Factors Determining Profitability of Private Insurance Companies in Ethiopia: Panel Evidence

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Statement of Declaration

I declare that the thesis for the MBA degree at the Addis Ababa University, hereby submitted by me, is my original work. I have undertaken it independently with the advice of my advisor, Dr. Ethiopia Legesse. In performing the thesis I have used different sources and material which have been acknowledged.

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This is to certify that the thesis prepared by Amare Girma, entitle: *Factors Determining Profitability of Private Insurance Companies' in Ethiopia: Panel Evidence* and submitted in partial fulfillment of the requirements for the degree of Masters of Business Administration (MBA) in Management complies with the regulations of the university and meets the accepted standards with respect to originality and quality.

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Abstract

Profitability is one of the most important objectives of financial management because one goal of financial management is to maximize the owner` s wealth. This paper examines the effects of firm specific factors (volume of capital, leverage ratio, liquidity ratio, tangibility of assets and managerial efficiency) and one macroeconomic factor, economic growth rate on profitability proxies by ROA. Profitability is dependent variable while volume of capital, leverage, liquidity ratio, managerial efficiency, tangibility of assets and economic growth rate) are independent variables. The sample in this study includes six of the listed private insurance companies for ten years (2007-2016). Secondary data obtained from the financial statements (Balance sheet and income statement) of insurance companies', financial publications of NBE are analyzed. For the analysis task E-viwes9 software and stata12 were used. From the regression results; economic growth, tangibility of asset, volume of capital and managerial efficiency are identified as most important determinant factors of profitability among these variables economic growth, leverage, and volume of capita are found to be positively related. In contrast, managerial efficiency and tangibility of assets are negatively but, significantly related with profitability. Lastly, liquidity ratio and leverage are not significantly related with profitability.

Key words: Determinants; profitability; Private insurance Companies

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List of Acronyms

CLRM: Classical Linear Regression Model

DW: Dublin Watson

ECM: Error Components Model

FEM: Fixed Effect Model

GDP: Gross Domestic Products

LSDV: least-squares dummy variable model

LQ: Liquidity

NBE: National Bank of Ethiopia

OLS: Ordinary List Square

REM: Random Effect Model

ROA: Return of Asset

ROE: Return on Equity ROI:

Return of Investments TOA:

Tangibility of Asset VIF:

Variance Inflation Factor

VOC: Volume of Capita

CHAPTER ONE
INTRODUCTION

1.1Background of the study

Profitability means the ability of making profit from a given investment to earn a return from its use. It shows the ability of earning return out of the resources consumed or used. Profitability shows the management‟s effort how they efficiently can make profit by using all the available resources in the market. According to Dejene (2015), profitability serves as a measure of evaluating overall business performance. Profitability is the standard to measure management‟s performance or efficiency. It is also expressed as the ability of enterprise to get sufficient return on the resource used in the operation of a business. Malik (2011) stated that profitability is the most important objectives of financial managers that resulted in maximizing the owners‟ wealth; among different techniques for measurement of profitability, ROA is a better way. Profitability is major factor of the firm to exist; the objective of financial managers is to maximize owners‟ wealth.

Financial institutions are vital contributor to the overall performance of an economy in any country by serving the economy as intermediary as well as risk taker. Workie (2012) stated that financial institutions serve as a medium of exchange and facilitate business activities, support mobilization of resources through savings and allocate resources to activities with highest returns, follow up investments and exert corporate governance, and offer a diversity of financial instruments. Gashaw (2012) current business world without financial institutions such as insurance is unsustainable, in practice some economic units are in surplus whereas the others remain in deficit, in other way risky businesses do not have capacity to retain all types of risk in the uncertain environment.

Insurance companies are not only providing the mechanism of risk transfer but also helps to channelizing the funds in an appropriate way to support the business activities in the economy.

One of the financial institution sectors is insurance, which provide a unique financial service by serving the societies in managing risk. Insurance companies protect policyholders from unfavorable actions. For the past more than ten years Ethiopia‟s strong economic performance

continues enormously, it is revealed by a remarkable GDP growth and it is also expected to continue for the future. According to annual report of NBE (2012/13), Real GDP continued to grow on average by 10.9 percent in the past decade which is 2003/04 to 2012/13, in 2012/13 the growth is much higher than as compared to forecast of other sub-Saharan African countries. World Economic Outlook Update, (July 2014), stated that in 2013/14 the 10.3% Ethiopian economic growth has been remarkable compared with the 5.4% growth estimated for Sub-Saharan Africa in 2014. The above continuous economic growth encourage the emergence of insurance companies but the insurance sector in Ethiopia does not grow as expected and cannot take a main part for the economic development.

According to Shifa (2014) stated that although the insurance industry keeps on improving over time, it contributes less than 1% to country‟s GDP. Despite the fact that, in this time the Ethiopian economy increasing and the huge projects are under construction. In addition to these the number of vehicles, industries and per capita income of the citizens increase. On the other hand the risk & uncertainty are highly complex and increased. Thus, the insurance company particularly private insurance companies shall financially strong to continue sustainable economic growth and the investors‟ gate piece of mind by risk transferring to the insurers.

1.2 Background of insurance companies in Ethiopia

The history of modern forms of insurance industry in Ethiopia was introduced in 1905 together with the banking industry by Europeans, Emperor Minelik II and a representative of the British owned National Bank of Egypt were reached an agreement to open a new bank in Ethiopia, then, Bank of Abyssinia was opened. The first provider of modern insurance in Ethiopia was Bank of Abyssinia, it served as an agent of a foreign insurance company, which gave fire and marine policies. In 1923 a Swiss insurance company, La Baloise Fire insurance started functioning by an Austrian agent. In 1951 the first domestic insurer, Imperial insurance company was opened, until1951 except Imperial Insurance Company, all the remaining were branches or agents of foreign insurance companies (Zeleke, 2007).

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 (Zeleke, 2007).

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

Proclamation number 86/1994 was issued to provide for licensing and regulation of insurance business. This proclamation opened the insurance market to domestic private investors that is why since 1994 many privately owned insurers are emerging; according to NBE 2013/14 report the numbers of insurance companies currently in operations are one government and 16 privately owned insurance companies. In the year 2012 new insurance business proclamation was issued, proclamation No. 746/2012 and directiveNo.SIB 34/2013 was followed to consider the requirement of risk based supervision, and which clearly limit the insurance business to foreigners.

According Asnakew (2011) In sum, the development of the insurance sector since 1994 in many ways resembles that of the banking sector, with the establishment of several new private insurance companies, the range of insurance products offered is limited indicating that the sector is still at an early stage of development. He also further explained that the Ethiopian insurance industry is among the lowest in the world and African countries in terms of the three measures namely: Insurance premium market share, market penetration rate and insurance density (insurance premium per capita).

Therefore, The NBE should continue encouraging the industry as fast as possible to let the insurance companies to penetrate potential of the insurance industries in African counties as the potentials mentioned by Association of Kenya Insurers 2012 annual report. To maximize their profitability it is necessary to identify the major factors affecting their profitability.

1.3 Statement of the problem

The best performance of any industry in general and any firm in particular plays the role of increasing the market value of that specific firm coupled with the role of leading towards the growth of the whole industry which ultimately leads to the overall success of the economy. The Insurance industry in particular is part of protected and restore system of an economy and successful operation of the industry can set energy for other industries and development of an economy. To do so the insurance industry is expected to be financially solvent and strong through being profitable in operation. Hence, not only measuring the financial performance of privet insurance companies but also clear insight about determinants that determine profitability in the industry is then the problem to be investigated. Therefore, the determinants of private insurance company‟s profitability have attracted the interest of academicians, practitioners and institutional supervisors. (Melese, 2014)

Previews literature (Nigussie, 2012), (Melese, 2014), and (Dejene, 2015) shows the studies conducted on the banking sectors and at the whole industry level. However few studies are conducted on the insurance sector. In Ethiopia, to the best of the researcher knowledge, there are few studies which examined profitability of insurance company‟s determinants and very few studies worked specifically in private owned insurance companies‟ profitability in Ethiopia. Although, the researcher the way to measured, the data employed, the period and explanation are different from the other researchers.

Additionally most of the studies focused only on firm specific factors. Indicating that factors affect the financial performance of private insurance companies has not been adequately investigated. While taking in to consideration the inadequacy of empirical investigation into the factors determining profitability of private insurance companies in Ethiopia, the researcher attempts to fill such gaps in empirical evidence, in addition to firm specific factors, by including macroeconomic factor that determine profitability of insurance: in the case of Ethiopian private insurance companies.

1.4 Research Questions

- What are the major factors that determining private insurance companies profitability in Ethiopia?
- What are the internal and external factors that determining private insurance companies profitability in Ethiopia?
- Which factors are positively/ negatively relationship with the dependent variable and statistically significant?

1.5 General Objective of the study

The main objective of the study is to identify the major internal and macroeconomic factors; that determining profitability of private owned Insurance companies in Ethiopia by using empirical study and panel evidence.

1.5.1 Specific objectives

- To identify the internal factors that determines the profitability of private insurance companies in Ethiopia by using econometrics model.
- To show to what extent the external factors that determines the profitability of private insurance companies in Ethiopia.
- To find out the relationship between the profitability of private insurance companies with internal &macroeconomic determinants.
- To check out the basic econometrics assumption were mitigated or violated by the study
- To recommend important points to the investors, top managements, stockholders & NBE

1.6 Significance of the study

Most of the studies previously focused on banks not on insurance companies as well as some focused on only analysis of financial performance not on factors affecting financial performance. Despite there are some studies that examine factors that affect the profitability of insurance companies in Ethiopia but, they focused only on firm specific factors and not studied in private owned insurance companies specifically.

The regulatory body interested in knowing which companies operate successfully or failed to take the necessary measures to avoid crises of the bankruptcy in these companies. Administration interested in identifying indicators of success and failure to take the necessary actions to improve

the performance of the company and choose the right decisions. Investors interested in such studies in order to protect their investment, and directing it to the best investment. Customers interested in knowing the ability of insurance companies to pay their obligations based on the indicators of success of the companies. Accordingly government, management, investor and customer benefit from the result that emerged from this study.

This research also have significant role to better understand what determines financial institution‟s such as private insurance companies profitability in Ethiopia. Moreover, the researcher also contributes that this study can potentially serve as a stepping stone for further research in the area.

1.7 Scope and limitation of the study

The study focused only on the factors determining profitability of Private Insurance Companies in Ethiopia and also the scope of the study confined merely on the quantitative measure of determinates of insurance companies profitability in Ethiopia. The period covered panel data from 2007 to 2016 of six selected private insurance companies‟ financial statement. The researcher reason‟s selected this period due to that indicates the current real performance of each selected private insurance companies and the observation believed that reasonable number.

To avoid the extreme variation of data the government owned company Ethiopian Insurance Corporation was not included in this study. The young and some medium insurance companies were did not included in the study due to incomplete data, short period of establishment and small amount of capital. The selected populations were included Awash, Africa, NIB, Nile, Global and the United insurance company ten consecutive annual financial and income statement.

Financial statement presentations of the studied insurance companies were different from each other, even in a single company different financial statement format used over the year. It makes difficult to take the intended data but the researcher unravel this difficulties by contacting respective insurance companies department which is responsible for issuing financial statement. And also the researcher takes the data from national bank of Ethiopia each company income statement and balance sheet annual reports.

1.8 Organization of the paper

The study comprises five chapters. Firstly the introductory part, then second chapter deals with review of related literatures. The third chapter is about methodology of the study and the forth chapter includes data analysis and interpretations. Finally, the last chapter contains conclusions and recommendations of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Theoretical review

2.1.1 Concept of insurance companies

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

Insurance serves a number of valuable economic functions that are similar and largely distinct from other types of financial intermediaries. According to Malik (2011) insurance plays a crucial role in development commercial and infrastructural businesses. From the latter perspective, it promotes financial and social stability; mobilizes and channels savings; supports trade, commerce and entrepreneurial activity and improves the quality of the lives of individuals and the overall wellbeing in a country. Koller (as cited in Abate 2012) suggests that insurance companies are playing the role of transferring risk and channeling funds from one unit to the other (financial intermediation). This implies that insurance companies are helping the economy of a country one way by transferring and sharing of risk which can create confidence over the occurrences of uncertain event and in another way insurance companies like other financial institutions plays the role of financial intermediation so as to channel financial resources from one to the other.

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

General insurance companies and life insurance companies are different each other in terms of operation, investment activities, vulnerability and duration of liabilities. Life insurers are said to function as financial intermediaries while general insurers function as risk takers (Chen and Wong2004).

2.1.2 Profitability

Profit is what is left over from income earned after you have deducted all costs and expenses related to earning the income and it is one of the core reasons for the continued existence of every business organization and also it is expected so as to meet the required return by owners and other outsiders. Profitability means ability to make profit from all the business activities of an organization, company, firm, or an enterprise. It shows how efficiently the management can make profit by using all the resources available in the market. According to kaguri (2013), profitability is the ability of a given investment to earn a return from its use. Profitability is an index of efficiency; and is regarded as a measure of efficiency and management guide to greater efficiency.

Profitability is one of the most important objectives of financial management because one goal of financial management is to maximize the owner` s wealth and profitability is very important determinants of performance (Malik 2011).

According to Kabajeh and et al 2012 profitability ratios are an indicator for the firm's overall efficiency. It‟s usually used as a measure for earnings generated by the company during a period of time based on its level of sales, assets, capital employed, net worth and earnings per share. Profitability ratios measures earning capacity of the firm, and it is considered as an indicator for its growth, success and control. Consequently, the term 'profitability' is a relative measure where profit is expressed as a ratio, generally as a percentage.

There are different ways to measure profitability such as: Return on assets (ROA) ratio, Return on owner's equity (ROE) ratio and return on investment (ROI). ROA ratio is calculated as net profit before tax divided by the total assets. This ratio measure for the operating efficiency for the company based on the firm‟s generated profits from its total assets whereas ROE ratio is calculated as net profit after tax divided by the total shareholders‟ equity. This ratio measures the shareholders rate of return on their investment in the company (Kabajeh and et al 2012).

Activity ratios are another group of ratios; it's usually used to measure the ability to optimize the use of the available resources. These ratios are other measures of operational efficiency and performance. Among this group of ratios is the turnovers to capital employed or return on investment (ROI) ratio. ROI ratio is calculated as net profit after tax divided by the total paid in capital. It measures the firm's efficiency in utilizing invested capital. In other words this ratio expresses company's ability to generate the required return (expected return) based in using and managing the invested resources by the shareholders. Kabajeh and et al (2012) also suggest that ROA and ROE are the most used profitability ratios in the analysis.

According to Swiss Re (2008), Profits are determined first by underwriting performance (losses and expenses, which are affected by product pricing, risk selection, claims management, and marketing and administrative expenses); and second, by investment performance, which is a function of asset allocation and asset management as well as asset leverage. The first division of the decomposition shows that an insurer‟s ROE is determined by earnings after taxes realized for each unit of net premiums (or profit margin) and by the amount of capital funds used to finance and secure the risk exposure of each premium unit (solvency). That is why most researchers use ROA as a measure of profitability in financial institutions.

2.2 Traditional theory

This theory suggests that minimizing the cost of capital when the optimal level of debt capital is employed maximizes the value of the firm (Brealey and Myer as cited in Kaguri 2013). It‟s based on the argument that at low levels of debt, increased leverage doesn‟t increase the cost of debt hence; the replacement of an expensive source of capital (equity) with a cheaper source (debt) translates to an increase in the value of the firm. This creates borrowing incentives to firms. The main reasons behind this are: first, investors who hold debt are informed of the increased risk at „moderate" debt levels and will continue demanding the same return on debt. They argue that it‟s only at „excessive" debt levels that they demand a higher return. The Second reason is that debt funds are cheaper than equity funds carries it implies that the cost of debt plus the cost of equity together on weighted basis will be less than the cost of equity, which existed on equity before debt financing; that‟s the weighted average costs of capital will decrease with the use of debt (Brealeyand Myers and Alexander as cited in Kaguri 2013).

The validity of the traditional view is questioned on the ground that the market value of the firm depends upon its net operating income and risk attached to it. The form of financing doesn‟t change net operating income nor the risk attached to it but simply the way in which the income is distributed between equity holders and debt holders (Brealey and Myers as cited in Kaguri 2013).

2.3 Resource based theory

This theory addresses performance differences between firms using asymmetries in knowledge (Chen as cited in Kaguri 2013). At the corporate strategy level, theoretical interest in economies of scope and transaction costs focus on the role of corporate resources in determining the industrial and geographical boundaries of the firms‟ activities. At the business strategy level, explorations of the relationships between resources, competition and profitability include the analysis of competitive imitation, the appropriable of returns to innovations, and the role of imperfect information in creating profitability differences between competing firms.

Industrial organization economics emphasizes industry attractiveness as the primary basis for superior profitability, the inference being that strategic management is concerned primarily with seeking favorable industry environments, locating attractive segments and strategic groups within industries and moderating competitive pressures by influencing 16 industry structure and competitors behavior. Thus, a resource based theory of the firm entails a knowledge based perspective.

2.4 Capital Structure theory

According to Kaguri (2013) pecking order refers to a hierarchy of financing beginning with retained earnings followed by debt financing and finally external fairness financing. The theory basically suggests that companies with high profitability may use less debt than other companies because they have less need to raise funds externally and because debt is the „cheapest‟ and most „attractive‟ external option when compared to other methods of capital raising.

Donaldson followed by Myer suggests that management follows a preference ordering when it comes to financing.

First, internal financing of investment opportunities is preferred because it avoids the outside scrutiny of suppliers of capital and also there no floatation costs associated with the use of retained earnings. Secondly, straight debt is preferred. Not only does debt result in less intrusion in management by suppliers of capital, but floatation costs are less than with other types of external financing. Also asymmetric information and financial signaling considerations come into play. The third in order of preference is preferred stock, which carries some features of debt. This is followed by various hybrid securities such as convertible bonds. Finally the least desirable security to issue is straight equity. The investors are the most intrusive, floatation costs are highest and there‟s likelihood to be an adverse signaling effect (Kaguri 2013).

2.5 Agency theory

Agency theory states that management and owners have different interests (Jensen and Mecklingas cited in Kaguri, 2013). According to this theory agency costs arise from conflicts of interest between shareholders and managers of the company. Agency costs are defined as the sum of monitoring costs incurred by the principal, bonding costs incurred by the agent, and residual loss.

Companies that separate the functions of management and ownership will be susceptible to agency conflicts (Lambert as cited in Kaguri 2013).They show that regardless of who makes the monitoring expenditures, the cost is borne by stake holders. Debt holders, anticipating monitoring costs, charge higher interest. The higher the probable monitoring costs, the higher the interest rate and the lower the value of the firm to its shareholders all other things being the same.

The variation of profit among insurance companies over the years in a given country would result to suggest that internal factors or firm specific factors play a crucial role in influencing their profitability and also it is generally agreed the influence of macroeconomic factor on insurance companies‟ profitability. It is therefore very important to identify what are these factors as it can facilitate management, government, investor and customer. To do so, it is better to see what factors were considered in previous times by different individuals. Lower agency costs are associated with better performances and thus higher firm values, all other things being equal.

2.6 Empirical literature review

Insurance profitability is influenced by both internal and external factors. Whereas internal factors focus on an insurer‟s specific characteristic, the external factors concern both industry features and macroeconomic variables. However, in most literatures, profitability with regard to insurance companies frequently expressed in as a function of internal determinants. Moreover internal determinants, in this research the researcher was included a set of macroeconomic determinants.

2.6.1 The determinants of firm specific factors on profitability

Studies dealing with internal determinants utilize variables such as Volume of capital, firm Size, liquidity, and leverage, tangibility of asset, loss ratio, and Managerial efficiency. The details of internal variable are discussed in this section.

I. Firm size

In many literatures, it has been suggested that company size is positively related to financial performance. For instance, B. Charumathi (2012) examined the factors determining the profitability of life insurers operating in India taking return on asset as dependent variable and the results of the study indicate that profitability of life insurers is positively and significantly influenced by size.

According to Almajali and et al (2012) conducts a study with the aim of investigating the factors that mostly affect financial performance of Jordanian Insurance Companies. Similarly the results showed a positive statistical effect of Size on the financial performance of Jordanian Insurance Companies. Malik (2011) also find significantly positive association between size of the company and profitability. In Sumaira and Amjad (2013) study also suggests size as significant determinants of profitability. Additionally, Gashaw (2012) and Daneiel and Tilahun (2013)in their study from the regression results identified size as most important determinant factors of profitability and it is positively related.

The main reasons behind this summarized as follows. First, large insurance companies normally have greater capacity for dealing with adverse market fluctuations than small insurance

companies. Second, large insurance companies usually can relatively easily recruit able employees with professional knowledge compared with small insurance companies. Third, large insurance companies have economies of scale in terms of the labor cost, which is the most significant production factor for delivering insurance services（Melese, 2014).

II. Liquidity

Liquidity from the context of insurance companies is the probability of an insurer to pay liabilities which include operating expenses and payments for losses/benefits under insurance policies, when due then shows us that more current assets are held and idle if the ratio becomes more which could be invested in profitable investments. For an insurer, cash flow (mainly premium and investment income) and liquidation of assets are the main sources of liquidity (Chen and Wong 2004).

According to Daneiel and Tilahun (2013) companies with more liquid assets are less likely to fail because they can realize cash even in very difficult situations. It is therefore, expected that insurance companies with more liquid assets will outperform those with less liquid assets.

Though, according to the theory of agency costs, high liquidity of assets could increase agency costs for owners because managers might take advantage of the benefits of liquid assets (Adamsand Buckle 2000). In addition, liquid assets imply high reinvestment risk since the proceeds from liquid assets would have to be reinvested after a relatively short period of time. Unquestionably, reinvestment risk would put injure on the profitability of a company. In this case, it is, therefore, likely that insurance companies with less liquid assets outperform those with more liquid assets.

Empirical evidences with regard to liquidity revealed almost inconsistent results. For instance, B.Charumathi (2012) examined the factors determining the profitability of life insurers operating in India taking return on asset as dependent variable. Their results indicate that profitability of life insurers is positively and significantly influenced by liquidity. Almajali and et al (2012) conducts a study with the aim of investigating the factors that mostly affect financial performance of Jordanian Insurance Companies and results showed that liquidity have a positive statistical effect on the financial performance of Jordanian Insurance Companies. Boadi and et al

(2013) study also find a positive relationship between liquidity and profitability of insurance firms in Ghana.

In Ethiopia, Abate (2012) reported negative but significant relation between liquidity ratios with profitability. On the other hand, the result of Daneiel and Tilahun (2013) and Sumaira and Amjad (2013) study revealed that liquidity has statistically insignificant relationship with ROA.

III. Leverage

The trade of theory suggests a positive relationship between profitability and leverage ratio and reasonable by taxes, agency costs and bankruptcy costs push more profitable firms towards higher leverage. Hence more profitable firms should prefer debt financing to get benefit from tax shield.

Naveed and et al (2011) examines the impact of firm level characteristics (size, leverage, tangibility, risk, growth, liquidity and age) on performance of listed life insurance companies" of Pakistan over seven years from 2001 to 2007. The results of Ordinary Least Square (OLS)regression analysis indicate, in addition to size and risk, leverage are important determinants of performance of insurance companies of Pakistan.

In the study of B. Charumathi (2012); Malik (2011) and Gashaw (2012) leverage have negatively and significantly influence the insurance companies profitability. But in the study of Almajali and et al (2012); Boadi and et al (2013) and Daneiel and Tilahun (2013) leverage have positively and significantly influence the insurance company profitability. While, the results of Olaosebikan (2012) study regard to leverage indicates that the profitability of micro-life insurers is not influenced by leverage.

IV. Tangibility of Asset

Tangibility has two conflicting effects on profitability. On the one hand, according to Himmelbergand et al. (1999) tangibility of asset has positive effect on profitability and they show that tangible assets are easily monitored and provide good collateral and thus they tend to mitigate agency conflicts between shareholders and creditors. On the other hand, tangibility of

asset may have a negative correlation, because firms with high levels of tangible assets tend to be less profitable.

Firms with high levels of intangible assets (in form of liquidity) have more investment opportunities in the long term, innovation and research and development (Deloof 2003, and Nucci and et al. 2005).

The general objective of the Boadi and et al (2013) study was to find out the determinants of the profitability of insurance firms in Ghana by using Secondary data on financial reports collected from 16 insurance firms in Ghana for the period 2005 to 2010. This study discovered negative relationship between tangibility and profitability.

V. Risk/ Loss Ratio

Most researches which investigate effect of risk on profitability have the same opinion with negative and significant effect of risk on profitability. Jian-Shen and et al (2006) provide evidence regarding the influence of capital structure and operational risk on profitability of life insurance industry in Taiwan. The finding shows that the operational risk exerts a negative and significant effect on profitability. Malik (2011) investigated firm specific factors (age of company, size of company, volume of capital, leverage ratio and loss ratio) determinants of profitability in insurance companies of Pakistan. Regarding to Loss ratio it also find negative but significant relationship with profitability. The results of Daneiel and Tilahun (2013) study also revealed that Loss ratio (risk) is important determinants of performance of insurance companies in Ethiopia and it has statistically significant and negatively related with ROA.

To improve annual operational performance by encouraging managers to increase cash flows through risk taking. On the other hand, excessive risk-taking could adversely affect the annual performance of insurers and reinsurance companies. Furthermore, higher annual insurance losses will tend to increase the level of corporate management expenses ex-post (e.g., claims investigation and loss adjustment costs) that could further exacerbate a decline in reported operational performance. In contrast, insurers and reinsurance companies with lower than expected annual losses are likely to have better operational performance because, for example, they do not incur such high monitoring and claims handling costs (Daniel and Tilahun 2013).

In the study of Derbali (2014) which examines the impact of firm-specific characteristics (size, leverage, tangibility, risk, growth, liquidity and age) on the performance of eight insurance companies in Tunisia a period of 8 years (2005-2012). In contrast to the above researchers it finds statistically insignificant relationship between risk and profitability.

VI. Managerial Efficiency

According to Almajali (2012) study aimed at investigating the factors that mostly affect financial performance of Jordanian Insurance Companies. The results showed that the Management competence index have a positive statistical effect on the financial performance of Jordanian Insurance Companies. The researcher recommended that there must be a significant need to have highly qualified employees in the top managerial staff. Alike to Almajali (2012), Negussie (2012) in his study empirical results shows that managerial efficiency have a strong influence on the profitability of private commercial banks in Ethiopia.

VII. Volume of Capital

In most of the studies concerning insurance companies‟ volume of capital measures as the difference between total assets and total liabilities and in some cases it is measured by the ratio of equity capital to total asset. Insurance companies‟ equity capital can be seen in two 21 ways. Narrowly, as stated by Uhomoibhi T. Aburime (2008), it can be seen as the amount contributed by the owners of an insurance (paid-up share capital) that gives them the right to enjoy all the future earnings. More comprehensively, it can be seen as the amount of owners‟ funds available to support a business. The later definition includes reserves, and is also termed as total shareholders‟ funds. No matter the definition adopted, volume of capital is widely used as one of the determinants of insurance companies‟ profitability since it indicates the financial strength of the firm. As it has been expected positive relationship between profitability and capital has been demonstrated by Athanasoglouet al. (2005).

Studies conducted in different countries found that for non-life insurance companies, size of capital is one of the important factors that affect ROA; Malik (2011) examined the relationship between volume capital and return on asset for Pakistan insurance industry and found positive and statistically significant relationship between insurance capital and profitability. Similarly

Hamadan Ahamed Ali Al-Shami (2008), found in his investigation that there exists a positive and significant relationship between volume of capital and profitability of the UAE insurance companies.

2.6.2 The Effects of Macroeconomics Variables on Profitability

- **Economic growth**

GDP is one of the primary macroeconomic indicators used to measure the health of the economy of a country, and it is a measure of the overall economic output within a country over a particular time, usually a year. Rao and Birkanu (2012) stated that GDP is one of the macroeconomic indicators used to measure the health of the economy of a country, and it is a measure of the overall economic output within a country‟s borders over a particular time, usually a year.

Vejzagic (2011) made analysis of macroeconomic determinants of commercial banks profitability in Malaysia and found that real GDP is significant and have positive relationship with Banks‟ profitability. Murungi (2014) GDP growth positively affects insurers profitability that is, growth of overall economic activity encourage demand for insurers services and indirectly result in higher insurers income. Kozak (2011) conclude that increases of the GDP growth positively impact profitability of non-life insurance companies during the integration period. Negussie (2012) study empirical results show that levels of GDP have a strong influence on the profitability of private commercial banks in Ethiopia. On the study of Tsehay (2012) also GDP has positive and significant effect on both asset return and interest margin of the bank.

2.7 Research gap to be filled by the study

For the reason that its importance in performance measurement financial industry‟s profitability has attracted scholarly attention in recent studies and there has been a growing number of studies recently that test for measures and determinants of insurance companies profitability. Liao and Chen (2006); Boadi and et al (2011); Malik (2011); Kozak (2011); Charumathi (2012); Al-Soub and et al (2012); Gashaw (2012); Olaosebikan (2012); Hussain (2012); Poposki and et al(2012); BoadiSumaira and Amjad (2013); Daneiel and Tilahun (2013); Chen-Ying Lee (2014);

Melese(2014); and Dejene (2015) are some of researchers who conduct about the determinants of insurance companies profitability in Ethiopia.

Likewise, as it can see in empirical evidences, most literatures focus on factors affecting profitability of banks rather than insurance companies. Therefore, there are fewer literatures concerning private insurance companies as compared to banks and most of them focus on firm specific factors. As per knowledge of the researcher there are few researches which considered the effects of macroeconomic factors on the profitability of insurance companies such as Kozak (2011);Hussain 2012; Poposki and et al (2012) and Chen-Ying Lee (2014). And also in Ethiopia it has received little attention.

Accordingly, this research includes both firm specific and macroeconomic factors of insurance companies" profitability, and adds literature on factors determining profitability of private insurance companies in Ethiopia.

2.8 Research hypothesis

In many quantitative studies, writers use research questions. However, a more formal statement of research employs hypotheses. These hypotheses are predictions about the outcome of the results, and they may be written as alternative hypotheses specifying the exact results to be expected. They also may be stated in the null form, indicating no expected difference or no relationship between groups on a dependent variable (Creswell 2009).

Therefore, in order to achieve the objective of the study, the following hypotheses were developed regarding the determinants of profitability in Ethiopian privet insurance companies based on different empirical research and theoretical reviewed.

H1. Leverage has a positive and significant effect on profitability of Ethiopian private insurance companies.

H2. Tangibility of assets of private insurance companies has negative and significant impact on their profitability.

H3. Liquidity ratio has a negative and significant impact on profitability of private insurance companies in Ethiopia.

H4. Volume of capital has a positive and significant impact on profitability of private insurance companies in Ethiopia.

H5. Managerial efficiency has positive and significant impact on profitability of private insurance companies in Ethiopia.

H6. Economic growth has positive and significant impact on profitability of private insurance companies in Ethiopia.

2.9 Conceptual Framework

Based on the related literature reviewed earlier, a conceptual framework for the determinant of private insurance companies" profitability is developed hereunder:-

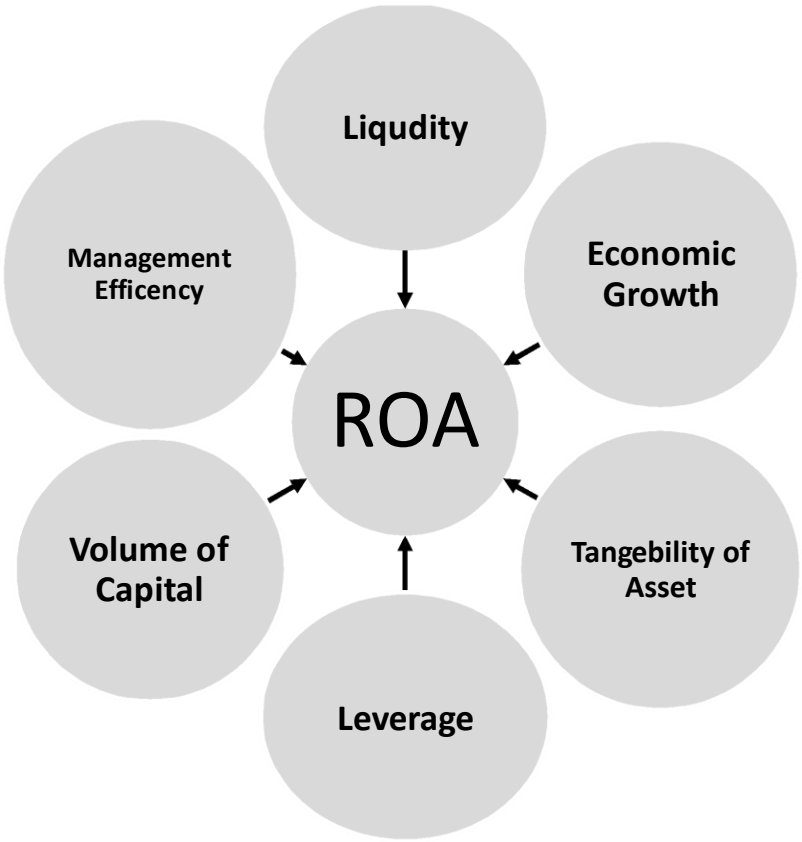


Figure 1: Conceptual Frame Work

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

This chapter provides the detail steps and procedures used to conduct the analysis of factors determining profitability of Private insurance companies in Ethiopia. It includes the approach adopted to examine the effect of main determinants on profitability, the type of data used and the techniques employed to collect the data, the sampling mechanism including sample size, the methods utilized to manage and analyze the data, and the process of constructing empirical model with identification and measurement of its components, measurement and selection of variables, expected relations between the dependent and independent variables. In addition to these the basic econometric assumptions were tested.

3.1 Research Approach

Creswell (2009) stated that the criteria for the selection of a research approach include consideration of a research problem and the philosophy of different research approaches. In this context, the study adopted a quantitative research approach. This study used panel secondary data for the period from 2007 to 2016. The six internal (firm level) and external factors were considered. These studies examine the previous findings in the literature and apply the model in private Ethiopian insurance companies. Therefore, the methodological approach that the researcher used in order to achieve the objective of this research was quantitative research method.

3.2 Research Design

Explanatory research design was applied for secondary source of data to be explaining the dependent variable and the six independent variables how to explain the model by using the R^2, adjusted R^2, F-statistics and P-value. Therefore to comply with the objective of this research, the paper is primarily based on explanatory research design, which constructed an econometric model to identify and measure the determinants of profitability (ROA).

3.3 Types of Data and data sources

To comply with the research objectives, the researcher focused on secondary data, which are obtained from financial statement of individual insurance companies and financial publication of National Bank of Ethiopia. And this is because the advantage of using secondary data includes the higher quality data compared with primary data collected by researchers themselves; the feasibility to conduct panel evidence, which is the case in this study; and the permanence of data, which means secondary data generally provide a source of data that is both permanent and available in a form that may be checked relatively easily by others.

The data collected and analyzed is a balanced panel of six selected private insurance companies in Ethiopia operating over the last ten years. Panel data selected by the researcher in order to meet the research objectives as it best fits better than the single time series or cross-sectional alone. Panel data analysis is a method of studying a particular subject within multiple sites, periodically observed over a defined time frame.

Brookes (2008) in his book clearly presents the advantage of using panel data in the following way. First, and perhaps most importantly, we can address a broader range of issues and tackle more complex problems with panel data than would be possible with pure time-series or pure cross-sectional data alone. Second, it is often of interest to examine how variables, or the relationships between them, change over time. To do this using panel data by combining cross-sectional and time series data, one can increase the number of degrees of freedom, and thus the power of the test, by employing information on the dynamic behavior of large number of entities at the same time and combining the data in this way can also help to mitigate problems of multi-co linearity that may arise if time series are modeled individually.

Third, structuring the model in an appropriate way, we can remove the impact of certain forms of omitted variables bias in regression results. Therefore the combination of time series with cross sections can enhance the quality and quantity of data in ways that would be impossible using only one of these two dimensions.

3.4 Sampling technique

To achieve the research objectives sampling was used so as to include six private insurance companies established and serving with in the specified period of time from June 2007 to June 2016. Ten years is assumed to be relevant because five years and above is the recommended length of data to use in most finance literatures (Abate 2012). By using judgmental Sampling technique the six private insurance companies was selected and out of ten independent variables six independent variables were selected.

The target populations of the study were six private insurance companies registered by NBE and under operation in Ethiopia, which are (Awash, Global, NIB, Africa, Nile and The United Insurance Company). Currently, sixteen Private insurance companies are working in Ethiopia. However for meaningful analysis, there was no need to sample from all private insurance companies, which are long & medium period of time played in the insurance industry compared to other private insurance companies and also closely related amount of capital. But, one government owned insurance company (Ethiopian Insurance Corporation) did not included in this study to avoid extreme variation of data and only focus on Private owned insurance companies. Accordingly, audited financial statements of ten consecutive years from 2007-2016 of each insurance companies included in the sample frame was considered (60 yearly observation).

3.5 Method of Data Analysis

Descriptive as well as Econometric methods were employed to discuss and analyze different issues in this study. Descriptive analysis is applying by using different types of tables and figures. An econometric analysis used to analyze the factors deterring private insurance profitability in Ethiopia based on a panel data from 2007-2016, in doing so Eviews9 software and stata12 were used. Using Eviews9 the basic OLS assumption were test, summary of descriptive statistics for basic variables also presented, seasonality, correlation analysis among basic variables also disclosed and detailed discussion of the regression was presented.

Besides, the panel character of the data collected allow for the use of panel data methodology. Panel data involves the pooling of observations on a cross-section of units over several time periods and provides results that are simply not detectable in pure cross-sections or pure time-series studies (Freeman 1984). The general form of the panel data model can be specified more compactly as:

$$Y_{t,i} = \alpha_i + \beta X_{i,t} + \varepsilon i,t$$

In this equation, $y_{t,i}$ represents the dependent variable, which is the firm‟s profitability and $\mathbf{x}_{i,t}$ contains the set of explanatory variables in the model. The subscripts i and t denote the cross-sectional and time-series dimension respectively. Also α_i is taken to be constant over time t and specific to the individual cross-sectional unit i. If α_i is taken to be the same across units, then Ordinary Least Square (OLS) provides a consistent and efficient estimate of α_i and **β.**

3.6 Multiple regression analysis

The Multiple regression analysis is used to examine the relationship between the profitability of private Ethiopian insurance companies and independent variables such, leverage, liquidity, tangibility of assets, managerial efficiency, economic growth and volume of capital. This method is used when independent variables are correlated with one another and with the dependent variable (Al-shami 2008). The result of a regression analysis is an equation that represents the best prediction of a dependent variable from several other independent variables.

The following regression equation is estimated as follow:

$$ROAi,t = \alpha + \beta_1 VOCi,t + \beta_2 LEVi,t + \beta_3 TOAi,t + \beta_4 LQi,t + \beta_5 MGEi,t + \beta_6 ECGi,t + \varepsilon i,t$$

Where:

- ROAi,t: the profitability in insurance company i at time t (dependent variable) in this study return on assets (The return on assets (ROA) defined as the insurance companies before tax profit over total assets) is used to measure profitability. The reason to preferred ROA rather than ROE is the selected companies by the researcher were closely related amount of asset and them plaid in the insurance class of business. While, ROE used to compare and contrast different business firms and different amount of asset.

- VOC: Volume of Capital;
- LEV: Leverage;
- TOA: Tangibility of assets;
- LQ: Liquidity;
- MGE: Managerial efficiency
- ECG: Economic growth
- β1…β6:coefficientofindependent variables
- ε is error term.
- i is insurance companies 1 to 6

In this model, all independent variables enter the regression equation at once to examine the relationship between the whole set of predictor and dependent variable. The aim of this analysis is to determine which independent variables are highly significant to determine the private insurance companies‟ profitability in Ethiopia.

3.7 Measurement of variable

According to Al-Shami (2008) there are three important measures of firm‟s performance that are profitability, size and survivorship. Profitability indicates the firm‟s ability to achievement of the rate of return on a company‟s assets and investment funds. With regard to size, it is a firm‟s ability to expand its size could be a reflection of it success as earnings are reinvested and external funding could be easily found. Whereas survivorship indicates the ability to earn sustainable development concerning competitive advantages beyond initial opportunities like an economic upturn or the early growth stage of an industry.

This research concerned only on profitability of Private insurance companies in Ethiopia as a financial performance and the internal and external factors that determine profitability. In line with earlier studies that examined the determinants of insurance companies‟ profitability, accounting ratios are used as measurement of individual variables. In order to select the determinants as independent variables in the model, previous studies are reviewed and this reviewed study suggests that the following six factors exert strong impact on insurance companies‟ profitability as internal and external determinants as a result they are adopted in the model. The following is the information of variables selected:

A. Profitability

There are many different ways to measure profitability, as shown in previous studies. In this study net income before tax to total assets (ROA) was used to measure profitability, because most of the studies regarding the subject used this ratio to determine the profitability of insurance companies.

- ROA=NIBT/TA

B. Volume of Capital

The volume of capital measures as the difference between natural logarithm of (total assets and total liabilities).

- VOC=Ln (TA-TL)

C. Leverage

Leverage is the amount of debt used to finance a company‟s assets. A company with significantly more debt than equity is considered to be highly leveraged. The leverage in this study was measured by total debt to total equity value of the company.

- LEV=TL(TD)/TA

D. Tangibility of asset

Tangibility is defined in respect to this study as the ratio of fixed assets to total assets. Tangibility=Fixed assets divided by total assets.

- TOA=FA/TA

E.Liquidity

Liquidity of the insurance companies in this study was measured by the ratio of current assets to current liabilities. Liquidity = Current Assets/Current Liabilities.

- LQ=CA/CL

F. Managerial efficiency

The ratio of operating expense to operating income was used to measure managerial efficiency and the higher the ratio the lower the managerial efficiency. Managerial efficiency= Operating Expense/ Operating Income

- MGE=OPE/OPI

G. Economic growth

The yearly real Gross Domestic Product (GDP) growth rate was used.

Table 1: Dependent, Explanatory variables and Expected signs

Variables	**Representation**	**Expected Signs**
Dependent Variable	ROA	
Explanatory Variables		
Volume of capital	VOC	Positive
Tangibility of Assets	TOA	Negative
Liquidity Ratio	LQ	Negative
Leverage	LEV	Positive
Managerial Efficiency	MGE	Positive
Economic growth	ECG	Positive
The error term	**ε**	

3.8 Diagnostic Tests

As stated in Brooks (2008) book there are six basic assumptions relating to classical linear regression model (CLRM). These assumptions are:

- Linearity: the regression model is linear in the parameters
- The average value of the errors is zero
- Assumption of homosckedasticity
- The covariance between the error terms over time or (cross-sectional) is zero, the errors are uncorrelated with one another
- The Xt are non-stochastic
- The disturbances are normally distributed

These assumptions are required to show that the estimation technique which is ordinary least square had a number of desirable properties; hence, hypothesis tests regarding the co-efficient estimates could validly be conducted. If these assumptions hold, then the estimators determined by ordinary least square will have a number of desirable properties, which are known as Best Linear Unbiased Estimates. Therefore, in this model, diagnostic tests are performed to ensure whether these assumptions of the CLRM are violated or not.

One issue that may arise from the use of panel data is whether the individual effect is considered to be fixed or random. On the one hand, while random effects estimation addresses the endogeneity issue by instrumenting potentially endogenous variables, it also assumes that the individual firm effects are uncorrelated with the exogenous variables. On the other hand, the fixed effect estimation deals successfully with the correlated effects problem, yet it fails to account for potential endogeneity of regressors. The Hausman‟s test was employed to select the appropriate method from the fixed effect model (FEM) and Random Effect Model (REM).

As it is mentioned above, for this study OLS were used. Therefore, before the regression was run tests for fulfillment of the basic Classical Linear Regression Model (CLRM) assumptions were tested. Consequently, the basic CLRM assumptions tested in this study were errors have zero mean, homoskedasity, autocorrelation, normality and multicollinearity. According to Brooks (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.

3.8.1 Assumption one: The Linear regression model

The regression model is linear in the parameters, as shown in the equation below;

$Yi = \beta 1 + \beta 2Xi + ui$

According to Gujarati (2004), Linearity in the parameters is relevant for the development of the regression theory to be presented shortly. Therefore, from now on the term “linear” regression

will always mean a regression that is linear in the parameters; the β‟s (that is, the parameters are raised to the first power only). It may or may not be linear in the explanatory variables, the X‟s.

3.8.2 Assumption two: the Errors have zero Mean.

According Brooks (2008) the first assumption holds true since a constant term is included in the regression equation. Since there is a constant term in this study, thus assumption will never be violated and there is no need to conduct the test.

3.8.3 Assumption three: Hetroskedasity

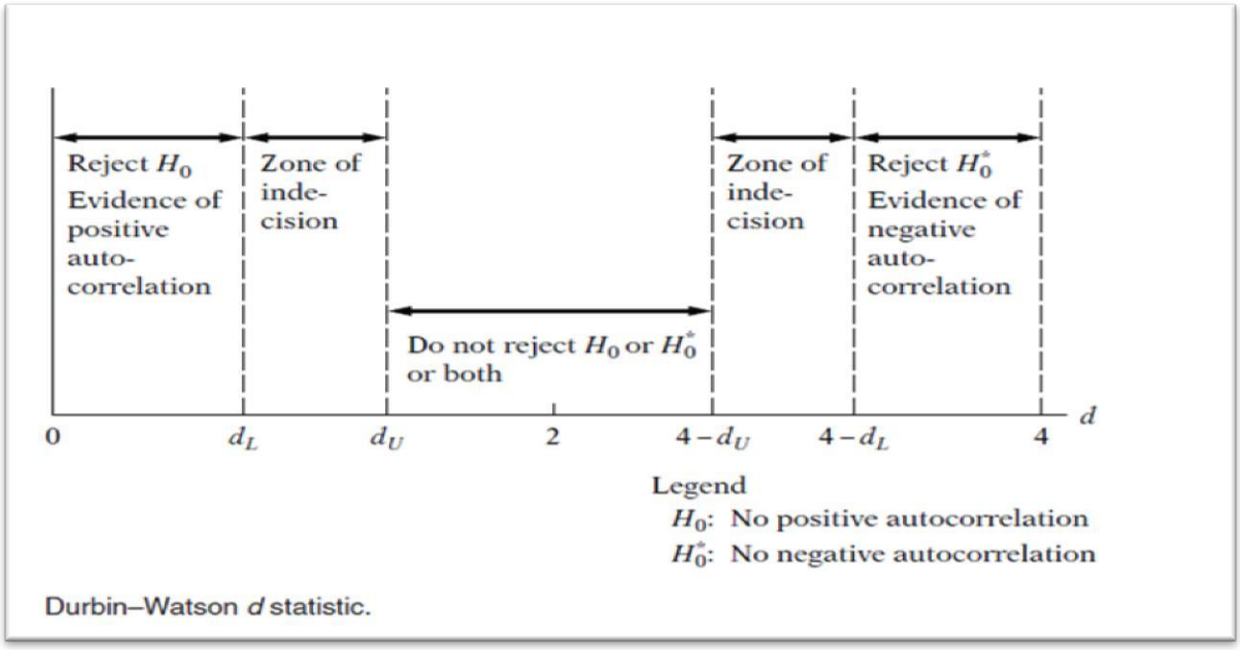
The assumption of homoscedasticity is that the variance of the errors is constant or equal. If the variance of the errors is not constant, this would be known as hetroscedacity (Gujarati, 2004 p.387). In order to test homoscedasticity the white test was used.

3.8.4 Assumption four: Autocorrelation

This assumption that the covariance between the errors terms over time is zero; it assumed that the errors are uncorrelated with one another. If the errors are not uncorrelated with one another, it would be stated that they are serially correlated. Usually, Durbin-Watson (DW) value in the main regression table is considered and used to test the presence of autocorrelation.

According to Brooks (2008), DW has 2 critical values: an upper critical value (dU) and a lower critical value (dL), and there is also an intermediate region where the null hypothesis of no autocorrelation can neither be rejected nor not rejected.

Figure 2: Rejection and Non-Rejection Regions for DW Test



Source: Gujarati (2004)

The rejection, non-rejection, and unconvincing regions are shown on the number line in figure 2. So, the null hypothesis is rejected and the existence of positive autocorrelation presumed if DW is less than the lower critical value; the null hypothesis is rejected and the existence of negative autocorrelation presumed if DW is greater than 4 minus the lower critical value; the null hypothesis is not rejected and no significant residual autocorrelation is presumed if DW is between the upper and 4 minus the upper limits; the null hypothesis is neither rejected nor not rejected if DW is between the lower and the upper limits, and between 4 minus the upper and 4 minus the lower limits.

3.8.5 Assumption five: Normality of the error distribution

According to Brooks (2008), that assumed the errors of prediction (differences between the obtained and predicted dependent variable scores) are normally distributed. Violation of this assumption can be detected by constructing a histogram of residuals.

3.8.6 Assumption six: Multicollinearity

The assumption refers to the situation in which the independent variables are highly correlated. When independent variables aremulticollinear, there is overlap or sharing of predictive power. This may lead to the paradoxical effect, whereby the regression model fit the data well, but none of the explanatory variables (individually) has a significant impact in predicting the dependent variable (Gujarati, 2004). A Pearson correlation is used for the purpose of testing multicollinearity in this study. The Pearson correlation matrix is a technique of testing multicollinearity of explanatory variables by investigating the relationship of bivariate variables (Wooldridge, 2006)

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATIONS

This chapter deals with the results of the study which include descriptive statistics of variables, correlation results for dependent and explanatory variables, diagnosis test for the regression models, and regression analysis for profitability measures, ROA. The data analysis was done by using E-views 9 software and stata12.

The study is conducted by using balanced panel data, in which all variables are observed for each cross section and each time period. The time covers ten years, from 2007 to 2016 and a cross section includes six private insurance companies which are operational for the past fifteen years. Besides, in this chapter diagnostic test is carried out to ensure that the data fits the basic assumptions of classical linear regression model.

4.1The regression is linear in the parameters

According to Gujarati (2004), since this part is concerned primarily with linear models it is essential to know what the term linearreally means, for it can be interpreted in two different ways.

Linearity in the Variables

The first and perhaps more "natural" meaning of linearity is that the conditional expectation of Y is a linear function of Xi, such as, for example, geometrically; the regression curve in this case is a straight line.

Linearity in the Parameters

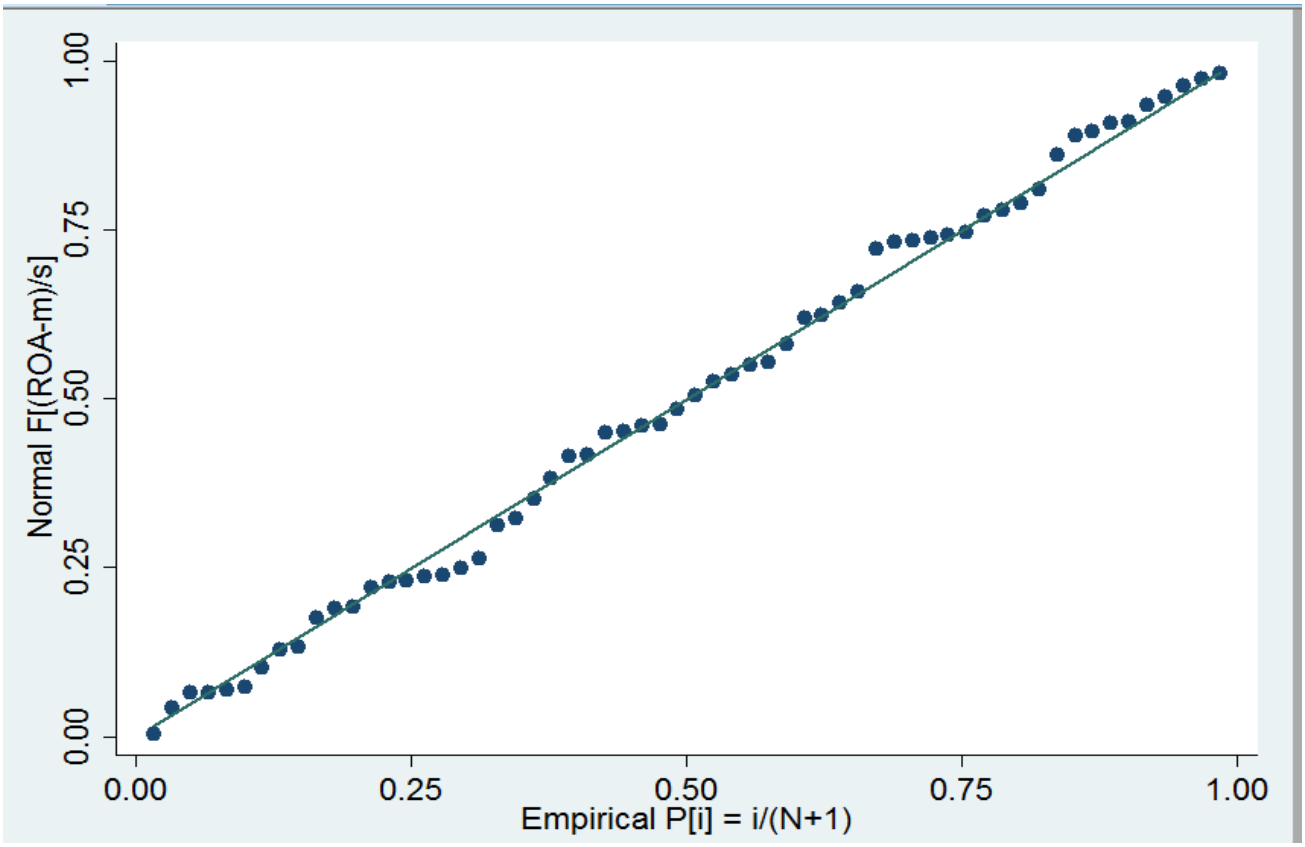
The second interpretation of linearity is that the conditional expectation of Y, $E(Y \mid Xi)$, is a linear function of the parameters, the β's; it may or may not be linear in the variable X. In this interpretation $E(Y \mid Xi) = \beta 1 + \beta 2X2i$ is a linear (in the parameter) regression model (Gujarati, 2004). From this study of analysis the linearity of the model selected by the researcher from observing the estimated equation after computing E-views9 software summarized as follows:-

$$Yi = \alpha + \beta 1Xi + \beta 2Xi + \beta 3Xi + \beta 4Xi + \beta 5Xi + \beta 6Xi + \varepsilon i$$

$ROAi = \alpha + \beta_1 VOCi + \beta_2 LEVi + \beta_3 TOAi + \beta_4 LQi + \beta_5 MGEi + \beta_6 ECGi + \varepsilon i$

Thus, from the above equation the assumption of linearity was secured and this is linear regression model**.** In addition to this both parameters (β"s) and the explanatory variables (X"s) are raised to the first power only. In addition to these the linearity test was presented on figure 3 below.

Figure 3 Linearity Graph



Source: Stata12 software out Put

4.2The errors have zero mean

- **(E (ε) = 0)**

According to Brooks (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.

4.3Tests of Heteroskedasticity

The assumption of homoscedasticity says that the variance of the errors is constant, Brooks (2008) if the errors do not have constant variance they are said to be heteroskedastic. In this study which is indicated below; the test result presented on table both F – statistics and Chi square showed that there is no evidence that there is heteroskedasticity because the result in the P value is more than 5%.

The test statistic, "Scaled Explained SS", which is based on a normalized version of the explained sum of squares from the auxiliary regression also gives the same result that there is no evidence for the presence of heteroskedasticity problem which is the result of the p-value is considerably greater than 0.05.

Table 2: Heteroscedasticity Test: White

F-statistic	1.784612	Prob. F(27,32)	0.0586
Obs*R-squared	36.05523	Prob. Chi-Square(27)	0.1141
Scaled explained SS	24.16316	Prob. Chi-Square(27)	0.6213

Source: E-views 9 software out Put

4.4Test for Auto correlation

The Durbin-Waston test statistic value in table 3 is 1.756 which is a result of 60 observations. There are 6regressors and an intercept term in the model, hence the relevant critical values for the test of 60 observation and 6 regressors are:-dL = 1.214,dU = 1.689, and 4 – du which is 4 – 1.689 = 2.311; 4 – dL which is 4 – 1.214 = 2.786.The result of Durbin Watson test statistic of 1.756 is between the upper limit (dU) which is 1.689 and the critical value of 4 – dU which is 2.311. Therefore, result falls under no auto-correlation range, which is within the non-rejection line of the number line which shows there is no evidence for the presence of autocorrelation.

Table 3: Test of auto correlation

R-squared	0.781270	Mean dependent var	0.084698
Adjusted R-squared	0.731144	S.D. dependent var	0.042502
S.E. of regression	0.022038	Akaike info criterion	-4.615273
Sum squared resid	0.023312	Schwarz criterion	-4.196404
Log likelihood	150.4582	Hannan-Quinn criter.	-4.451431
F-statistic	15.58625	Durbin-Watson stat	1.756357
Prob(F-statistic)	0.000000		

Source: E-views 9 software out Put

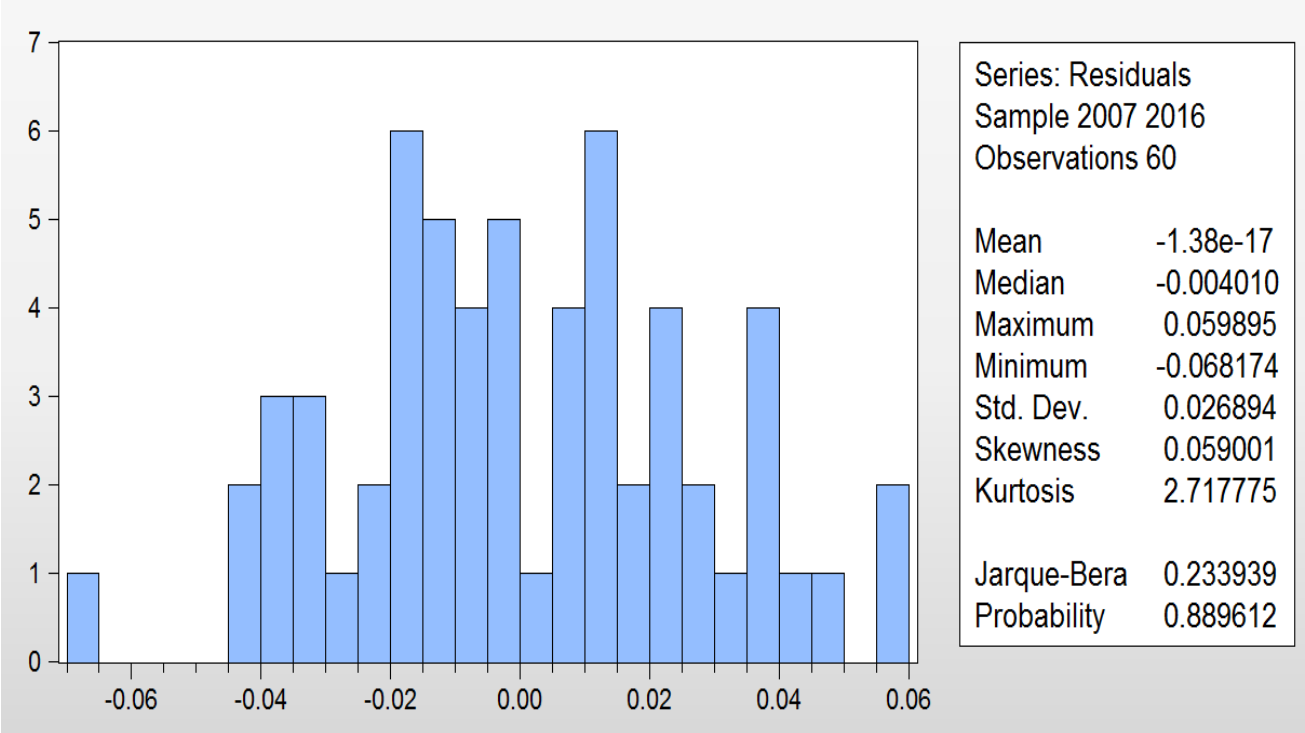
4.5 Tests for Normality

According to Brooks (2008), if the residuals are normally distributed, the histogram should be bell-shaped and the Bera-Jarque statistic would not be significant. This means that the p-value given at the bottom of the normality test screen should be greater than 0.05 to support the null hypothesis of presence of normal distribution at the 5 percent level.

From figure 4 residuals" graph observed that the value of skewness is 0.059 and the value kurtosis is 2.72. The result indicates that both skewness and kurtosis were approximately close to zero and three respectively.

The diagram shown below witnesses that normality assumption holds, i.e., the coefficient of kurtosis was close to 3, and the Bera-Jarque statistic has a P-value of 0.89 implying that the data were consistent with a normal distribution assumption. Also, it implies that the inferences made about the population parameters from the sample parameters tend to be valid.

Figure 4: Normality Test for Residuals



Source: E-views 9 software out Put

4.6 Test for Multicollinearity

Multicollinearity test is conducted to check whether the independent variables are correlated or not. According to Hailegiorgis (2011) a correlation is a single number that describes the degree of relationship between two variables. The standard statistical method for testing data for multicollinearity analyzes the control variables correlation coefficient; it represents the linear relationship between two variables. Bilal et al. (2013) before running the panel data models, it is essential to check the correlation between independent variables in order to confirm that there is no problem of multicollinearity.

If the correlation coefficient is low it indicates that there is no problem of multicollinearity. When there is a multicollineariarity problem it indicates that the estimates of the sample parameters become inefficient and entail large standard error which makes the coefficient values and signs unreliable.

In this study most of the independent variables had not multicoliniality problem, from the correlation matrix table shown each and every independent variable are not highly correlated

with each other. Thus, all correlation results are below 0.70, which indicates that multicollinearity is not a potential problem for this study. In general, all tests illustrated above were testimonials as to the employed model was not sensitive to the problems of violation of the Classical Linear Regression Model (CLRM) assumption.

Table 4: Correlation matrix

	VOC	TOA	ROA	MGE	LQ	LEV	ECG
VOC	1.000000	-0.152218	0.336202	-0.310167	-0.148883	-0.226098	-0.093412
TOA	-0.152218	1.000000	-0.220783	0.163317	-0.451890	0.298583	0.011370
ROA	0.336202	-0.220783	1.000000	-0.699675	0.417644	-0.057120	0.109772
MGE	-0.310167	0.163317	-0.699675	1.000000	-0.250245	0.017103	-0.032303
LQ	-0.148883	-0.451890	0.417644	-0.250245	1.000000	0.016034	0.078762
LEV	-0.226098	0.298583	-0.057120	0.017103	0.016034	1.000000	-0.011708
ECG	-0.093412	0.011370	0.109772	-0.032303	0.078762	-0.011708	1.000000

Source: E-views 9 software out Put

Table 4 provides the correlation matrix for the variables used in the analysis. As can be seen from the table, the result of correlation between volume of capital and profitability showed a positive coefficient 0.336. It indicates that if the volumes of capital increase it will have a positive impact and increase profit. The correlation result between liquidity and profitability showed a positive sign with a coefficient of 0.418. This indicates, if the insurance companies" liquidity or cash flow increases, the profitability also increases. Besides, leverage had a negative correlation with profitability with a coefficient of -0.057. This implies a decrease in leverage result increase in profitability.

Further there was positive correlation economic growth (GDP growth) and profitability and the coefficient was 0.1098. This shows that as economic growth goes up profitability also goes up. Meanwhile, the correlation result showed that negative relationship between tangibility of asset & managerial efficiency with profitability and the coefficient were -0.221 and -0.699 respectively. These indicate increase in tangibility of asset and managerial efficiency inversely affects profitability.

Generally, the correlation results showed economic growth, leverage and volume of capital have a positive relation with profitability. On the other hand profitability had negative relation with managerial efficiency, tangibility of asset and liquidity. The signs of correlation coefficients between the dependent variable and independent variables were commonly consistent with the hypotheses.

If the correlation coefficient is low it indicates that there is no problem of multicollinearity. When there is a multicollineariarity problem it indicates that the estimates of the sample parameters become inefficient and entail large standard error which makes the coefficient values and signs unreliable. An alternative method should be employed to check the presence of multicollinearity among independent variables.

Variance inflation factors (VIF) is one of the tools used to measure the degree of colinearity present for each factor. Gashayie (2013) indicates that multicollinearity is a violation that no independent variables are nearly or highly correlated, as a result high correlation among independent variables will makes hard to separate the effects of individual variables. Gujarati (1995), multicollinearity, is not considered a severe problem if the VIF value is less than ten. Therefore, after obtaining the correlated variables, the researcher further assessed the severity of multicollinearity as indicated above by evaluating the VIF values and the tolerance level.

Multi-collinearity is investigated using tolerance value and variance inflator facto (VIF) value. From the above table 4 it can be seen that tangibility of asset and liquidity have slightly coliniality but, less than .70 and smaller than 10 the value of VIF which is very good and their tolerance values were more than zero. This indicates that there is no multicollinearity problem. According to Shiu (2004) dropping one of the two highly correlated variables is a possible remedy for multicollinearity in the model. Thus, to eliminate coliniality problem between volume of capital and firm size; one of them must dropped by the researcher which is firm size. After dropping it the model was enhanced and the correlation between independent variables goes down from 0.94 to 0.45.

Table 5: Collinearity

Variable	VIF	1/VIF
LQ	1.49	0.671042
TOA	1.48	0.676110
VOC	1.30	0.770046
MGE	1.24	0.808261
Lev	1.17	0.856144
ECG	1.02	0.981607
Mean VIF	1.28	

Source: Stata12 out put

From the above table it can be seen that tolerance levels have increased and VIF values are less than 10, this indicates that the model is useful and there is free of collinearity because VIF=1.28 which is less than ten.

4.7 Descriptive Statistics

The result of statistical description of both dependent and explanatory variables of the study provides descriptive about statistical mean, maximum value, minimum value and standard deviation of each variables. This is generated to give overall description about data used in the model.

Table 6: Descriptive Statistics of the Variables

	VOC	TOA	ROA	LQ	MGE	LEV	ECG
Mean	18.24500	0.216717	0.084698	0.956150	0.508772	0.706700	7.315000
Median	18.23500	0.191500	0.084050	0.939500	0.456940	0.725000	7.360000
Maximum	19.54000	0.542000	0.173180	1.632000	1.096627	0.827000	12.41000
Minimum	16.76000	0.039000	-0.026528	0.263000	0.130515	0.479000	3.420000
Std. Dev.	0.738327	0.119642	0.042502	0.241440	0.196251	0.084039	2.459327
Observ.	60	60	60	60	60	60	60

Source: E-views 9 software out Put

With regarded to the explanatory variables, leverage is measured by debt ratio which is debt divided by total assets. The mean of leverage is 70.7%, with a maximum and minimum of 82.7% and 47.9% respectively, with the standard deviation of 0.084. On the other hand, the volume of capital of the private insurance companies are measured in natural logarithm of (total assets minus total liabilities), the result of the descriptive statistics after antilog the figure it shows that average value of volume of capital is 18.245 million with minimum of 16.760 million and maximum of 19.540 million, the standard deviation is 0.738 million, which indicates that there is a significant deviation in the study time period. Liquidity of private insurance companies has .956, maximum of 1.632 and minimum of 0.263 with the standard deviation of 0.241.

Concerning to managerial efficiency average value is 0.509, with maximum and minimum of 1.097 and 0.131 respectively, and its standard deviation of 0.196. From this one infers that the managerial efficiency was vary from firm to firm, which means some of them were highly efficient and some of them poorly efficient. Thus, managerial efficiency is the major impact on the profitability of private insurance companies.

The descriptive statistics also displayed that tangibility has a mean of 0.22 this indicates that on average 22 percent of the firms" assets are fixed this occurs due to the industry is in emerging stage, and tangibility has a maximum 0.542 and a minimum of 0.039 with a standard deviation of 0.12. Firms in developing countries rely on high asset tangibility for debt financing, but in this study the asset tangibility ratio is low. It is against the capital structure theories which states that firms with high asset tangibility should have greater borrowing capacity.

With regard to the external factor such as, The GDP (economic growth) shows that the average GDP growth is 7.32 % with a maximum of 12.41% and a minimum of 3.42% with a standard deviation of 2.46 for the study period which indicated the economic growth in Ethiopia during this period is seems to be stable, but there is some fluctuation due to different reasons like; climate change, internal and external factors of the country. In general this GDP result matches with the government report and indicates that there is a potential for the insurance industry.

From the above table provides a summary of the descriptive statistics of the dependent and independent variables for ten year from 2007 to 2016 for six private insurance companies with a total 60 observations. The descriptive statistic result includes the mean, median, minimum, maximum and standard deviation for the dependent and independent variables of the model. It is the indicators of variables computed from the financial statement. As stated in the above table 6, profitability of private insurance companies in Ethiopia is measured by ROA, then from the total of 60 observations the insurance companies achieved on average a positive before tax profit for the last ten years. Regarding the total sample, the mean of ROA is 8.5% with a minimum of -2.7% and a maximum of 17.3%. This indicates that the most profitable insurance company in the selected sample companies earned 17.3 cents of profit before tax for a single birr invested in the assets of the firms. The maximum loss a firm incurred is 2.7 cents on each birr invested on total asset of private insurance companies. The standard deviation statistics for ROA is 0.043 indicating that the profit variation between the selected insurance is slightly moderate which indicates that the data points are tend to be close to the mean.

4.8 Result of the regression analysis

As indicated above test of assumptions have been conducted by using different techniques, this can assure the researcher that the data used is free of any problem. Thus, the researcher employs multiple regressions to predict the magnitude of each explanatory variables impact on the dependent variable. Based on the result, this section presents the empirical findings from the economic results on the factors determining private insurance companies" profitability in Ethiopia. The section covers the empirical regression model used in this study and the results of the regression analysis. As the estimation result of the operational panel regression model used in this study is presented in the next table below, the detail explanation would be presented in this section.

4.8.1 Empirical model

As presented earlier the empirical model used in the study in order to identify the factors that can affect Ethiopian private insurance companies" profitability which is presented by one dependent variable and six independent variables:

$$ROA_{i,t} = \alpha + \beta_1 VOC_{i,t} + \beta_2 LEV_{i,t} + \beta_3 TOA_{i,t} + \beta_4 LQ_{i,t} + \beta_5 MGE_{i,t} + \beta_6 ECG_{i,t} + \varepsilon_{i,t}$$

4.9 Choosing Random versus Fixed Effect Models (FEM)

According to Gujarati (2004), if T which is the number of time series data is larger and N which is the number of cross-section units is small, there is likely to be little difference in the values of the parameters estimated by fixed effect model (FEM) and random effect model (REM). Hence, the choice is based on computational convenience. In this study the number of time series which is 10 years which is greater than the number of crosses sectional units which are 6 insurance companies. Besides, according to Brooks (2008) if samples are selected randomly it is more appropriate to use REM, and when the entities in the sample effectively constitute the entire population/sample frame, FEM is more appropriate. Therefore, as mentioned above the sample for this study was not selected randomly hence; fixed effect model is preferable in this regard.

Table 7: Regression result-Fixed Effect Model

Dependent Variable: ROA
Method: Panel Least Squares
Date: 05/22/17 Time: 08:09
Total panel (balanced) observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.049539	0.113286	-0.437293	0.6639
**VOC	0.011182	0.005093	2.195717	0.0330
*TOA	-0.110792	0.057358	-1.931599	0.0593
***MGE	-0.158027	0.019893	-7.943675	0.0000
LQ	-0.043996	0.028998	-1.517177	0.1358
LEV	0.085343	0.061280	1.392670	0.1701
*ECG	0.002239	0.001206	1.857050	0.0694

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.781270	Durbin-Watson stat	1.756357
Adjusted R-squared	0.731144		
F-statistic	15.58625		
Prob(F-statistic)	0.000000		

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

Source: E-views 9 software out Put

In table 7 the above reports regression results between the dependent variable ROA (profitability) and explanatory variables. The R-squared value measures how well the regression model explains the actual variations in the dependent variable (Brooks, 2008). The adjusted R^2 value in table 7 above indicates that 73.11% of the total variability of profitability of private insurance companies was explained by the variables in the model. The regression F-statistic (15.59) and the p-value of zero attached to the test statistic tell that the null hypothesis that all of the coefficients are jointly zero should be rejected. Thus, it implies that the independent variables in the model were able to explain variations in the dependent variable.

From the explanatory variables, volume of capital had positive and statistically significant relation with profitability at 5 percent significance level. Economic growth had also positive relationship with profitability at 10 percent significance level. In the same way managerial efficiency and tangibility of asset, were found to be negatively related with profitability at 1and 5 percent significance level respectively. In addition liquidity was found being statistically insignificant and negative related with profitability. Finally; leverage had a positive relation with ROA (profitability), but it was statically insignificant.

Generally the explanatory variables were 78.13% explain the dependent variable and out of six independent variables most of them statistically significant. These result good sound for the estimated model which is selected by the researcher.

4.10 Major findings

This section presents over all the empirical results of the regressions. To examine the relationship between ROA and independent variables regression analysis was undertaken. This regression model was applied:

$$ROA = -0.049539 + 0.011182VOC + 0.085343LEV - 0.110792TOA - 0.043996LQ - 0.158027MGE + 0.002239ECG + \varepsilon$$

In the following table coefficients, standard errors, t-values, and p-values for explanatory variables, and R-squared, Adjusted R-squared, Standard Error of regression, F-statistic, Prob (F-statistic) for the regression, and number of observations included in the study are presented.

Adjusted R-squared is measured the goodness of fit of the independent variables in explaining the variations in private insurance companies profitability measure ROA. As clearly described in Table 7 Adjusted R-squared value for the regression model was 0.73. This indicates the independent variables in this study jointly explain about 73 percent of the variation in the profitability of private insurance companies" measured, ROA. The remaining 27 percent of the variation in the profitability of insurance companies explained by other variables which are not included in the model this research.

Therefore, these independent variables together, are good independent variables of the profitability of private insurance companies in Ethiopia. Beside this F-statistics (15.59) which is the used to measure the overall test of significance of the model was presented, and null hypothesis can be clearly rejected since the p-value is 0.0000 which is adequately low, the model is well fitted at 1percent level of significance.

A. Volume of capital

With regression coefficient of 0.01118, t-statistics of 2.196andp-value of 0.0330 the regression results of the study show that there is a statistically significant and positive relationship between volume of capital and private insurance companies" profitability in Ethiopia. It is consistence with the hypothesis of the study at 5% significant level.

As the volume of capital increases, the capability of insurance companies" to involve in a wider variety of business also increases. Gashaw (2012) stated that insurance companies" equity capital can be seen in two ways, one it can be seen as the amount contributed by owners of an insurance (paid-up share capital) that gives them the right to enjoy all the future returns, in other way it can be seen as the amount of owners" funds available to support a business.

There are studies conducted by including volume of capital as a determinant of profitability of insurance companies and the outcome is controversial, Malik (2011) from Pakistan and

Sambasivam and Gashaw (2013) from Ethiopia conducted a research to get major factors affecting the profitability of insurance companies by including volume of capital and get positive and significant relationship between volume of capital and profitability of insurance companies.

B. Leverage

With a regression coefficient of 0.08534, t-statistics of 1.39267 and p-value of 0.1701 the regression results of the study show that there is a statistically insignificant and positive relationship between leverage ratio of private insurance companies and their profitability in Ethiopia. However, the results are not reliable with the hypothesis of the study. Literatures in capital structure confirm that a firm‟s value will goes up to optimum point as leverage goes up and then declines if leverage is further increased beyond that optimum level. Most previous studies with regard to leverage also found statistically significant relationship but negative. For instance, in the study of Malik (2011); B. Charumathi (2012); and Abate Gashaw (2012) leverage have negatively and significantly influence on insurance company profitability. In addition to Naveed and et al (2011) study several studies have been conducted to examine the effect of leverage on firm profitability.

C. Tangibility of Assets

The regression results relating to tangibility of assets show that there is negative and statistically significant relationship between tangibility of assets and profitability of private insurance companies in Ethiopia at 10% significant level. The regression coefficient is -0.1108, t-statistics -1.932 and p-value of 0.0330. The result is 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 profitability is similar with empirical evidences by Daneiel and Tilahun (2013) in Ethiopia, but negative relationship.

On the other hand, tangibility of asset may have a negative correlation, because firms with high levels of tangible assets tend to be less profitable. Firms with high levels of intangible assets (in form of liquidity) have more investment opportunities in the long term, innovation and research and development (Deloof 2003, Nucciand et al. 2005).

D. Liquidity

The results of the fixed effect regression regarding liquidity show that there is no significant relationship between liquidity ratio of private insurance companies and their profitability in Ethiopia. As shown above in table, the regression coefficient of liquidity is -0.043996 with a t-statistics of – 1.5172 and significance value of 0.1358. Thus from the results it can be conclude that there exists no relationship between liquidity and profitability of private insurance companies in Ethiopia. Hence this result is not consistent with the hypothesis of the study. The result is similar with the finding of Daneiel and Tilahun (2013) and Sumaira and Amjad (2013) study which revealed that liquidity has statistically insignificant relationship with ROA. Although the results show no statistical significance between these variables, it can be concluded that the liquidity ratio of a firm still explains the variation in profitability of insurance companies negatively.

E. Managerial Efficiency

Managerial efficiency as measured by the ratio of operating expense to operating income is statistically significant at 1 percent significant level with ROA. Which means management of operating expenses to income, have great contribution to improve profitability of insurance companies in Ethiopia. The regression coefficient is -0.158, t-statistics -7.944 and p-value of 0.0000. For this reason, the results are somehow reliable with the hypothesis of the study, but negative relationship.

F. Economic Growth

Concerning to economic growths rate of the country has significant effect on profitability of private insurance companies in Ethiopia. As shown above in the regression result, the regression coefficient, t-statistics and significance value of economic growth is 0.002239, 1.857 and 0.0694 respectively. Thus from the results it can be concluded that there exists positive relationship between economic growth and profitability of privet insurance companies in Ethiopia. It is consistence with the hypothesis of the study. Some indicated that economic growth has significant relationship with insurance company"s profitability with positive effect.

Theoretically GDP has positive and significant influence on profitability of insurance companies. Murungi (2014), GDP growth positively affects insurers profitability that is, growth of overall economic activity encourages demand for insurers services and indirectly result in higher

insurers income. Lee (2014) conducted a research to find factors affecting profitability of property-Liability insurance industry in Taiwan by using operating ratio and ROA as a dependent variable, and found only on the operating ratio model positive and significant relationship between GDP growth and firms‟ profitability.

For instance Vong and Chan (2005); Poposki and et al (2012); Hussain (2012); Negussie (2012); and Tsehay (2012) suggested economic growth as important factors that determine insurance companies‟ profitability and those have positive effect on insurance companies‟ profitability.

- The regression coefficient of volume of capital at 0.011182 indicates that when volume of capital increases by 1% the ROA will increase by 1.12%.
- Regression coefficient of economic growth at 0.002239 indicates that when economic growth increase by 1% the ROA will increase by 0.224%.
- Regression results of tangibility of asset at -0.110792 indicate that when tangibility of asset decreases by 1% ROA will also increase by 11.1%.
- The regression coefficient of managerial efficiency at -0.158 indicates that when managerial efficiency increases by1% the ROA will decrease by 15.8%.

Generally in this study show that the main internal and macroeconomic factors determining private insurance companies in Ethiopia like; volume of capital, tangibility of asset, managerial efficiency and GDP (economic) growth.

Almost all econometric assumption were not violated by the fixed effect model and out of six explanatory variables most of them statistically significant.

The variation inflation factor, R^2, adjusted R^2, p-value and prob(F-static) were good and explained the model selected by the researcher.

Table 8: Summary of actual & expected signs of independent variables on the Dependent variable

Independent Variables	**Expected Result**	**Actual Result**
Volume of Capital	Positive and Significant	Positive and Significant
Liquidity	Negative and Significant	Negative and insignificant
Leverage	Positive and Significant	Positive and insignificant
Tangibility of Asset	Negative and Significant	Negative and Significant
Management Efficiency	Positive and Significant	Negative and Significant
Economic Growth	Positive and Significant	Positive and Significant

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

This study has investigated the major factors affecting private insurance companies‟ profitability by utilize multiple regressions to predict the magnitude of each explanatory variables impact on the dependent variable. The appropriate econometric methodology for estimation of variables coefficient is engaged under fixed effect regression model. Efficient financial system contributes for sustainable economic growth of a given country. Thus, in order to convey this efficiency, researches should be conducted in an orderly manner by incorporating up to date information to assist managements to focus on relevant issues. This study specified an empirical framework to investigate the effect of firm specific and macroeconomic determinants of Ethiopian private insurance companies‟ profitability during the last 10 years, from 2007 to 2016.

This chapter presents; summary of findings, concluding explanation of the study and possible recommendations for practice and suggestions for further research.

5.1Summary of Findings

- Volume of capital and managerial efficiency are major determinants of private insurance profitability in Ethiopia.
- Volume of capital and economic growth are positive relationship with ROA and statistically significant independent variables.
- Tangibility of asset and managerial efficiency were negative relationship with the dependent variable and statistical significant.
- Leverage was positive relationship with ROA and statistically insignificant relationship.
- Liquidity was negative relationship with the dependent variable and statistically insignificant relationship.
- Fixed Effect Model was an appropriate model for the study
- The R^2 adjusted R^2; p-values were good indicators of the model and explained the dependent variables by 78.1%.
- The variance inflation factor was 1.28 and their tolerances values were greater than zero, this indicates that there is no Correlation problem in the model.

5.2 Conclusion

As depicted to the regression results, internal and macroeconomic determinants were able to explain a substantial part of private insurance companies‟ profitability in Ethiopia.ROA was used as a proxy for profitability; the study is designed to determine the relationship between profitability of insurance companies and the selected internal as well as external (macroeconomic) factors. As internal factors, leverage, liquidity, volume of capital, tangibility of assets, was used and as external factor, GDP growth was used as explanatory variables in the study.

The study revealed that the selected variables explained 78.1% of the variability in ROA of private insurance companies in Ethiopia. The empirical findings on the impact of private insurers‟ profitability in Ethiopia for the sample suggest the following conclusions.

The result of leverage showed a positive and statistically insignificant relationship with profitability which is not as an expected result. The leverage ratio level of the insurance companies‟ affects their profitability positively but, statistically insignificant. This result was not supports the hypothesis formulated for the study.

Regarding volume of capital, the regression result indicates a positive and significant impact on Ethiopian private insurance companies‟ profitability. This means, the increase in volume of capital contributes to firms‟ profitability. This indicates that the higher underwriting premium will increase the profitability of the existing insurance industry onwards in terms of premium income, new business policies; number of offices, agents, products highly contributes to the profitability of private insurance companies in Ethiopia. This positive relationship encourages insurers to keep on increasing their premium, and this result will increase their profitability.

The result of tangibility showed negative and significant relationship with private insurance companies‟ profitability. The negative coefficient of tangibility showed that when tangibility of assets increases, profitability decreases. This inverse relationship indicates that a percentage change in tangibility will have significant impact on privet insurance companies‟ profitability. Therefore, this indicates that insurers with high fixed assets to total assets leads lower

performance; as a result during this sample period insurers were not able to utilize their fixed assets.

From the external factor which is macroeconomic factor (GDP), positive and significant impact on return on asset (ROA). This study also found that, liquidity and leverage not to be statistically significant in influencing profitability of private insurance companies in Ethiopia.

According to Gujarati (2004), Panel regression models are based on panel data. Panel data consist of observations on the same cross-sectional, or individual, units over several time periods.

- There are several advantages to using panel data. First, they increase the sample size considerably. Second, by studying repeated cross-section observations, panel data are better suited to study the dynamics of change. Third, panel data enable us to study more complicated behavioral models.

- Despite their substantial advantages, panel data pose several estimation and inference problems. Since such data involve both cross-section and time dimensions, problems that plague cross-sectional data (e.g., heteroscedasticity) and time series data (e.g., autocorrelation) need to addressed.

- There are several estimation techniques to address one or more of these problems. The two most prominent are (1) the fixed effects model (FEM) and (2) the random effects model (REM) or error components model (ECM).

- In FEM the intercept in the regression model is allowed to differ among individuals in recognition of the fact each individual, or cross-sectional, unit may have some special characteristics of its own. To take into account the differing intercepts, one can use dummy variables. The FEM using dummy variables is known as the least-squares dummy variable (LSDV) model. FEM is appropriate in situations where the individual specific intercept may be correlated with one or more repressors.

5.3 Recommendations

Based on the result of analysis conducted in the previous chapter and the above conclusions, the following possible recommendations have been forwarded to the top managements, The National Bank of Ethiopia and the stakeholders which help them to focus on the most important determinant of profitability.

As it is indicated in this research supports that the development of the insurance sector is not as such as expected. From the descriptive statistics result of this study indicates the mean of ROA is 8.5%, 2.7% of minimum value and maximum of 17.3%. Therefore, the profit is not attractive like banks and other sectors. Besides, the range of insurance product offered by the insurer is limited, that indicates the industry is still at the early stage of development.

Hence, The National Bank of Ethiopia, the insurance company's management and investors should focus on how they increase the growth of insurance business which factors significantly determines the profitability.

The researcher tried to include the loss ratio of each selected private insurances companies; however, the regulatory body willing to disclosed only the industry loss ratio. Although, the data was not indicated the real loss experience of each private insurance companies. Due to variation of rate from firm to firm the researcher drops the data from the model.

In addition to this, the result also supports the insurance companies' to use the resources efficiently to finance their business; highly leveraged companies are less profitable. Therefore, care must be taken in order not to exceed the optimal capital structure which is allowed by the regulatory body.

Insurance companies need to work on providing up to date products offer by including agriculture insurance coverage, chattel insurance and macro- insurance coverage to the society in order to attract the customer. On the other hand, insurance companies during setting of the premium, they should incorporate the effect of economic growth in order to avoid the macro economic impacts.

Finally, the study sought to identify the factors that determining profitability of private insurance companies' in Ethiopia. However, the variables used in the statistical analysis omit some determinants that can affect the private insurance profitability but, to avoid multicollineariarity problem between those of few omitted variables and volume of capital. Hence, the researcher urges scholars to do further investigation to assist the private insurance industry profitability in Ethiopia.

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APPENDICES

Appendix 1: regression analysis-Fixed Effect Model

Dependent Variable: ROA
Method: Panel Least Squares
Date: 05/20/17 Time: 11:26
Sample: 2007 2016
Periods included: 10
Cross-sections included: 6
Total panel (balanced) observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.049539	0.113286	-0.437293	0.6639
VOC	0.011182	0.005093	2.195717	0.0330
TOA	-0.110792	0.057358	-1.931599	0.0593
LQ	-0.043996	0.028998	-1.517177	0.1358
LEV	0.085343	0.061280	1.392670	0.1701
ECG	0.002239	0.001206	1.857050	0.0694
MGE	-0.158027	0.019893	-7.943675	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.781270	Mean dependent var	0.084698
Adjusted R-squared	0.731144	S.D. dependent var	0.042502
S.E. of regression	0.022038	Akaike info criterion	-4.615273
Sum squared resid	0.023312	Schwarz criterion	-4.196404
Log likelihood	150.4582	Hannan-Quinn criter.	-4.451431
F-statistic	15.58625	Durbin-Watson stat	1.756357
Prob(F-statistic)	0.000000		

Appendix 2: regression analysis-Estimation Results

Estimation Command:

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LS(CX=F) ROA C VOC TOA LQ LEV MGE ECG

Estimation Equation:

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ROA = C(1) + C(2)*VOC + C(3)*TOA + C(4)*LQ + C(5)*LEV + C(6)*MGE + C(7)*ECG + [CX=F]

Substituted Coefficients:

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ROA = -0.0495391925793 + 0.0111824714925*VOC - 0.110791839454*TOA - 0.0439958224207*LQ + 0.0853433302495*LEV - 0.158026728918*MGE + 0.00223892200847*ECG + [CX=F]

Appendix 3: Heteroskedasticity Test: White

Heteroskedasticity Test: White

F-statistic	1.784612	Prob. F(27,32)	0.0586
Obs*R-squared	36.05523	Prob. Chi-Square(27)	0.1141
Scaled explained SS	24.16316	Prob. Chi-Square(27)	0.6213

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 05/28/17 Time: 07:09
Sample: 1 60
Included observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.046125	0.194033	0.237715	0.8136
VOC^2	0.000183	0.000537	0.341240	0.7352
VOC*TOA	0.001256	0.002847	0.441029	0.6622
VOC*LQ	-0.000741	0.001718	-0.431455	0.6690
VOC*LEV	-0.003723	0.002633	-1.414253	0.1669
VOC*ECG	2.42E-05	0.000104	0.232911	0.8173
VOC*MGE	0.002839	0.001495	1.899143	0.0666
VOC	-0.005522	0.020407	-0.270597	0.7884
TOA^2	-0.007061	0.016596	-0.425429	0.6734
TOA*LQ	0.006769	0.013976	0.484358	0.6314
TOA*LEV	-0.038552	0.037976	-1.015157	0.3176
TOA*ECG	-0.000165	0.000784	-0.210261	0.8348
TOA*MGE	-0.002821	0.008435	-0.334472	0.7402
TOA	0.006164	0.078558	0.078462	0.9379
LQ^2	-0.000101	0.003529	-0.028736	0.9773
LQ*LEV	-0.008005	0.011026	-0.726000	0.4731
LQ*ECG	-7.90E-05	0.000222	-0.355873	0.7243
LQ*MGE	0.000261	0.005415	0.048123	0.9619
LQ	0.019444	0.040789	0.476690	0.6368
LEV^2	0.022967	0.021494	1.068510	0.2933
LEV*ECG	0.000351	0.000811	0.433010	0.6679
LEV*MGE	0.007925	0.015182	0.521958	0.6053
LEV	0.044518	0.066608	0.668353	0.5087
ECG^2	-3.08E-05	3.82E-05	-0.806132	0.4261
ECG*MGE	0.000464	0.000427	1.086277	0.2855
ECG	-0.000275	0.002451	-0.112394	0.9112
MGE^2	0.007071	0.003467	2.039392	0.0497
MGE	-0.069366	0.037014	-1.874024	0.0701

R-squared	0.600921	Mean dependent var	0.000711
Adjusted R-squared	0.264197	S.D. dependent var	0.000940
S.E. of regression	0.000806	Akaike info criterion	-11.10339
Sum squared resid	2.08E-05	Schwarz criterion	-10.12603
Log likelihood	361.1018	Hannan-Quinn criter.	-10.72109
F-statistic	1.784612	Durbin-Watson stat	2.264873
Prob(F-statistic)	0.058622		