: 117

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-11.87730	4.163141	-2.852967	0.0053
***GRO	1.697941	0.893926	1.899419	0.0604
LIQ	10.47854	8.143473	1.286741	0.2012
*RISK	0.807385	0.233825	3.452952	0.0008
*SIZE	12.32997	3.703898	3.328916	0.0012
TAN	0.573190	1.038563	0.551907	0.5823
*TR	-0.459553	0.080318	-5.721671	0.0000
*PRO	-24.95993	3.572371	-6.986938	0.0000
* GDP	-16.02736	5.741509	-2.791488	0.0063
* INF	3.410489	0.895387	3.808955	0.0002

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.855092	Mean dependent var	3.563915
Adjusted R-squared	0.830209	S.D. dependent var	1.052329
S.E. of regression	0.433619	Akaike info criterion	1.307338
Sum squared resid	18.61453	Schwarz criterion	1.732288
Log likelihood	-58.47927	Hannan-Quinn criter.	1.479862
F-statistic	34.36436	Durbin-Watson stat	2.031159
Prob(F-statistic)	0.000000		

*, ** & *** indicates significant at 1%, 5% & 10% significance level respectively.

Source: Each insurance companies annual report, NBE and own computation via E-views 8

The regression results reported in the above Table shows that, The R-squared and Adjusted R^2 values of 0.856 and 0.830 respectively are an indication that the model is a good fit. The R^2 value is 0.856(85.6 %) which implies that 85.6% of fitness can be observed in the sample regression line. This can be further explained as, 85.6% of the total variation in capital structure is explained by the independent variables (Growth, Liquidity, Risk, Size, Tangibility, Tax Rate, Profitability, GDP & Inflation) jointly. The remaining 14.44% of change is explained by other factors which are not included in the model. Furthermore, the F-statistic was 34.36 and the probability of rejecting the null hypothesis that there is no statistically significant relationship existing between the dependent variable (D/E) and the independent variables, is 0.000000 indicates that the overall model is highly significant and that all the independent variables are jointly significant in causing variation in capital structure at 1% significance level.

The fixed effect estimation regression result in the above table shows that, coefficient intercept (α) is -11. 87730 This means, when all explanatory variables took a value of zero, the average value D/E would take -11.87730 unit and statistically significant at 1% level of significance.

Company Growth

Growth is a percentage of earnings before interest and tax. The coefficient of company growth is positive (1.697941) and statistically insignificant with p-value of 0.0604 which is higher than 0.05.The positive result tells us that all other variables remain constant when growth increase by 1% D/E will increase by 16.98% and the relationship is insignificant at 5% significance level.

Company liquidity

Measures the Ratio of liquid Assets over Total assets. The above table depicted that, the coefficient of liquidity measured by current assets to total assets is 10.47854 and its P-value is 0.2012. Holding other independent variables constant at their average value, when liquidity increased by one percent, D/E of sampled Ethiopian insurance companies would increase by 10, 48% but the relationship is statistically insignificant at 10% of significance level. In other words, there is insignificant positive relationship between liquidity and D/E of sampled Ethiopian insurance companies. Therefore, the researcher rejects the null hypothesis that there is negative relationship between liquidity and D/E. This positive relationship is expected as per the result is consistence with previous studies which found a positive and insignificant relationship between liquidity and D/E, for instance, Charumathi B. (2012), Nikhil B. (2015) and Qamar. M et al. (2016). The higher the insurance companies liquidity the higher will be its D/E as well.

Company Risk

Risk relates to the volatility in earnings and according to the trade-off theory companies with high risk are likely to face higher costs of financial distress and will therefore use less debt. Similarly, volatility in earnings may limit the probability of fully utilizing the benefits from tax shields, again leading to lower debt levels. (Frank & Goyal, 2009).The Coefficient of risk 0.807385 is statistically significant at 1% significant level with a p-value of 0.0008.

Concerning the risk variable, which is measured by claim incurred divided by annual premium earned; the mean of incurred claims to annual earned premium ratio was 62%. This implies that on average, most insurance companies from the sample paid 62% loss incurred out of the total premium earned per year which was favorable as compared with acceptable standard of around 70%. The highest ratio of losses incurred to earned premium value was 89.5% incurred by Africa insurance on 2014 which is above the maximum standard of 70%, in additions the minimum value for a company was recorded by Nib insurance company on 2005 was 13% which is far below the maximum standard of 70%. This indicates that there is high variation in underwriting risk in Ethiopia insurance industry during the study period of 2005-2017.

Company size

Company size is also a common company characteristic used in empirical research and a determinant which also provides consistent results in its relationship to leverage. The interpretation of size in a trade-off perspective is frequently that of larger companies being more diversified and therefore subject to lower default risk and less volatility in cash flows (Frank & Goyal, 2009). Similarly, direct bankruptcy costs, are relatively fixed and therefore as a proportion of company value they decrease with company size. The trade-off theory thus predicts that company size is positively related to leverage. Larger companies are likely to be better known and will therefore be subject to less asymmetric information and the related costs. Accordingly, larger companies will be able to issue equity at lower costs which will mean a lower leverage ratio and furthermore larger companies are assumed to have had an opportunity to retain earnings (Frank & Goyal, 2009). So according to the pecking order theory larger.

The above table depicted that, the coefficient of size measured by log of sales is 12.32997 and its P-value is 0.00012. Holding other independent variables constant at their average value, when firm’s size increased by one percent, D/E of sampled Ethiopian insurance companies would increase by12.32% but the relationship is statistically significant at 1% of significance level. In other words, there is significant positive relationship between company size and D/E of sampled Ethiopian insurance companies.

Company tangibility

The thought behind asset tangibility as a determinant is that tangible assets provide more security for potential investors as assets can serve as collateral. This will reduce the risk for debt holders and ultimately reduce the cost of debt for the companies and they will be able to operate with higher leverage ratios without incurring higher financial distress costs (Titman &Wessels, 1988).

Tangible asset measured by tangible assets divided by total assts. The coefficient of TAN is positive 0.573190 and statistically insignificant with p-value of 0.58230 which is above 0.05. The positive result shows that there is direct relationship between tangibility of asset and D/E. The regression result is in consistent with the hypothesis of the study. The regression result of this study regarding the effect of tangibility of assets of insurance companies on their capital structure is similar with empirical evidences by Meaza M. (2014). It revealed that there exists a positive relationship between tangibility of assets and capital structure of insurance companies in Ethiopia due to the fact that higher the firm’s total assets are composed of fixed asset the higher will be its D/E because tangible assets provide good collateral for the insurers.

Company Tax rate

Tax rate are compulsory contribution levied by the local government are applied to all of the firms and also play an important role in capital structure decision. Firms with high degree of leverage can get much benefit from tax shield, because interest on debt is a tax-deductible expense. Trade-off theory explains that in case of higher tax rate, firms will issue more debt to obtain a tax shield gain (Modigliani & Miller, 1963); and the study of Mansur (2013) provided evidence that the marginal tax rate affect financing decision.

Measured by dividing Tax paid by EBIT. The coefficient of Tax rate is -0.459553 and statistically significant at 1% with p-value of 0.0000. The negative result shows that there is direct relationship between tax rate and D/E. The regression result is in consistent with the hypothesis of the study. It revealed that there exists a positive relationship between tax rate and capital structure of insurance companies in Ethiopia.

Company profitability

Profitability is one of the most tested company characteristics in empirical research regarding companies' choice of capital structure. The trade-off theory predicts that higher profitability is associated with increased debt levels and the reason for this is twofold. First, companies achieving high profitability have less risk of financial distress and bankruptcy, so the cost of debt is lower. Second, higher profitability means that companies can achieve higher utilization of the interest tax shield by increasing the amount leverage and hence the promised interest payments each period. Similarly, increased debt will serve as a disciplinary factor for managers when free cash flow likely increase with increased profitability (Jensen, 1986). However, as dynamic trade-off theory predicts adjustment costs will prevent companies from adjusting the capital structure immediately and the unlikelihood of companies being at their refinancing points at the time of measurement causes the prediction of the found relationship between leverage and profitability to be negative due to the static nature of the determinant analysis.

Profitability measured by earnings before interest and tax divided by total assets. The coefficient of profitability is -24.95993and statistically significant at 1% with p-value of 0.0000 which is above. It implies that profitable firms in Ethiopian insurance companies sector maintain low debt to equity ratio. This result is consistent with predictions of Pecking order theory which states that firms prefer to finance first with internal funds before raising external financing. Further this outcome is also consistent with the most previous studies (Titman &Wessels, 1988; Rajan and Zingales, 1995; and Booth *et al.,* 2001).Hence, with highly significance at 1 percent for inverse relationship between profitability and financial leverage, it can be concluded that highly profitable insurance companies in Ethiopia maintain low debt to equity ratio and they utilize more equity source compared to debt for making their capital structure.

Gross Domestic Product

GDP is the most important single macroeconomic indicator of progress in economic development. GDP is measured by the growth in gross domestic products of the country. The coefficient of GDP is -16.02736 and statistically significant at 1% significance level with p-value of 0.0063 which is lower than 0.05. The major reason behind negative relationships between economic growth and capital structure is while the country economy grows; the demand for insurance coverage like automobile insurance, home owner insurance, worker compensations insurance are relatively increase and the degree of people involvement in risky investments also increases this and other factors not included in this study may affect insurance company capital structure negatively, The research finding is consistence with previous studies which found a negative relationship between GDP and D/E, for instance Andres & Stephen (2013). The higher the growth rate of the country the lower will be the insurance capital structure.

Company Inflation

Inflation (INF) is measured by the growth in selling price of products in the country. The regression result shows that inflation has a positive and significant at 1% significant level with a p- value 0.0002 and since the beta coefficient and probability of INF was 0.895387and 0.0002 respectively. This means when inflation increased by 1%, debt or equity (D/E) of sampled Ethiopian insurance companies would increase by 0.89%, but the relationship is statistically insignificant at 1% of significance level. So, the researcher fails to rejects the null hypothesis that there is positive and significant relationship between inflation and D/E, since it is inconsistent with the regression result of the study. From the actual result one can conclude that inflation have influence on Ethiopian insurance companies' D/E since the study get enough statistical result that support positive and significant effect of inflation on capital structure.

Table 4.5 Expected and Actual Signs of the Independent Variable

Dependent variable		D/E		
Explanatory variables	**Expected relationship**	**Actual relationship**	**Statistical significance Test**	**Hypothesis status**
GRO	Negative	Positive	Insignificant at 5%	R ejected
LIQ	Positive	Positive	Insignificant	Rejected
RISK	Positive	Positive	Significant at 1%	Fail to Rejected
SIZE	Positive	Positive	Significant at 1%	Failed to reject
TAN	Positive	Positive	Insignificant	Rejected
TR	Negative	Negative	Significant at 1%	Fail to reject
PRO	Negative	Negative	Significant at 1%	Failed to reject
GDP	Positive	Negative	Significant at 1%	Fail to reject
INF	Positive	Positive	Significant at 1%	Failed to reject

Source Developed by the researcher. As shown from the above summary table 4.5

4.5. Hypothesis Testing

Test of the research hypotheses were made based on the relationship of dependent variable and the explanatory variables. Therefore, the following subsections deal with hypothesis testing and the interpretation of the regression results presented above.

I. Leverage with Growth

Research hypothesis 1 predicted that a growth have a positive effect on determinant of capital structure, and the regression result of beta coefficient linked to growth (GR) rejected the 1st null hypothesis favoring the alternate hypothesis that infer negative relationship between capital structure and growth variable. To conclude, growth is found to be insignificant factor for deciding the capital structure issues in insurance sector in Ethiopia.

II. Leverage with Liquidity

Research hypothesis two was formulated to estimate the effect of liquidity on leverage. Beta coefficient associated with Liquidity (LIQ) accepted the second null hypothesis and proved that there is a positive relationship between liquidity and capital structure of insurance companies in Ethiopia. In this study, the sign of liquidity variable coefficient is found to be positive, but not statistically significant.

III. Leverage with Risk

Research hypothesis three was formulated to estimate the effect of risk on leverage. The result of beta coefficient linked to risk variable accepted the third null hypothesis and proved the positive effect of risk on capital structure and risk of insurance companies in Ethiopia.

In this study, risk is estimated to have significant positive relationship with leverage of Insurance companies. The positive effect and is statistically significant at 1 percent significance level.

IV. Leverage with Size

Research hypothesis four was formulated to estimate the effect of size on Leverage. The result of beta coefficient linked with size (SIZE) accepted the fourth null hypothesis and proved that there a positive effect of size on leverage of insurance companies.

This study found size to be highly statistically significant at the 1 percent level and have positive impact on the insurance companies leverage. This suggests that larger insurance companies in Ethiopia tend to have higher leverage ratios and borrow more capital than smaller insurance companies do.

Since the result of size variable indicated a significant statistics, it is estimated that size does have significant role in making debt ratio and determining the capital structure of Ethiopian insurance companies.

V. Leverage with Tangibility

Research hypothesis five was formulated to estimate the effect of tangibility on leverage. Beta coefficient associated with Tangibility (TN) accepted the second null hypothesis and proved that there is a positive effect of Tangibility on capital structure of insurance companies in Ethiopia.

In this study, the sign of tangibility variable coefficient is found to be positive, but not Statistically significant.

VI. Leverage with Tax rate

Research hypothesis six was formulated for the effect tax rate on leverage. Beta coefficient associated with tax rate (TR) accepted the sixth null hypothesis and this positive effect is found statistically significant at 1 percent significance level.

It implies that tax rate of firms in Ethiopian insurance company sector maintain low debt to equity ratio.

VII. Leverage with Profitability

Research hypothesis seven was formulated for the assessment of the effect of profitability on capital structure. Beta coefficient associated with profitability (PRO) accepted the first null hypothesis.

In this study, profitability is estimated to be negative effect with insurance's leverage ratio and this effect is found statistically significant at 1 percent significance level. It implies that profitable firms in Ethiopian insurance companies sector maintain low debt to equity ratio.

VIII. Leverage with GDP

Research hypothesis eight was formulated for the effect of Growth Domestic Product (GDP) on capital structure. Beta coefficient associated with GDP accepted the first null hypothesis.

In this study, GDP is estimated to be found negative effect with insurance leverage ratio and this effect is found statistically significant at 1 percent significant level.

IX. Leverage with Inflation

Research hypothesis nine was formulated to estimate the effect of inflation on leverage. The result of beta coefficient linked with Inflation (INF) accepted the ninth null hypothesis and proved that there a positive effect of inflation on leverage of insurance companies.

This study found inflation to be highly statistically significant at the 1 percent level and have positive impact on the insurance companies leverage. Since the result of inflation variable indicated a significant statistics, it is estimated that inflation does have significant role in making debt ratio and determining the capital structure of Ethiopian insurance companies.

Chapter Five

Summary, Conclusions and Recommendations

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

5.1. Summary

The main objective of this study was to investigate most important determinants of insurance companies' capital structure in Ethiopia. According to previous studies made on the determinants of insurance companies' capital structure, capital structure is affected by both internal and external factors. Internal factors are factors that are under the control of insurance companies' management and also called company specific factors. Those factors include company profitability, tangibility, size, growth, risk, tax rate and liquidity. Furthermore, external factors represent events outside the control of insurance companies which is composed of industry specific and macroeconomic factor like GDP and inflation. In this study two measures of capital structure was used: this was D/E.

The empirical analysis of investigating the determinants of the Capital structure of Ethiopian insurance companies was conducted using a panel data set consisting of financial data of nine insurers over the period of 2005 to 2017, which were analyzed using descriptive statistics, and multiple linear regression analysis. The analyses were made in line with the specific research objectives and stated hypotheses formulated in the study. Thus, panel data of nine insurance companies for thirteen years was used for the analysis purpose. Data used for the insurance specific factors were obtained from each companies audited financial reports from NBE, whereas data of external factors were obtained from NBE and MOFED. Before making regression analysis, the study goes through all diagnostic tests, including the errors have zero mean, multicollinearity, hetroscadacity; normality and autocorrelation were made for the classical linear regression model by using E-views 8 software. Regression Analysis was identified as the most appropriate tool for econometric analysis of the data. The assumptions needed to be fulfilled for OLS were tested; the data was found to be homoscedastic, free of autocorrelation, free of Multi-collinearity and normally distributed.

5.2. Conclusion

In this study, both firm specific and macroeconomic explanatory variables were considered. These include Growth, Liquidity Risk, Size, Tangibility, Tax rate, Profitability, GDP and Inflation were considered as independent variables while leverage measured by Debt over Equity was considered as dependent variables. The empirical findings on the determinants of capital structure of the insurance companies in Ethiopia for the sample suggested the following conclusions.

- The profitability level of the insurance companies affects their leverage ratio negatively though significant, which supports the pecking order theory and the hypothesis formulated for the study. Thus, from the result it can be concluded that highly profitable insurance companies are more likely relied on internally generated funds and equity capital than debt capital as the source of financing.

- Consistent with the argument of Pecking Order Theory, and the hypothesis made for this study, the result is found a significant positive relationship between growth opportunity and leverage ratio of the insurance companies. Insurance companies with relatively high growth opportunity needs more debt financing than less for growing companies. Because internal fund is not sufficient to meet their requirement, and therefore they go for external financing by way of issuing more underwriting policies and thereby collect more premium to finance their operations.

- Regarding to the effect of tangibility on the capital structure of insurers in this study, the regression result of asset tangibility was positive and insignificant to the expected positive relationship, but it is in line with the pecking order theory. This means the relationship is insignificant implying that tangibility is not the major determinates of the leverage of insurance companies in Ethiopia.

- Besides, the results of the study indicated that insurer’s size had significant positive relationship with leverage, which was consistent with trade- off theory. This result indicates that large sized insurance companies, needs more debt financing than small sized insurance companies. Big size insurance Companies can more easily attract more risk transfers from individuals and business firms thereby increasing the leverage of the companies by premium financing.

- Consistent with pecking order theory and the hypothesis of this study, the liquidity ratio of Ethiopian insurance companies was inversely related with their leverage ratio. The result shows that there is a statistically significant relationship at 1% significant level. The negative relationship shows that more liquid firms will tend to use less debt in their capital structure. Liquid firms are in possession of more internal funds, which can be used as a source of finance. Therefore more liquid firms are far less leveraged than less liquid firms.

- The tax rate of Ethiopian insurance companies was inversely related with their leverage ratio. The result shows that there is a statistically significant relationship at 1% significant level. The negative relationship shows that more tax rate of insurance companies will tend to use less debt in their capital structure.

- The Risk of Ethiopian insurance company's positive impact of risk on the leverage of insurance companies and in consistent with the research hypothesis that risk has a positive relationship with leverage of insurers. This is due to, the fact that increase risk overall income level and business performance which ultimately increases insurable properties that ultimately raises the volume of premium income and hence high leverage of the insurer.

- The regression result shows a positive impact of GDP growth rate on the leverage of insurance companies and in consistent with the research hypothesis that GDP has a positive relationship with leverage of insurers. This is due to, the fact that increase in GDP growth raises overall income level and business performance which ultimately increases insurable properties that ultimately raises the volume of premium income and hence high leverage of the insurer.

- Inflation was predicted to have a positive correlation to leverage of the insurance companies. The result indicated that inflation has a significant positive relation with the leverage of the insurance companies resulted in a p value of (0.0002) at 1%.

In general, the finding of the study suggests that, risk, size, tax rate, profitability and macroeconomic factors: GDP and inflation were important variables that influence insurance companies' capital structure. Moreover, though the result of growth, liquidity and tangibility were insignificant, it shows that there is a negative relationship between debt and liquidity and tangibility which have no impact on the financial decision of the insurance companies.

5.3. Recommendations

On the basis of the findings of this study, the researcher has drawn the following recommendations,

- ❖ The analyses indicated that the independent firm specific variables of size, asset tangibility, and liquidity and macroeconomic variable of GDP and inflation were significantly related to leverage. Therefore, managers of the insurance companies should consider the impact of these significant variables in determining their financing needs so as to maximize the value of the company and meet the shareholders return to the extent that gives value for their invested money.
- ❖ The regression result of the variables applied in this study indicated that the pecking order theory exceedingly appears to exert influence on the insurance company's capital structure. It is, therefore, important for managers of this sector to formulate a policy that promote the need to enhance the equity capital and the internal growth and to use for future financing needs of the company.
- ❖ In view of the current growth opportunity and the overall macroeconomic situations, the values of insurable properties and all forms of trading activities is expected to steadily continue growing and in return the demand for insurance coverage will increase. So the managers of insurers should manage level of leverage that comes in the form of premium financing. The insurers should reduce the impact of high claim costs that likely increase from the volume of premium written through techniques like product selections, increase claims handling practice and gathering sufficient information or detail about subject matter of insurance. This is because, as this study has concluded, the financing behavior of Ethiopian insurance companies is in support of the pecking order theory that the debts that comes in the form of premium financing needs to be carefully managed. Otherwise, it may lead to insolvency if the proportion of debt to equity is more on these companies.

- ❖ Regarding tangibility of assets, the statistical result shows that the percentage of fixed assets to total assets was 20% and a negative sign which implies that insurance companies might not have enough tangible assets so as to use collateral for debt financing and increase the leverage .The reason for holding less fixed assets by the companies is a statutory requirement with expected benefit of holding a large amount of liquid assets is that it can offset any unexpected and large claims costs without reverting to asset sales or emergency funding. If assets have to be sold at short notice, insurers may not obtain a fair market value. It is more prudent to anticipate unexpected losses and keep liquid assets to meet the demand. On the other hand, liquid assets provide lower yields, that the opportunity cost for holding a large amount of liquid assets is high. So it needs relaxing the required level of liquid assets to optimum level that balances the tradeoff between the opportunity cost of holding too much liquid assets versus expected benefit of holding these assets and allow companies to improve holding of their fixed assets in proportion of the total assets they hold thereby manage their capital structure to hedge these assets as security for loan that could be acquired from the bank market used as an alternative way of debt financing.
- ❖ The significant part of the debt composition of the insurance companies is claim reserves which is a short term liabilities payable to policyholders. The companies do not hold long-term debt because of the absence of long-term financing entities as long term debt is the major issue for any firm for the expansion of its business. This type of debt financing can be facilitated from bond markets. The decision to develop a market-based system seems to be of a priority. Therefore, the government should consider the establishment of capital market in Ethiopia as this greatly contributes to the development of the economy in general and to the insurance sector in particular to access their financing needs.

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