FINANCIAL PERFORMANCE OF INSURANCE INDUSTRY IN ETHIOPIA

THESIS SUBMITTED TO POSTGRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS OF THE DEGREE OF MASTERS OF SCIENCE IN ACCOUNTING AND FINANCE

By: Demis H/Gebreal

JIMMA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF ACCOUNTING AND FINANCE

Msc IN ACCOUNTING AND FINANCE

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Declaration

I, the under signed, declared that this thesis is my original work and has not been presented for a degree in any other university, and that all sources of materials used for this research are duly acknowledged.

Name: Demis H/Gebreal

Signature:_____

Date : _____

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By: *Demis H/Gebreal*

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Abstract

There have not been empirical studies that address the financial performance of Ethiopian insurance companies in Ethiopia. This study was undertaken to evaluate the financial performance of non-life insurance industry in Ethiopia by using CARAMEL frame work. The researcher selected 10 insurance companies from the total of 15 based on their year of establishment. Secondary data collected from the individual insurance companies and from the National Bank of Ethiopia from the fiscal year of 2008 to 2012 was used for the completion of the study. The model employed for this study is $ROA=\alpha+\beta_1 KTAit+\beta_2 ONETA1it+\beta_3 Rit+\beta_4 Ait+\beta_5 MEit+\beta_6 EPR_3it+\beta_7 LRit+\varepsilon$. ROA has been used as the dependent variable explained by capital adequacy, assets quality, re-insurance, actuarial issues, management efficiency, earning and profitability and liquidity. Multiple linear regression was applied. From the multiple linear regression, it was found that assets quality and combined ratio have negative relationship whereas capital adequacy and retention ratio have positive relationship with performance (ROA) of insurance industry in Ethiopia. One of the objectives of the study is that to identify the major factors that affect the financial performance of insurance industry in Ethiopia and it was found from the regression result that the major factors are capital adequacy, assets quality, re-insurance and combined ratio. The researcher recommended that the management and regulators of Insurance companies in Ethiopia should give due attention on capital adequacy and set minimum requirement for the capital adequacy of insurance industry, assets quality and re-insurance.

Key words*: Financial performance, Nonlife insurance, CARAMEL frame work*

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Acronyms

AFIC	Africa Insurance Company
AIC	Awash Insurance Company
CACL	current assets to current liability
COMR	Combined Ratio
EEA	Ethiopian Economic Association
EIC	Ethiopian Insurance Corporation
GIC	Global Insurance Company
KTA	Capital to Total Assets
LIC	Lion Insurance Company
NBE	National Bank of Ethiopia
NIB	Nib Insurance Company
NIC	Nile Insurance Company
NICE	National Insurance Company of Ethiopia
NPGP	Net Premium to Gross premium
NTRNC	Net Technical Reserve to Net Claim
NYIC	Nyala Insurance Company
OEGP	Operating Expense to Gross premium
ONETA	Owners' Equity to Total assets
ROA	Return on Assets
UNIC	United Insurance Company
VIF	Variance Inflation Factor

CHAPTER ONE

Introduction

1.1 Background of the study

People need protection. A sense of protection or security may be the next basic goal after food, cloths, and shelter. An individual with economic refuge is quite confident that he can assure his basic need in the present and in the future. Economic risk (simply referred as risk) is the possibility of losing economic security. Most economic risk derives from variation of actual outcome from the expected outcome.

Historically, economic risk was managed via informal agreements in a defined society. If someone's barn burned down and a herd of milking cows was destroyed, the community would pitch in to rebuild the barn and to provide the farmer with enough cows to replenish the milking stock. This supportive or cooperative (pooling) concept became formalized in the insurance industry. Under a formal insurance agreement, each insurance policy holder still absolutely pools his risk with all other policyholders. Anderson and Brown (2005) stated that, however, it is no longer essential for any individual policyholder to know or have any direct connection with any other policyholder.

According to Bodla, et al (2003), insurance business has emerged as one of the prominent areas of financial services during recent times particularly in developing economies where it could not grow much prior to globalization.

Insurance is a tool to spread the loss caused by a particular risk over a number of persons who are expected to it and who agree to ensure themselves against that risk. The origin of insurance is traced in ancient times. Bodla, et al (2003) stated that the first trace of insurance in the ancient world is found in the form of marine trade loans and carries' contracts, which include an element of insurance.

Through issuing insurance policies, insurance companies collect funds and transfer them to deficit economic units for financing real investment. The importance of insurance is growing due to the increasing share of the insurance sector in the aggregate financial sector in almost every

developing country. Insurance companies are similar to banks and capital markets as they serve the needs of business units and private households in intermediation (Brainard, 2008).

The accessibility of insurance services is crucial for the stability of the economy and can make the business participants accept aggravated risks. By agreeing to claims, insurance companies also have to pool considerations and create reserve funds (Ramanadh, 2006).

Insurance appears simultaneously with the existence of human beings (EEA, 2011). The idea of insurance was conceptualized first in 14th century (Bodla et al, 2003). At the time it was used more as a tool for protection against financial losses of sea fearers involved in foreign trade. Since then this concept has undergone several changes. In ancient form of insurance, groups of the societies helped each other when they faced natural or unnatural catastrophic events that could lead to large financial losses. Ancient insurance service was practiced by Chinese and Babylonian traders as long as the 3rd and 2nd millennia BC. Marine insurance is the oldest form of insurance followed by life and fire insurances. The first life insurance company in the United States was established in 1759 and is still in existence (Mishkin, 2004).

In Ethiopia, insurance is dated back to ancient years when people contributed money or labor to assist other members whenever they faced financial difficulties or needed assistance. 'Idir' and 'Eqqub' are among the organizations that have played significant role in traditional insurance service in Ethiopia.

The first modern insurance company in Ethiopia can be traced back to 1905 with the establishment of Bank of Abyssinia. The bank was acting as an agent for foreign insurance companies to underwrite fire and marine policies. In 1923, the first Austrian agent of La Baloise fire insurance company came to Ethiopia and paid the first loss on warehouse and shop in 1929 (Hailu, 2007). In 1950, only foreign insurance companies - Imperial insurance company of Ethiopia was established. Thus, during 1950s and 1960s, 33 foreign and 1 domestic insurance companies were providing insurance services (EEA, 2011). The rise in the number of domestic insurance companies and the expansion of foreign insurance agents motivated the Ethiopian government to issue the first insurance proclamation to regulate the insurance business in the country.

In 1970, the first insurance proclamation, proclamation number 281/1970 was issued that prohibited foreign companies to undertake insurance business in Ethiopia either directly or through agents. Article 56 of the proclamation raised the minimum paid up capital for all

insurance types. Following the 1974 revolution which followed the path of the command economy, all domestic insurance companies were nationalized through proclamation no. 26/1975. According to Hailu (2007), the Ethiopian Insurance Corporation (EIC) established in 1976 by then the government of Ethiopia monopolized the insurance business by taking over the assets and liabilities of private domestic insurance companies.

As part of changes in economic policy in Ethiopia, the insurance industry has been re- liberalized again by the proclamation no. 86/1994 that stopped the monopoly of the EIC and permitted the establishment of private insurance firms throughout the country.

Performance is the purpose of the capability of a company to obtain or increase and direct or supervise the resources in many different ways to develop competitive advantage (Iswatia, and Anshoria, 2007).

There are two types of performance, namely financial and non-financial performance. Financial performance emphasizes on variables associated directly to financial reports of the company.

Finance is considered as the life blood of a business. It is one of the basics of all types of economic activities. The Organization is supposed to be financially sound if it is in a position to carry on its business efficiently (Kaur, 2012).

According to Walker (2001), Company's financial performance is estimated in three measurements which are company's productivity (processing inputs into outputs efficiently), profitability (the level of which company's earnings are larger than its expenses), and market premium (the level of which company's market price is exceeding its book value).

Non-financial performance parameters emphasizes on evaluation of customer satisfaction, job satisfaction, product quality, or employee turnover, which are especially significant in cases where market-based performance measures showing the total firm value are not available. Non financial performance measures are sometimes considered as leading indicators of future financial performance. In other words, non financial performance measures or parameters are bases for the particular organization to achieve the goal of improving financial performance.

Performance is a complicated idea, in terms of both definition and dimension or measurement. It has been defined as the product of activity, and the proper measure selected to assess company's performance is considered depending on the type of organization to be evaluated, and the objectives to be attained through that assessment or evaluation (Almajali, 2012).

The frame work, (CARAMEL) is selected by the researcher for the purpose of evaluating the financial performance of insurance industry in Ethiopia. CARAMEL was proposed by Das et al. (2003). They add Reinsurance and Actuarial issues to the CAMEL methodology routinely used for banks. Thus, the CARAMEL frame work has been categorized in to seven variables and it stands for:

C ⟶ Capital Adequacy
A ⟶ Asset quality
R ⟶ Reinsurance
A ⟶ Actuarial issue
M ⟶ Management quality
E ⟶ Earning and profitability
L ⟶ Liquidity
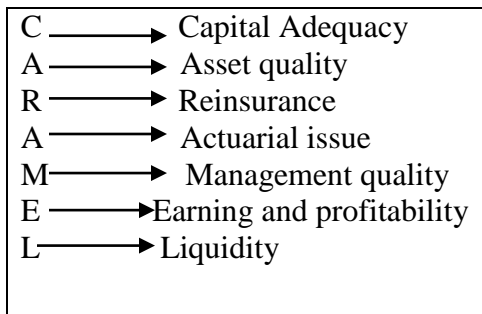
Source: Das et al (2003)

1.2   Statement of the problem

The best performance of any industry in general and any firm in particular plays the role of increasing the market value of that specific firm coupled with the role of leading towards the growth of the whole industry that at last leads to the overall success of the economy.

Well functioning financial institutions will sustain economic growth and reduce poverty (EEA, 2011). Among others, insurance industry is one of the major participants in financial markets that facilitate the protection of business from failure by indemnifying, and protection of families from exposing difficulties (after the death of the family head). These collectively lead to sustainable economic growth of a country at large. In short, Insurance industry plays the most important role for the efficient and sustainable development of economies of a particular country.

It has been the main concern of business practitioners in all kinds of organizations since performance has indications to organization's health and ultimately its survival. Financial performance of the insurance company is fundamental to management as it is an outcome which has been attained by an individual or collection of individuals in a company associated to its responsibility and authority in attaining the goal of that company. According to Naser and Mokhtar (2004), high financial performance indicates that management effectiveness and efficiency in making use of organization's resources and this in turn contributes to the country's

economy at large. The insurance industry in particular is part of immune and repair system of an economy and successful operation of the industry can set energy for other industries and development of an economy. To do so the insurance industry is expected to be financially solvent and strong through being profitable in operation.

Measuring the performance of financial institutions has added the significance in the corporate finance literature because as intermediaries, these companies in the sector are not only providing the means of saving money and transferring risk but also helps to channel funds in an appropriate way from surplus economic units to deficit economic units so as to support the investment activities in the economy.

However, even if insurance industry in Ethiopia is equally old with the banking sector, it has yet to contribute more for the economic development of the country (EEA, 2011). Thus, it is essential to evaluate the financial condition or performance of insurance industry in Ethiopia. Traditionally, the financial performance of insurance industry has been measured using conventional financial ratios such as the return on equity, return on assets, and expense to premium ratios.

Therefore, this study is used to evaluate the financial performance of insurance industry in Ethiopia.

As far as the knowledge of the researcher concerned, there is no research conducted on financial performance of insurance industry in Ethiopia with the help of CARAMEL frame work.

The results of this study could have important policy making implications, for instance, the relationship between return on assets and firm specific factors (e.g. Capital adequacy) could help the industry regulators and policy makers to set the minimum capital adequacy requirement for the insurance industry. These motivate the researcher to conduct research on the financial performance of insurance industry in Ethiopia with the help of CARAMEL model.

1.3   Hypothesis

H1: Capital adequacy has positive effect on return on assets.

H2: Asset quality has positive effect on return on assets.

H3: Retention ratio has positive effect on return on assets

H4: Actuarial issue has a negative effect on return on assets.

H5: Management Efficiency has a negative effect on return on assets.

H6: Combined ratio has a negative effect on return on assets.

H7: Liquidity has negative effect on return on assets.

1.4   Objectives of the study

1.4.1 General objective
The main objective of this study is to evaluate the financial performance of non life insurance companies in Ethiopia by using CARAMEL frame work.

1.4.2 Specific objectives
The following are the specific objectives of the study

To identify the effects of the dependent variables on the financial performance of insurance industry in Ethiopia

To identify major factors that affect performance of insurance industry in Ethiopia

To identify the effects of the dependent variables on the financial performance of non life insurance companies in Ethiopia

1.5 Significance of the study

This research will help the policy makers and managers of insurance industry in Ethiopia to consider major factors and set the minimum capital requirement of the insurance business. Despite the role of insurance for the overall growth of Ethiopian economy (that is affected by the performance of the industry), only few researches are conducted on the area. As far as the researcher's knowledge is concerned, there have not been empirical studies addressed the performance of insurance industry in Ethiopia. Thus, this research is aimed at filling this gap; motivate other researches to the area and providing appropriate recommendation.

1.5   Scope of the study

This study was delimited on the financial performance of non-life insurance industry of selected insurance companies in Ethiopia from the fiscal year of 2008 to 2012. Both public and private insurance companies were selected for the purpose of this study.

1.6   Limitation of the study

As the researcher tried to point out, this research is delimited on the financial performance of non-life insurance industry in Ethiopia without considering the non financial performance as well as the life insurance business of the country.

CHAPTER TWO

Review of literature

The previous chapter comprises of introduction, statement of the problem, hypothesis, objectives, significant and scope of the study whereas this chapter deals about the theoretical and empirical review of literature in relation to insurance company, financial performance of insurance industry, and the frame work used to evaluate that performance of insurance industry in Ethiopia.

2.1 Theoretical literatures

2.1.1 Definition of insurance

"Insurance is the pooling of fortuitous losses by transfer of such risks to the insurers, who agree to indemnify insureds for such losses, to provide other pecuniary benefits on their occurrence, or to render services connected with the risk" (Rejda, 2008).

Bodla and et al (2003, p.5) define insurance as it is risk bearer in return agree to collect premium. Accordingly the term insurance may be defined as a cooperative tools or mechanisms to spread the loss caused by a particular risk over a number of persons who are exposed to it and who agree to ensure themselves against that risk. Risk is, in fact an uncertainty of financial loss.

Insurance is a complicated economic and social tool for the handling of risks to life and property. It is social in nature because it represents the cooperation of various individuals for mutual benefits by merging together to reduce the effect of similar risks.

Insurance is defined as the business of pooling resources together to pay reimbursement to the insured or assured (the policy holder) on the occurrence of a specified incident in return for a periodic consideration known as premium. Note that, an insurance agreement is usually evidenced by a document called the insurance policy which is usually signed at the foot by the insurer or assured or his agent. General or non life insurance is a contract between an insurance company and insured by which the insurance company agrees to indemnify the insured against the losses, which is a result of the occurrence of specified events within specified periods. General insurance includes fire, accident, oil and gas, contractors' all risks and engineering risks; marine and Credit insurance, bond and surety ship etc. This type of insurance is long term in nature. Life insurance

includes individual life business, group life insurance and pension business, health insurance business and annuities Bodla and et al (2003,p.5).

2.1.2 Nature of insurance

2.1.2.1 Risk sharing and Transfer

Insurance is a technique used to share the financial losses that might occur to an individual or his family on happening of specified event such as death of family, marine- perils, fire, theft, and accident etc. The loss arising from such events will be shared by all the insured in the form of premium. Hence, risk is transferred from one individual to a group (Bodla et al, 2003, p.5).

2.1.2.2 Co-operative device

Insurance is a co-operative device in which a group of individuals who agree to share the financial loss may be brought together voluntarily or through publicly or solicitations of the agent. An insurer would not be capable of compensating all the losses from his capital. Therefore, by insuring a large number of persons, he can pay the amount of loss (Bodla et al, 2003, p.5).

2.1.2.3 Risk assessment in advance

Insurance companies are risk bearers. So, the risk is evaluated before insuring to charge the amount of share of an insured (premium). The probability theory (body of knowledge concerned with measuring the likelihood of that something will happen and making estimates on the basis of this likelihood) is used to evaluate the risks (Bodla et al, 2003,p.6).

2.1.2.4 Compensation at the occurrence of contingency

The compensation is made at a certain incident of insured. If the contingency occurs, payment is made (Bodla et al, 2003, p.6).

2.1.2.5 Amount of payment

If contingency occur, the insurer is legally bound to make good the financial loss suffered by the insured. The amount of payment depends on the amount of loss occurred due to the particular insured risk provided up to that amount. In general insurance, the amount of loss and happening of loss are required to be proved (Bodla et al, 2003, p.6).

2.1.2.6   Huge number of insured persons

To make the insurance services cheaper, it is essential to the insured to insure large number of individuals or people or property because the lesser would be cost of insurance and so, the lower would be the consideration (Bodla et al, 2003,p.6).

2.1.2.7   Investment portfolio

Since insurers collect premium initially and make payment later when an event occurs, insurance companies maintain the initial premium collected in an investment portfolio, which generates a return. Thus, then insurers have two sources of income; the insurance premium and the investment income, which occurs over time (Bodla et al, 2003, p.7).

2.1.3   Services Provided by Insurers

2.1.3.1   Risk-pooling and risk-bearing

Insurance gives a means for consumers and commerce exposed to insurable unforeseen event to employ in risk reduction through pooling. Insurers collected premiums from their customers and reallocate most of the funds to those policyholders who maintain losses. Risks exposed by customers reduced because some of these risks are abide by shareholders of the insurance company (for stock companies), by earlier policyholders whose resources has been left in the company (for mutual organizations), or by other parties holding the debt of the insurance company (for both groups). Again, this creates value-added by increasing economic security (David and Weiss 1998, p.23).

2.1.3.2   "Real" financial services relating to insured losses

Insurers provide a variety of bona fide services for insured. In life insurance, these services include financial planning and advising for individuals and pension and benefit plan administration for businesses.   In property-liability insurance, such services include risk investigation to identify strange loss exposures, provide loss prevention services such as programs to reduce the incidence of employment related injuries, Loss settlement services like assessment of property losses, negotiations with contractors, and legal representation for liability claims. Having agreed with insurers to have access to these services, policyholders can take benefit of insurers' widespread experience and specialized skill to reduce costs associated with insurable risks (David and Weiss 1998, p.23).

2.1.3.3 Intermediation

"Insurers issue debt contracts (insurance policies and annuity) and invest the funds until they are withdrawn by or are required to pay claims. In life insurance, interest credits are made directly to policyholder accounts to reflect return on investment; while, in property-liability insurance, policyholders receive a discount in the premiums they pay to reimburse for the break cost of the funds held by the insurer, equivalent to interest payments on business liability. The borrowed funds are invested mainly in saleable securities; and the intermediation procedure often engages investing in asset classes such as privately placed bonds that are not available to the public (Georges, 2000)".

The net interest profit between the rate of return earned on assets and the rate credited to insured reflects the value-added of the intermediation function (David and Weiss 1998, p.23).

2.1.4 Role of Insurance Industry for Economic Growth and Development

Insurance industry provides a number of important economic roles that are largely different from other types of financial intermediaries such as contractual savings features of whole or universal life products.

The indemnification and risk pooling function of insurance enhance commercial transactions and the provision of credit by mitigating losses as well as the measurement and management of non diversifiable risk more generally. Typically insurance agreements involve small periodic payments in return for protection against uncertain, but potentially severe losses. Among other things, this income smoothing outcome assists to evade extreme and costly bankruptcies and enhances lending to commerce. Basically, the accessibility of insurance enables risk averse individuals and entrepreneurs to assume higher risk, higher return activities than they would do in the absence of insurance, promoting higher productivity and growth. Risk management is a fundamental part of insurance by identifying the exposure to accidental losses, evaluating alternative techniques for treating such loses exposures, choosing the best alternatives and monitoring the results to refine the choices (Brainard, 2008).

The contribution of insurance industry for gross domestic product of Ethiopia is insignificant for several years and number of people employed in the industry is very small in number when compared to other countries. Moreover, such underdevelopment of insurance is much more in life insurance division. The GDP grows at as an increasing rate where as the insurance industry remains stagnant (Hailu, 2007).

2.1.5   Financial performance

Financial institutions are profit oriented organization and financial performance can be defined as economic performance as measured by a host of financial indicators (Patrick and Stavros, 1998)

Financial performance of an institution is the result of activities of individuals and groups of the institution. An effective management over the performance needs insurance companies to operate the organization divisions and subdivisions. Within each division or subdivision, there can be units accountable for separate tasks. One satisfactory way of ensuring better performance of units is delegation of profit responsibility to units at the lowest possible level. Delegation of profit responsibility for a unit is possibly provided that the unit managers have information and control over the revenues and expenses. It may not be possible for all units to exercise control over several factors influencing profits. Expense budgets and setting well-defined objectives ensure cost control and effectiveness of the unit. Units give emphasis to control the cost of services they charge to the company or the other units (Kasturi, 2006).

2.1.6   Classification of Financial Performance

Financial performance of insurance companies is normally determined by net premium earned, profitability from underwriting activities, annual turnover, returns on investment, and return on equity. These measures in general can be classified as profit performance and investment performance measures (Kasturi, 2006).

Figure 2.1 classification of financial performance
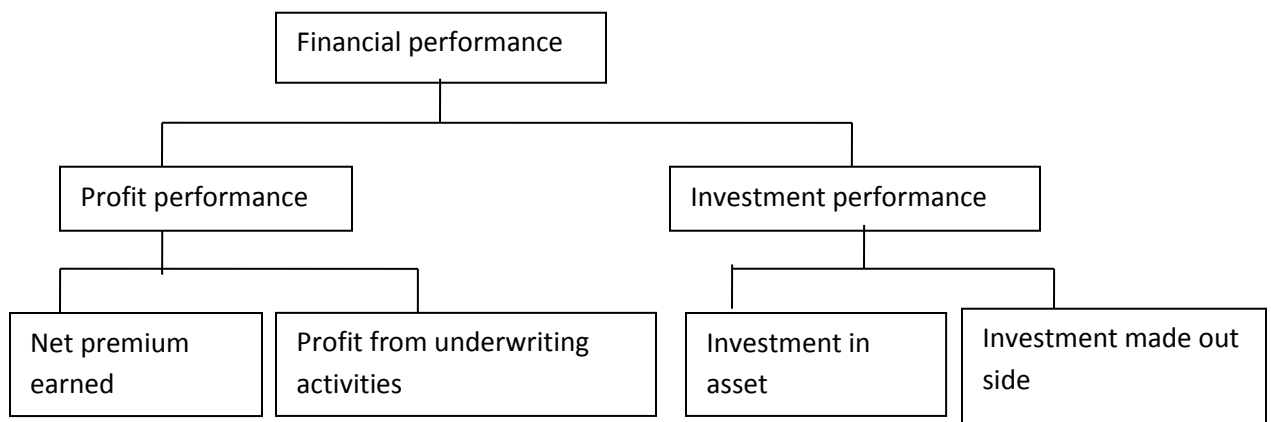
2.1.6.1 Profit Performance

Profit performance comprises the profits measured in monetary terms. It is the net difference between the revenues and expenses. In assessing profit for a company, all items that are directly or indirectly used are considered (Kasturi, 2006).

2.1.6.2 Investment Performance

Investment performance includes the return on assets employed in the business other than cash, and return on the investment operations of the surplus of cash at various levels earned on operations (Kasturi, 2006).

2.1.7 Assessment of Risks and Losses

Efficiency of actuaries and assessors of the insurance policies in setting up premiums and settling claims is primarily an important area for attaining overall efficiency in operations. The quality of evaluating the risk and estimation of losses has the largest claim on the performance of an insurance company. Well trained, experienced and expert hands are needed for the operations (Kasturi, 2006).

2.1.8 Actuarial insurance

"The opening of insurance sector has thrown a great challenge to the actuarial professions. The actuary is a professional who combines an understanding of risks (insurance policies) and mathematical techniques to develop financial products to manage these risks, price these products (calculate insurance premiums rates) and compute reserves to be held for liabilities of companies undertaking these financial risks. The actuary helps the company designing insurance plans and then evaluates the financial risk of the company which it takes while selling an insurance policy. The responsibilities of an actuary include making sure that the company properly defines and carefully evaluates the insurance risks; charge a fair price to suit the risks; and has an efficient system to pay claims and expenses as and when they occur" (Bodla et al, 2003,p. 178).

2.1.8.1 Functions of Actuary in General insurance Business

Risk management is a vital managerial task in huge business, while a specialist risk manager evaluates the nature and magnitude of the company's exposure to a specific mix of risks and decides whether to retain the risks or to transfer to an insurance company. The general insurance actuary has to demonstrate his competence not only in accurate risk appraisal, but also in

understanding the needs the business manager, to construct a mutually beneficial and long lasting relationship between the insurance company and the business community (Bodla et al, 2003, p.185).

2.1.9   Re-insurance

According to Das et al (2003), there are three major stakeholders in the insurance industry: the insured (the policy holder or consumer), the insurer (the service provider both the primary and secondary insurer), and the regulator (the government or an independent authority). Additional stakeholders in the industry include brokers, actuaries, and auditors.

Reinsurance is a secondary market and is the core feature of the general insurance in the insurance industry. Reinsurance has a global feature as manifested by economic interdependency, mobility of capital and transactions across borders, sharing regulations, international competition and management (Plantin, 2006) as cited in Mezgebe (2010). Therefore, the primary insurers' assets consist of reinsurer's capital as a capital structure mix, which may also be a cross border source. The professional reinsurers do indeed hold much diversified portfolios: geographically and across insurance lines.

In contrast, primary insurers rather employ reinsurance mainly to transfer risks, and rarely trade risk with each other.

Reinsurance is one of a number of alternatives or tools to decrease the financial cost to insurance companies a result of the probable incidence of particular insurance claims, thus, further enhancing innovation, competition, and efficiency in the marketplace (Patrik, 2001). According to Patrik (2001), Outreville (2002) and Wehrhahm (2009), insurance companies use reinsurance for Capacity, Business, Asset Management, Catastrophe Protection, Spread of Risk, and Market Environment reasons, which are all needed at different times in a company's development.

The Ethiopian insurance industry is totally dependent on cross border reinsurance business. Despite the significance of sound reinsurance business regulation for the permanence and growth of the domestic insurance industry, no such regulations in Ethiopia have been issued (Mezgebe, 2010). Cross border reinsurance plays a vital role in strengthening risk absorbance, solvency, know-how, and in availing foreign capital for the insurance industry of developing countries.

2.1.10 Implication of CARAMEL

There are different ratios used to evaluate the financial performance of insurance companies such as return on asset, return on equity, and return on investment. In this paper, CARAMEL model was used to evaluate the financial performance of insurance companies in comprehensive manner or it can figure out the financial performance of insurance industry in all aspects. It consists of seven variables; capital adequacy, asset quality, reinsurance, actuarial issue, management efficiency, earning and profitability and liquidity.

2.1.10.1 Capital Adequacy

Capital adequacy is used to evaluate or determine how well insurance can have enough capitals equivalent to their asset in order to sustain operational losses and to reveal whether those institutions are not taking part in investment that boost risk to default. Even though banks have a globally required capital adequacy of 8 %, unfortunately, no internationally accepted standards for capital adequacy of insurance companies exist. Capital adequacy in this study was evaluated based on two ratios which are the ratio of net premium to capital and capital to total asset. The former reflects risk arising from underwriting operations and the later reflects asset risks (Das et al, 2003, p.27).

The above ratios can be determined as follows

1. $$CAR1 = \frac{Net\ premium}{Capital}$$

2. $$CAR2 = \frac{Capital}{Total\ assets}$$

2.1.10.2 Asset quality

Asset quality is one of the most serious areas in determining the overall condition of financial institutions such as banks and insurance companies. The major factor that affects overall asset quality is the quality of the loan portfolio and the credit administration program. Securities may also comprise a large portion of the assets and also contain significant risks. Other items which can impact asset quality are other real estate, other assets, off-balance sheet items and, to a lesser extent, cash and due from accounts, and premises and fixed assets. Two ratios have been used which are ratio of equities to total assets and ratio of Debtors to Total Assets (Das et al, 2003, p .29). The ratios can be calculated as follows

1. $$AQ1 = \frac{\text{Equities}}{\text{Total assets}}$$

2. $$AQ2 = \frac{\text{Debtors}}{\text{Total assets}}$$

2.1.10.3 Reinsurance and Actuarial issue

Reinsurance is applicable when numerous insurance companies share risk by purchasing insurance policies from other insurers to limit the total loss the original insurer (also called ceding company) would experience in case of calamity. When reinsurance exists, the premium collected from the policy holder is normally shared by all of the insurance companies (Das et al, 2003, p.31).

Reinsurance can help a company by providing:

- Transfer of risk – ceding companies can share out or shift specific risks with other insurance companies and can accept new customers.
- Arbitrage - extra proceeds can be obtained by buying insurance contract in another place for less than the premium the company collects from policyholders.
- Capital Management – Companies, having shared risks can avoid huge losses by sharing risk; this makes up additional capital.
- Solvency Margins - The acquisition of excess release insurance allows companies to admit new clients and evade the need to raise extra capital.
- Expertise - The skill of another insurer helps a company get a proper rating and consideration

Actuaries are professionals who apply mathematics to financial problems.

They appraise the financial inference of contingent events that are not certain to occur. They usually engaged in administrating the risks that are a result of unexpected events. Actuaries evaluate the likelihood of future events. They also design means to reduce the financial impact of undesirable events that do occur.

To perform their job, actuaries must have a high level of technical knowhow. For instance, they required knowing the characteristics of insurance, the risks associated with different types of assets, the method in which arithmetical models can be used, and the legal and regulatory restrictions that apply to the commerce. They must also have good business wisdom, problem

solving skills, and the ability to communicate effectively with others. Their effort often affects various stakeholders, so they must be able to balance different interests and observe high ethical standards in doing so.

Therefore, ratios can be used to reflect the above events in insurance industry. Reinsurance and actuarial issue ratios can overall underwriting strategy of a particular insurance company in particular and insurance industry in general. The reinsurance ratio helps to show the proportion of retention and cede to the reinsurance. Hence, ratio of net premium to gross premium and ratio of net technical reserve to Average Net Claims paid are the commonly used ratios in this standard. The ratios can be calculated as follows

1. $$\textbf{Retention ratio} = \frac{\textbf{Net premium}}{\textbf{Gross premium}}$$

2. Survival ratio=$\dfrac{Net\ technical\ reserve}{Average\ net\ claims\ paid}$

2.1.10.4 Management efficiency

According to Baral (2005), sound management is vital to financial institutions performance but is not easy to determine. It is mainly a qualitative factor valid to individual companies.

Operating Expenses to Gross Premiums ratio is used that reveals the efficiency in operations, which finally show the management efficiency and soundness (Das et al, 2003, p.33).

2.1.10.5 Earnings and Profitability

Earning ability or profitability maintains the performance of financial institutions in general and insurance companies in particular (Baral, 2005). According to him constantly unprofitable financial institution risks insolvency and unusually high profitability can reflect excessive risk taking of a financial institution. There are five associated measurements used to determine the earnings and profitability of the insurance companies which are claim analysis, expense analysis, combined ratio (is a combination of claim and expense ratio), investment income and return on asset analysis (Das et al, 2003, p.33).

Claim analysis

Premium came from the Latin word "primum" meaning firs, set before the insurer identifies costs associated with claims, administration and acquisition. As a result, it is not easy to the insurers to put adequate or sufficient consideration that can cover such expenses.

It is most reasonable to forecast the premium based on spending on claims (number, cost, evaluation of damages by the courts at the date of judgment rather than at the date of an event) and expenses (salary). If so, it is difficult to the insurers to put adequate or sufficient premium that can cover its expenses such as claims, purchasing and administration expenses.

Claim ratio is an important indicator of whether the pricing policy of insurers is accurate or not that reveals the quantum of claims in the premiums received. The ratio prescribed for this analysis is Net Claims Incurred to Net Premium. The ratio can be calculated as $\frac{Net\ Claims\ paid}{Net\ Premium}$

Expense Analysis

It shows the expenses incurred by the organization while carrying on insurance business, larger the expenses, lesser will be the profit (Tanver, 2011). The ratio used for this purpose is Management Expenses to Net Premium Earned. This ratio measures the amount of premiums earned needed to pay brokerage, administrative expenses, and other operating expenses. The expense ratio provides insight into the efficiency of a company so that insurance purchasers can be assured that their premiums are not being used to an excessive level for the insurer's own costs and are available for covering claims. It is also a measure where insurance companies can distinguish themselves from competitor insurers, allowing higher profitability, and providing more stability for policy holders in the long run.

Combined ratio

This ratio is very significant that evaluates the achievement of insurers in attaining underwriting profits

Combined ratio is a combination of claims and expense ratios which is an indicator of the possibility of profitability in insurance business (Das et al, 2003). The ratio for expressed as Claim Ratio plus Expense Ratio.

Investment Income Analysis

Investment income ratio measures the returns earned on investments. The ratio prescribed is Investment Income to Net Premiums.

2.1.10.6 Liquidity

Liquidity measures the ability of managers in insurance companies to fulfill their immediate obligations to policyholders and other creditors (Adams and Buckle, 2000)

Liquidity crisis may turn to be severe in the anxiety, where contracts are of short period in nature, moreover for non life insurers; the ratio is an important standard and is current assets to current liabilities.

2.2   Empirical literature

Simpson & Damoah (2008), conducted research on evaluation of financial health of non life insurance companies in Ghana by using CARAMEL frame work and the objective of the study was to evaluate financial soundness of non-life insurance companies using a developing country as the context and to examine the current evaluation tools being used by the Ghanaian regulatory and supervisory body (the National Insurance Commission, NIC) on non-life insurance companies. The researchers used both primary (interview) and secondary data for the completion of the study. From 18 non life insurers and 2 re-insurers in Ghana, the researchers purposely selected 8 insurers and 1 re-insurer for the study. The research outcomes indicated that the evaluations tools use in NIC in Ghana excludes management soundness and actuarial issues proposed under the CARAMEL. The study is mainly to examine the evaluation tools used by NIC in Ghana where as this study is to evaluate the financial performance of non life insurance industry in Ethiopia.

Tanveer (2011) conducted research on the financial performance of insurance industry in post liberalization era in India and the objective of the study was to analyze the financial performance of public and private sector non-life insurers on the basis of CARAMEL parameters. Both primary and secondary data sources were used for the study. The researcher collected the primary data based on personal investigation. The researcher finally concluded that the insurance industry in India, since liberalization (1999), has witnessed paradigm change in a relatively short span of time.

Noor (2004) and Mohammed et al (2013) conducted research on determinants of Capital adequacy and used secondary data. The objective of the study was to identify the determinants of the capital adequacy. The study found that profitability (ROA) and liquidity are positively related to the capital adequacy requirements.

Adams and Buckle (2012), conducted research and the objective of study is to examine the determinants of operational performance in the Bermuda Insurance Market. The researchers used

panel data for 1993-97 and selected Bermuda registered 47 insurance/reinsurance companies. They found that highly leveraged, lowly liquid companies and reinsurers have better operational performance than lowly leveraged, highly liquid companies and direct insurers.

Malik (2011), conducted research on determinants of insurance companies' profitability in Pakistan. The objective of this paper was to identify and examine firm specific factors of insurance profitability in Pakistan. The researcher used secondary data and a sample of 34 insurance companies of Pakistan. The result of this paper shows that profitability proxied by ROA is affected positively by size, volume of capital and negatively by leverage and loss ratio.

Charumathi (2012), the main objective of the study is to examine the determinants of profitability of life insurance companies in India. The researcher took the total life insurance companies of India for the study and 3 years financial statements of those companies. The finding of the study revealed that profitability proxied by ROA of life insurers is positively and significantly influenced by the liquidity.

Bilal et al. *(2013)*, see the determinants of profitability of insurance sector in Pakistan. The researchers included both life and non life insurance and panel data of 31 insurance firms was used. The outcome of the study revealed that from other determinants (leverage, size, earnings volatility and age of the firm) liquidity is not the significant determinants of profitability of insurance business in Pakistan.

Abate (2012) also conducted research on factors affecting Profitability of Insurance Companies in Ethiopia. Secondary data was used for the study. The objective of the study is to identify the factors that affect the profitability of Ethiopian insurance companies. The outcome of the study indicated that growth, leverage, volume of capital, size, and liquidity are identified as most important determinant factors of profitability of Ethiopian insurance companies.

Chen and Wong (2004), the study conducted on the Determinants of Financial Health of Asian Insurance Companies. They used secondary data collected from general insurance companies from 1966 to 1999. They finally found that liquidity ratio and combined ratio are significant factors of financial health of Asian general insurance companies.

Joseph et al (2011) conducted research on the financial performance of life insurance companies in Ghana. The researchers used financial statement of 10 life insurance companies. The research examined the relationship of profitability with investment income, underwriting profit and the

overall (total) net profit. The result of the paper indicated that a setting-off rather than a complementary relationship between underwriting profit and investment income towards the enhancement of the overall profitability of life insurers.

David et al (2012), the objective of the study is to see the relationship between reinsurance counterparty and firm performance in the U.S. Property-Liability Insurance Industry. Secondary data was used to the study. They analyzed the relationship between firm performance (proxied by ROA and ROE) and reinsurance utilization. They finally found that Firm performance is positively related to reinsurance utilization. Meir and Utreville (2003), titled the business cycles in insurance and re-insurance, stated that reinsurance makes primary insurers to enhance the underwriting revenue more than what would otherwise be possible.

Alexandre and João (2008), the purpose of the study was to investigate the impacts of quality management on profitability of firms and Schweiger and Friebel (2013), the objectives of the study was to find out the relationship between management quality, ownership and firm performance. They found that management quality has no significant relationship with the financial performance of the firms. Contrary, Marianne and Antoinette (2003) and Panayiotis (2013), the study investigated the effects of management quality on the performance of the firms and the result indicated that management quality is significantly and positively correlated with the financial performance of the firms.

CHAPTER THREE

Research Design and Methodology

Depending on the nature of the research problem and the research perspective, a research method could be based on the philosophy of quantitative or qualitative or a combination of these two approaches.

According to Creswell (2003), quantitative research uses a review of the existing literature to deductively develop theories and hypotheses to be tested; the research problem is translated to specific variables and hypotheses.

Quantitative research approach assumes that there is a cause and effect relationship between known variables of interest. In line with this, quantitative research tests the theoretically established relationship between variables using sample data with the intention of statistically generalizing for the population under investigation and it uses statistical methods in describing patterns of behavior.

Well designed and implemented quantitative research has the value of being able to make generalizations, for a broader population, based on findings from the sample. To enhance the generalization of findings, quantitative research methods follow, at least theoretically, standardized procedures in sample selection, instrument design, implementation and analysis.

Similarly, Creswell (2003) described qualitative approach as it uses the philosophical assumption of social constructivism world view that provides an understanding of social reality based on the subjective interpretation. Besides, the third approach is mixed research approach that seeks a pragmatic knowledge claim philosophy that consists of both quantitative and qualitative approaches.

McKerchar 2008 (cited in Bayeh, 2011), in general, the choice among the three research approaches is guided by mainly the research problem apart from the underlying philosophy of each research method. That is, whether the research problem is based on a framework developed deductively through a review of the literature and prefigured information to be collected in advance of the study or to allow it to emerge from participants in the project or both.

Thus, in order to achieve the objectives stated in the previous section, bearing in mind the nature of research problem and the research outlook, this study mainly employed quantitative research approach on the financial performance of insurance industry in Ethiopia over the period of 2008 to 2012. In this study, the empirical methodology is adopted mainly from Mamadou (2012) with some modifications.

3.1 Types of data

The Secondary data, which was obtained from the NBE and from the selected insurance companies, was used for the completion of this study.

3.2 Sources of data

The secondary data (the audited annual financial statements of the selected insurance companies for the period of five years (from the period of 2007 to 2012) were the major sources of data used by the researcher.

3.3 Population of the study and sample size

Currently (in the year 2013), there are 15 insurance companies in Ethiopia see the appendix. From those 15 insurance companies, the researcher selected 10 insurance companies based on their year of establishment. For this study non life insurance or general insurances companies are selected. This is because, according to the report of EEA (2011), general insurance is the dominant business in Ethiopia and about 75% of the insurance premium was collected from the general insurance services. As a result, all insurance companies established before 2008 are selected or included as the sample of the study. This helps the researcher decided to use five years data and 10 insurance companies as a sample (50 observations).

Therefore, the following insurance companies are selected purposely as a sample based on their establishment year by the researcher.

Table 3.1 Selected insurance companies in Ethiopia

s.no	Insurance companies	Year of Establishment
1	Africa Insurance Company S.c	1994
2	Awash Insurance Company S.c	1994
3	Ethiopian Insurance Corporation	1975
4	Global Insurance Company S.c	1997
5	Lion Insurance Company S.c	2007
6	National Insurance Company of Ethiopia S.c	1994
7	Nib Insurance Company	2002
8	Nile Insurance Company S.c	1995
9	Nyala Insurance Company S.c	1995
10	The United Insurance S.c	1997

Sources: http://www.nbe.gov.et/financial/insurer.html

3.4 Parameters

Appraisal of insurers' performance (e.g. the financial condition to maintain efficient, fair, safe and stable insurance markets for the benefit and protection of policyholders) is a primary goal of regulators, investors, and insurer management. Each group is interested in a different aspect: according to Grace and Barth, (1993), Regulators must determine a company's capacity to operate and meet its obligations while investors and insurer management are attracted by a company's long term growth and profit potential.

Currently, evaluating insurers' financial performance has been one of the significant activities of regulators globally; to this end they have developed and adopted several tools and methods for the assessment that include Ratio Analysis, Historical Trend Analysis, and Linear Regression Analysis using software tools, Judgmental Forecasting and Cause and Effect Analysis. However, the most commonly used tool is the ratio analysis.

The financial performance of insurance industry can be measured by different ratios. CARAMEL was employed for this study. CARAMEL was proposed by Das et al. (2003); they add Reinsurance and Actuarial issues to the CAMEL which is used by the banks. Therefore,

CARAMEL is used to measure the financial performance of insurance companies based on capital adequacy, asset quality, Reinsurance and Actuarial Issues, Management efficiency, Earnings and Profitability and liquidity.

Table 3.2 Operationalization of the study variables

	Variables	Measures	Sources	Expected sign
Dependent	Return on Assets (ROA)	Net income /Average total assets		
Independent	Capital adequacy (CAR)	Capital /total Assets	Das et al, 2003	+
	Asset quality (AQ)	Equity / Total assets	Das et al, 2003	+
	Re-insurance (R)	Net premium/Gross premium	David et al, 2012	+
	Actuarial issues (A)	Net technical reserve/Net claims	Das et al, 2003	-
	Management efficiency (ME)	Operating expense/Gross premium	Das et al, 2003	-
	Earning and profitability (EP)	Loss ratio+ expense ratio	Chen and Wong,2004	-
	Liquidity (LQ)	Current assets/Current liability	Chen and Wong,2004	-

3.5 Model specification

ROA=α+β₁KTAit+β₂ONETA1it+β₃Rit+β₄Ait+β₅MEit+β₆EPR₃it+β₇LRit +Ɛ adopted from Mamadou (2012)

Where

ROA is Return on Assets

α is constant

B$_1$, β$_2$, β$_3$, β$_4$, β$_5$, β$_6$ &β$_7$are coefficients

KTA$_{it}$ is Capital to Total Asset Ratio for insurance i at time t

ONETA$_{it}$ is Owner' Equity to Total Assets ratio for insurance at time t

R$_{it}$ is Reinsurance for insurance i at time t

A$_{it}$ is actuarial issues for insurance i at time t

ME$_{it}$ is Management Efficiency for insurance i at time t

EPR$_{it}$ is Earning and profitability for insurance i at time t

LR$_{it}$ is liquidity ratio for insurance i at time t

ε *is error term*

Empericla literatures or studies supported ROA as a measurement of financial performance (Hifza Malik, 2011: B. Charumathi, 2012: Abate Gashaw, 2012: Dissanayake and Anuranga, 2012**:** Khalid, 2012)

3.5 Method of data analysis

The data were analyzed with the help of software (stata 11.0). Different statistical tests such as normality of data, hetroskedasticty, and multi-colliearty are tested by the help of stata 11.0. The researcher also checked fixed effects and random effects model, but finally decided to run simple OLS regression.

CHAPTER FOUR

Data analysis and Presentation

The previous chapter deals with the methodology and the source of data used to undertake this study. This chapter contains two important parts of the paper namely, the descriptive and regression analysis. The descriptive part of the paper was done with the help of variables of the CARAMEL frame work to show the trends of insurance industry in Ethiopia during the last five years. The second part is the multiple regression analysis with the help of stata 11.0 that shows the relationship of ROA with the explanatory variables.

4.1 Capital adequacy ratio

Table 4.1 Capital adequacy ratio of Ethiopian insurance companies (in %)

Company	*Ratio	2008	2009	2010	2011	2012	Mean
AFIC	1	20	28	30	33	34	26.4
	2	25	27	26	25	26	25.8
AIC	1.	57	75	72	69	73	69.2
	2.	70	76	71	64	60	68.2
EIC	1.	41	45	41	43	46	43
	2.	69	70	74	73	65	70.2
GIC	1	65	40	47	57	83	58.4
	2	74	61	61	68	62	62
LIC	1	69	71	54	63	64	64.2
	2	75	62	52	56	52	59.4
NICE	1	75	83	73	64	67	72.4
	2	89	79	89	90	87	86.8
NIB	1	44	62	51	45	61	52.6
	2	68	56	60	60	56	60
NIC	1	27	36	42	36	40	36.2
	2	58	60	73	76	75	68.4
NYIC	1	40	39	42	47	48	43.2
	2	62	63	63	50	47	57
UNIC	1	66	78	52	53	56	61
	2	65	59	65	65	73	65.4
Mean	1	50.4	55.7	50.4	51	57.2	52.9
	2	65.5	61.3	63.4	62.7	60.3	62.6

Source: computed from audited annual report of Insurance companies (2008-12)

Note:*

1. *Net premium to Capital*

2. *Capital to Total Assets*

Capital Adequacy ratio is the key indicator of a financial soundness of financial institutions in general and an insurer in particular and prudential standards recognize the importance of adequate capitalization with solvency as input focus area of insurance supervision. However, unlike banks (the minimum capital requirement for banks is 8%); there is no internationally accepted standard for capital adequacy of insurance companies. The larger risk to the financial steadiness of an insurer stems from underwriting business that is either too huge in quantity or too unstable for its capital base (Das et al, 2003). Analysis of capital Adequacy depends seriously on practical valuation of both assets and liabilities of the insurance companies. Capital is viewed as cushion to protect the customer (insured) and encourage the stability and efficiency of financial system. It is also an indicator of whether an insurance company has adequate capital to absorb losses arising from claims (Das et al, 2003).

For the capital adequacy analysis of Ethiopian insurance companies, two capital adequacy ratios have been used in this study; Net premium to capital and Capital to Total Assets. The former reflects the risk arises from underwriting operations where as the later reflects asset risks.

Based on the first ratio that is the ratio of Net premium to Capital (1), the higher capital adequacy ratio considered as good indicating the insurance company has adequate capital to absorb unforeseen shocks. As it is clearly seen from table 4.1 above, the lowest average ratio of net premium to capital in the last five years is 50.4% in the year 2008 and 2010 and the highest averages is 57.2% in 2012. The above table 4.1.1 also shows that the highest average ratio (72.4%) scored by National Insurance Company of Ethiopia and by Awash insurance company (69.2%) where as the lowest ratio was scored by Africa insurance company (26.4%) and by Nile insurance company (36.2%).

As it is clearly seen from the table, the ratio of net premium to capital shows fluctuation and this is due to the fact that future is uncertain and it forces the insurance companies to use their capital for the payment of or to absorb the losses arising from the claim.

The ratio of Capital to Total asset (2) indicates that the proportion of capital in the assets portfolio of the insurance companies, growth in the asset of the business and how efficiently the capital has been invested to create asset or it measures whether a company has sufficient capital to support its assets. The companies under the study have satisfactory ratio except the fluctuations occurred in

each companies. The lowest average ratio of the industry is existed in Africa insurance company which is 25.8% whereas the highest ratio (86.8%) is scored by National Insurance Company of Ethiopia.

Hence, it is possible to conclude that insurance industry in Ethiopia is able to absorb losses and claims arising from underwriting the business.

Figure 4.1.1Trend analysis of Capital adequacy based on the ratio of Net premium to Capital
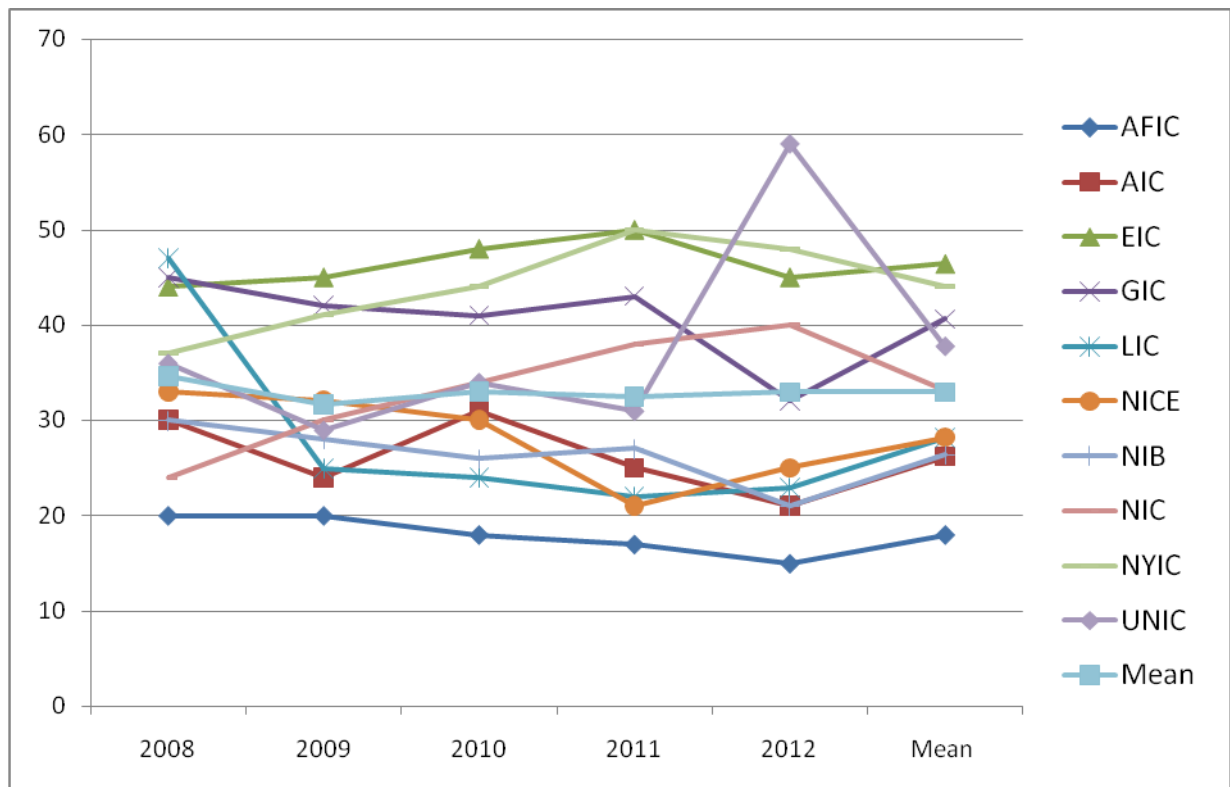
Source: computed from audited annual report of Insurance companies (2008-12)

As per figure 4.1.1 the industry average ratio of Net premium to capital reveals a slight fluctuation during the study period. The capital adequacy ratios of five insurance companies (Africa Insurance Company, Lion Insurance Company, National Insurance Company of Ethiopia, Nib Insurance Company, and Awash Insurance Company) are below the industry average ratio where as the capital adequacy of the rest five insurance companies (Nile Insurance Company, Global Insurance Company, Ethiopian Insurance Corporation, Nyala Insurance Company and United Insurance Company) are above the average ratio of the industry.

From this the researcher can conclude that the insurance companies in Ethiopia have fluctuation in underwriting operation. The fluctuation is due to the fact that there is strong competition between insurance companies in Ethiopia and the change in the underwritten operation of the industry through time.

Figure 4.1.2 Trend analysis of Capital adequacy based on Capital to Total Assets ratio
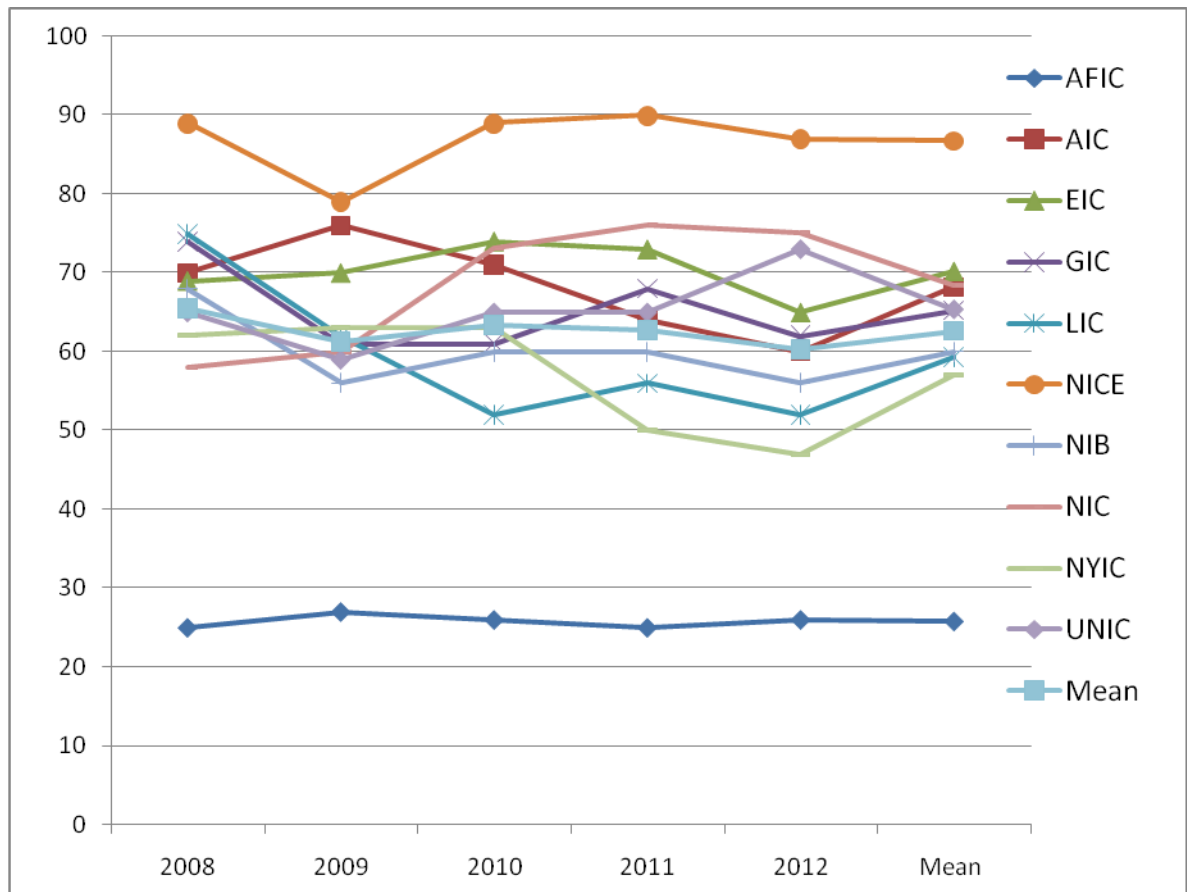
Source: computed from audited annual report of Insurance companies (2008-12)

Figure 4.1.2 shows that the capital adequacy ratio of four insurance companies (Africa Insurance Company, Lion Insurance Company, Nyala Insurance Company and Nib Insurance Company) are below the industry average ratio where as the ratio of six insurance companies namely National Insurance Company of Ethiopia, Africa Insurance Company, Ethiopian Insurance Corporation, Nile Insurance Company, Unite Insurance Company and Global Insurance Company are above the average ratio of the insurance industry in Ethiopia during the study period.

As it is clearly shown from the above figure 4.1.2, the capital adequacy of Africa Insurance Company is below and far from the industry average ratio where as the capital adequacy ratio of National Insurance Company of Ethiopia is above and far from the industry average ratio of capital to total assets in the last five years. This indicates that comparing to other insurance companies, National insurance company of Ethiopia has better capital to absorb future losses where as Africa insurance company has not sufficient capital adequacy to do so. The trend of the average ratio of capital to total assets of insurance industry in Ethiopia during the fiscal year of 2008 to 2012 witnessed a decreasing movement. From this it is concluded that the proportion of capital to the total assets of the insurance industry is decreasing during the study period.

4.2 Asset quality ratios

Table 4.2 Asset quality analysis (in %)

Company	*Ratio	2008	2009	2010	2011	2012	Mean
AFIC	1	20	20	18	17	15	16
	2	4	3	2	3	4	3.2
	1	30	24	31	25	21	22.4
AIC	2	2	4	2	3	3	2.8
	1	44	45	48	50	45	46.5
EIC	2	6	5	4	5	6	6.4
	1	45	42	41	43	32	46.4
GIC	2	3	2	2	2	3	2.4
	1	47	25	24	22	23	37.9
LIC	2	3	3	2	3	3	2.8
	1	33	32	30	21	25	28.3
NICE	2	8	5	9	5	5	6.4
	1	30	28	26	27	21	26.4
NIB	2	7	2	2	3	2	3.2
	1	24	30	34	38	40	33.3
NIC	2	3	2	2	2	3	2.4
	1	37	41	44	50	48	44
NYIC	2	2	6	4	4	5	4.2
UNIC	1	36	29	34	31	59	38
	2	2	2	3	4	3	3
Mean	1	34.6	31.6	33	32.4	32.9	32.9
	2	4	3.4	3.2	3.4	3.7	3.54

Source: computed from audited annual report of Insurance companies (2008-12)

Note:*

1. *Owners equity to Total Assets (ONE/TA)*

2. *Debtors to Total Assets (D/TA)*

Asset quality is one of the most critical concerns in determining the overall financial health of insurance companies. The asset quality analysis reveals the quantum of existing and potential credit associated with the loan and investment portfolio. Debtors may expose the insurance companies to considerable credit risk. The ratio of Equity to Total asset reflects the degree of insurance companies' exposure to the stock market risk and fluctuations of the economy (Das et al, 2003). Generally, the lower the debt ratio is the better.

The above table 4.1.2 reveals the asset quality ratio based on the ratio of owners equity to Total Assets (1) and Debtors to Total Assets (2).

Based on the table above the highest ratio is 59 % which is scored by the United Insurance Company in 2012 and the lowest is 15 % scored by Africa insurance company in the same year. The average ratio of the insurance industry of Ethiopia is 34.6%, 31.6%, 33%, 32.4% and 32.9% from the fiscal year of 2008 to 2012 respectively.

 The average ratio of the industry, as it is clearly seen in the above table 4.1.2, also shows that there is fluctuation in the ratio of equity to total asset and it is as a result of volatility of investment, in the industry.

The analysis of Debtors to Total assets (2) reveals a decreasing trend in the first three years and increasing trend in the last two years. It is clearly shown in the table above that the average ratio of insurance industry is 4%, 3.4%, 3.2%, 3.4% and 3.7% from the year of 2008 to 2012 respectively.

This shows that insurance companies in Ethiopia are not highly leveraged as the ratio of debt to total assets is small in present.

Figure 4.2.1Trends analysis of Owners equity toTotal assets of Ethiopian insurance companies
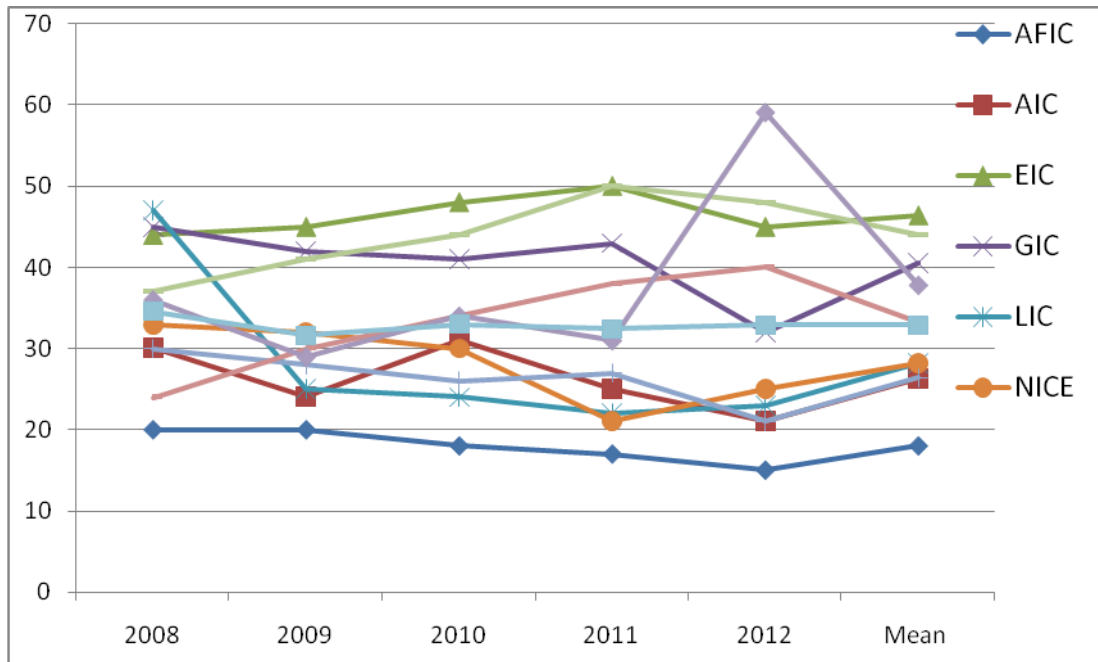
Source: computed from audited annual report of Insurance companies (2008-12)

The averages ratios of five insurance companies (Africa Insurance Company, Awash Insurance Company, Lion Insurance Company, National Insurance Company of Ethiopia and Nib Insurance Company) are below the industry average where as the average ratios of the rest five insurance companies are above the industry average.

From this the researcher can concluded that the average ratio of the industry has increasing trend starting from 2010 indicating insurance industry in Ethiopia has slight fluctuation of owners' equity in proportion of Total assets.

Figure 4.2.2 Trend analysis of Debtors to Total assets of insurance companies in Ethiopia
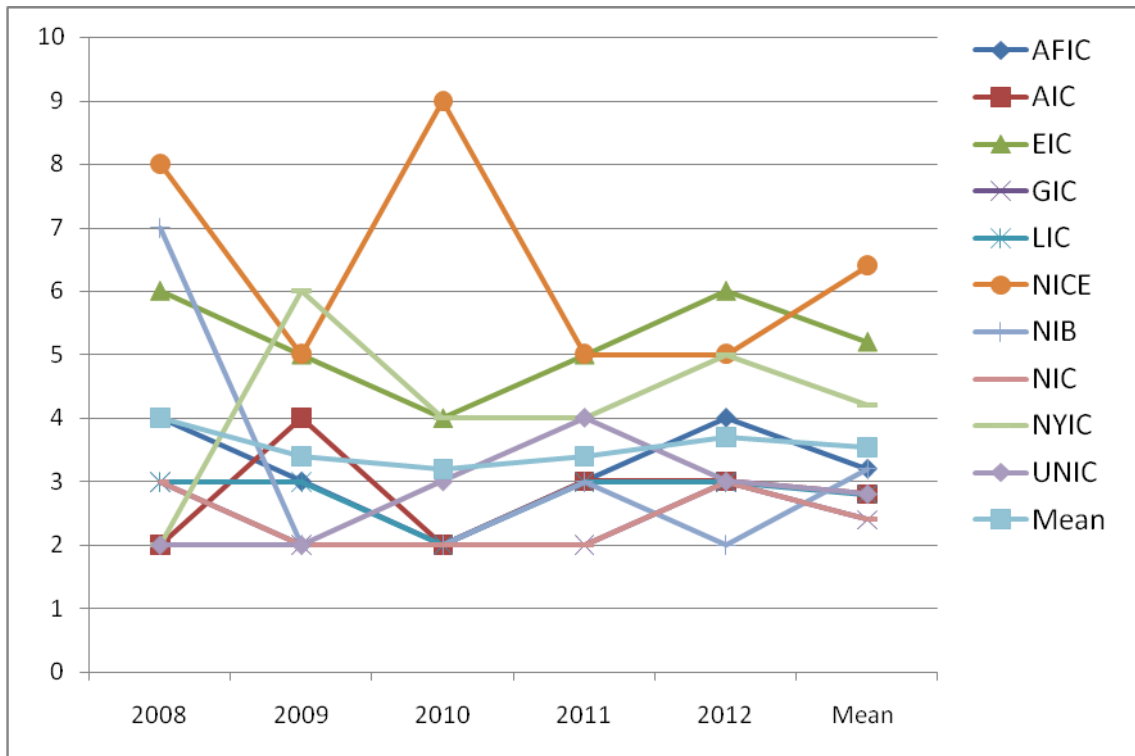
Figure 4.2.2 indicates that the average ratio of Debtors to Total asset and it also reveals that the average ratio of three insurance companies is above the industry average however, the average ratio of other insurance companies is below the mean ratio of the industry.

It is possible to conclude that the average debt ratio of insurance companies in Ethiopia shows slight it is possible to conclude that the average debt ratio of insurance companies in Ethiopia shows increment from the fiscal year of 2010.

4.3 Re-insurance and Actuarial issues

Table 4.3 Re insurance and Actuarial issues ratio (in %)

	Company	*Ratio	2008	2009	2010	2011	2012	Mean
1	AFIC	1	62	68	63	65	65	64.6
		2	55	65	70	74	66	66
2	AIC	1.	82	86	81	74	73	79.2
		2.	16	21	27	29	25	23.6
3	EIC	1.	80	86	88	80	77	79.5
		2.	68	50	52	56	57	48.6
4	GIC	1	84	81	87	85	86	84.6
		2	83	80	82	62	58	73
5	LIC	1	73	59	62	54	65	65
		2	86	81	70	81	86	80.1
6	NICE	1	81	83	91	63	67	77
		2	72	87	84	93	84	84
7	NIB	1	55	55	45	38	47	48
		2	32	24	23	22	20	24.2
8	NIC	1	77	76	71	74	71	73.8
		2	65	55	79	50	59	53.6
9	NYIC	1	74	58	66	70	70	67.6
		2	33	32	38	40	41	8.8
10	UNIC	1	64	79	65	62	61	66.2
		2	30	33	36	34	46	4.4
	Mean	1	73.2	73.1	71.9	61.5	63.7	68.68
		2	48.9	47.2	50.2	50.1	50.4	49.36

Source: computed from audited annual report of Insurance companies (2008-12)

Note:*

1. *Net premium to Gross premium (NP/GP)*

2. *Net technical reserve to Average or Net claim (NTR/NC)*

"The risk retention ratio (net premium/gross premium) reflects the overall underwriting strategy of the insurer in that it shows what portion of risk is passed on to the reinsurers. Overall, insurer's capital and reinsurance cover need to be capable of covering a plausible severe risk scenario. If the insurer relies on reinsurance to a substantial degree, it is critical that the financial health of its reinsurers is examined

At the industry level, this ratio indicates the risk bearing capacity of the country's insurance sector Das et al (2003)".

The adequacy of technical reserves also called a survival ratio that reflects the quality of company's estimate of the value of reported and outstanding claims.

The above table 4.3 shows that there is a declining trend in the ratio of risk retention (Net premium to Gross premium) for the last five years. The lowest average ratio is 61.5% scored in the year 2011 where as the highest is 73.2% in the year 2008. The average ratio of the industry as it is seen from the above table is 68.3%. This movement is due to there is a decrement in the net premium of the insurance industry in Ethiopia for the last five years.

The above table also shows the ratio of net technical reserve to net claim paid. The higher the ratio reflects less technical reserves compared to the average claims paid, highlighting the sound quantification and assessment of insurance liabilities. The analysis in the above table indicates slight fluctuation in the average ratio of the industry in the last five years. The lowest average ratio is 47.2% which is occurred in the fiscal year of 2009 and the highest ratio is 50.4% which is scored in the year 2012.

Figure 4.3.1 Trend analysis of Re-insurance
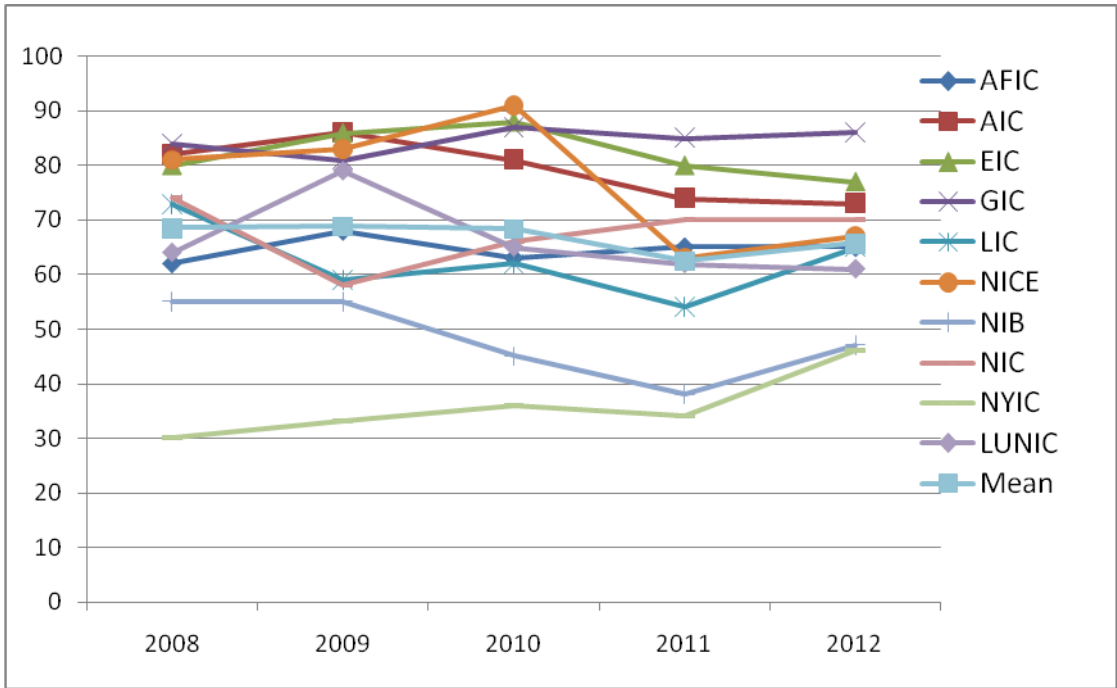
Source: computed from audited annual report of Insurance companies (2008-12)

The trend of Net premium to Gross premium shows a decreasing movement on the average ratio of the industry. Figure 4.3.1 also shows that the average ratio of two insurance companies (Nyala Insurance Company and Nib Insurance Company) are below and far from the industry average

ratio, where as the ratio of Global Insurance Company, National Insurance Company of Ethiopia, Ethiopian Insurance Corporation and Awash Insurance Company are above the industry average ratio of net premium to gross premium. The average ratio of the insurance industry in Ethiopia has a decreasing movement for the last five years.

From this, the researcher can conclude that the decreasing movement of the ratio of net premium to gross premium is an indication of the net premium earned in the insurance industry is decreasing through the study period.

Figure 4.3.2 Trend analysis of Actuarial issues based on Net technical reserve to Net claim incurred
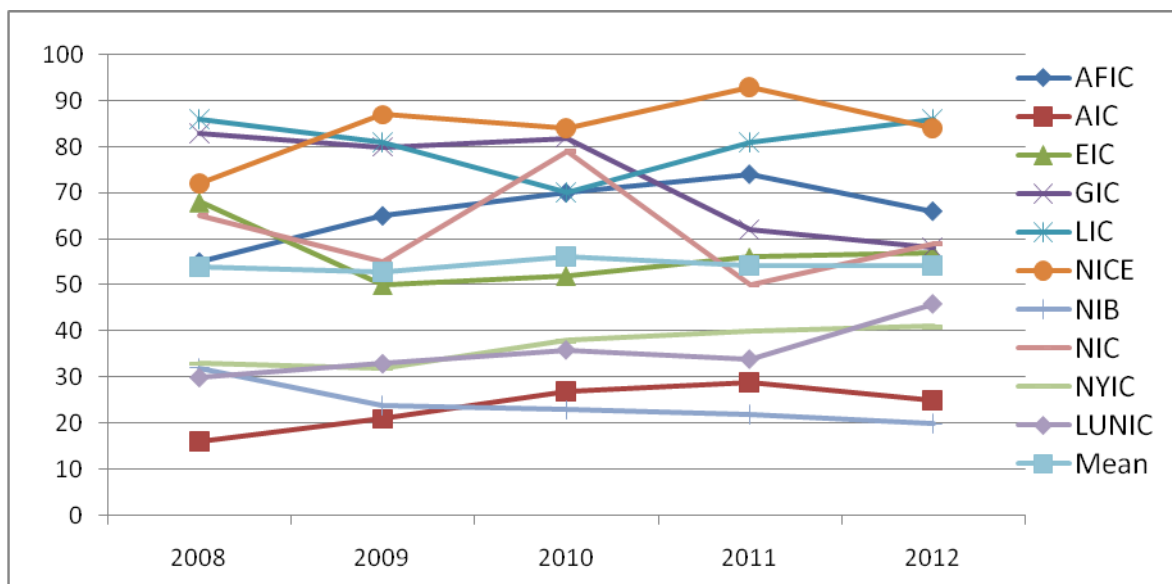
Source: computed from audited annual report of Insurance companies (2008-12)

The above figure 4.3.2 shows that the average ratios of four insurance companies namely Africa Insurance Company, Nib Insurance Company, United Insurance Company and Nyala Insurance Company are below the industry average ratio of Net technical reserve to Net claims paid while the ratios of the rest five insurance companies are above the average ratio of the industry for the last five years. The average ratio of the insurance industry in Ethiopia during the fiscal year of 2008 to 2012 shows a slight fluctuation.

The fluctuation of the ratio reflects that the insurance companies are adjusting their technical reserve in relation to the claim they incurred from the business they underwrite.

4.4 Management efficiency

Table 4.4 Management efficiency (in %)

Company	2008	2009	2010	2011	2012	Mean
AFIC	8	6	5	5	6	6
AIC	14	10	12	12	10	11.6
EIC	15	17	16	16	14	13.6
GIC	25	29	30	24	14	24.4
LIC	30	13	7	7	8	13
NICE	8	8	8	4	6	6.8
NIB	13	15	15	15	12	14
NIC	25	24	21	19	17	21.2
NYIC	12	13	16	14	18	14.6
UNIC	11	15	13	11	12	12.4
Mean	16.1	15	14.3	12.7	11.7	13.96

Source: computed from audited annual report of Insurance companies (2008-12)

Note: *Operating expense to Gross premium (OE/GP)*

An interesting form of financial performance analysis of insurance companies is that analysis of management soundness or efficiency. The sound management shall reflect in operating expense and gross premium, affecting overall operating efficiency of the insurance industry.

Efficient management is vital for financial steadiness of insures. However, it is very difficult to get any direct quantitative measure of management soundness. The indicator of operational efficiency is likely to be associated with general management soundness.

Hence, the key indicator of management soundness is the ratio of operating expenses to gross premiums. Gross premiums are used because they are a manifestation of the overall volume of business activity. The analysis reflects the efficiency in operations, which ultimately indicates the management efficiency and soundness. And the lower the ratio indicates the best performance of the manager using the resources properly to generate revenue or premium in this case.

The above table shows the management soundness indicator for the last five years. It is clearly seen from the above table that the ratio of operating expense to gross premium ranges from 16% to 11.7% during the study period. The highest ratio which is 16% indicates that the Ethiopian insurance companies spent 16 cents in order to generate 1 birr in the year 2008 where as the lower average ratio of the industry which is 11.7% reveals the Ethiopian insurance companies spent 11.7cents to generate one Ethiopian birr in the 2012. The average ratio of the industry, in the

analysis indicates that the Ethiopian insurance companies spent 13.96 cents in order to generate one ETB from the fiscal year of 2008 to 2012 which intern indicates the managements of Ethiopian insurance industry is sound or efficient suggesting proper utilization of resource to generate premium.

Figure 4.4.1 Trends of management efficiency based on the ratio Operating expense to Gross premium
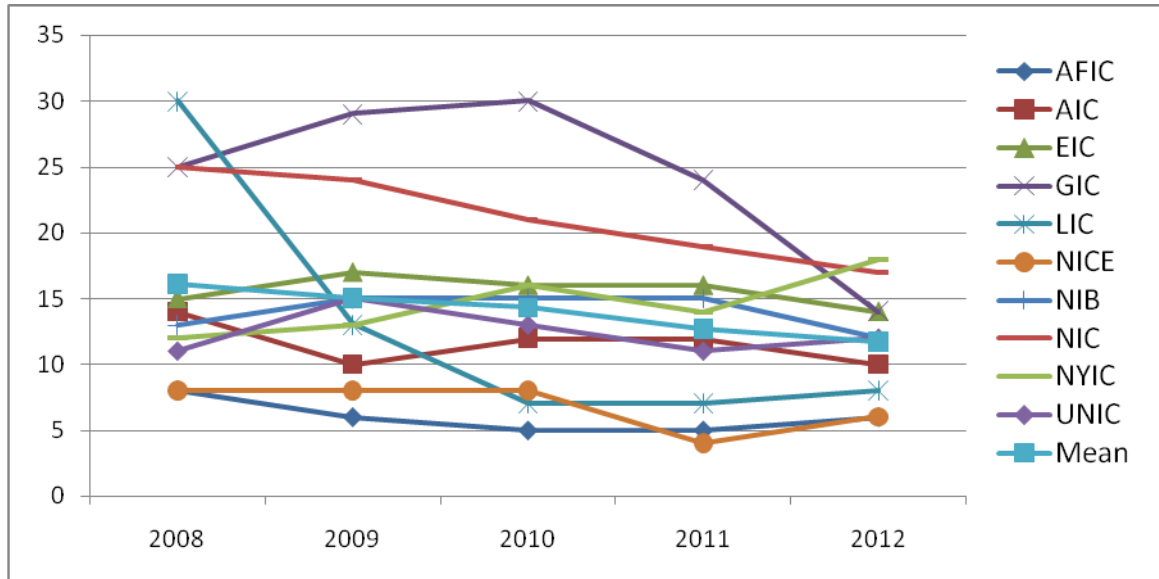
Source: computed from audited annual report of Insurance companies (2008-12)

The trend analysis in the above figure 4.4.1 shows that the average ratios of two insurance companies (Global Insurance Company and Nile Insurance Company) are above the industry average and the average ratio of two insurance companies (Africa Insurance Company and National Insurance Company of Ethiopia) are below the industry average, where as the ratio of the rest insurance companies is on the industry average ratio of Operating expenses to Gross premium. As it is clearly shown on the figure 4.4.1, the average ratio of the industry shows a decreasing movement during the study period.

This is a good indicator that the management of Ethiopian insurance companies is decreasing their operating expense through time and is good in proper utilization of companies' resources.

4.5 Earning and profitability

Table 4.5.1 Net claim paid To Net premium earned and operating expense to Net premium earned (in %)

Company	*Ratio	2008	2009	2010	2011	2012	Mean
AFIC	1	81	82	82	82	85	82.4
	2	13	8	8	8	9	9.2
AIC	1	65	67	62	56	64	62.8
	2	17	12	15	16	14	14.8
EIC	1	65	58	50	30	33	37.2
	2	21	19	18	19	18	19
GIC	1	61	60	62	82	89	70.8
	2	30	36	34	28	16	28.8
LIC	1	33	76	66	73	52	60
	2	21	22	12	14	13	20.4
NICE	1	70	61	62	57	40	58
	2	9	9	8	6	9	8.2
NIB	1	38	58	66	65	67	63
	2	24	26	32	30	24	29.4
NIC	1	65	62	64	70	59	68.6
	2	32	31	30	26	24	28.6
NYIC	1	59	69	46	50	40	52.8
	2	17	22	24	21	25	21.8
UNIC	1	59	60	58	71	64	62.4
	4	10	8	10	13	11	10.4
Mean	1	59.6	60.3	61.8	63.6	59.3	61.8
	2	19.6	20.5	19.3	18.1	16.6	18.82

Source: computed from audited annual report of Insurance companies (2008-12)

Note:*

1. *Net claim paid To Net premium earned (NC/NP)*

2. *Operating expense to Net premium earned (OE/NP)*

Earning and profitability of insurance industry, in this study is analyzed through the ratio of Net claim to Net premium (claim ratio), Operating expense to Net premium (expense ratio), combined ratio (claim ratio + expense ratio) and investment income to net premium.

The ratio of net claim to net premium (1) is a vital indicator of whether the pricing policy of non life insurance companies is correct where as the expense to net premium (2) also called expense ratio is an indication of operating costs of the companies Das et al (2003).

The above table 4.5.1 contains the detail analysis of these ratios that are used in the study to determine the earning and profitability of the insurance industry in Ethiopia.   The first ratio (Net claim to Net premium) represents the proportion of net claim out of the earned premium. The lower the ratio indicates good financial performance of insurance industry.

 As it is shown in the table above the ratio shows an increment trend ranging from 59.6% to 63.6% during the fiscal year 2008 to 2011 and it decreased to 59.35% in 2012.

Expense ratio, the ratio of operating expense to net premium, reveals the proportion of premium used to pay all the costs of acquiring, writing, and servicing insurance and re -insurance. This ratio under the study shows a decreasing trend for the last four years ranging from 20.5% to 16.6% from the year 2009 to 2012. This reflects that the expense of the insurance industry in Ethiopia was reducing during the fiscal year of 2010 to 2012.

Table 4.5.2 Combined ratio and Investment income to Net premium (%)

Company	*Ratio	2008	2009	2010	2011	2012	Mean
AFIC	3	94	90	89	90	94	91.4
	4	18	13	10	12	8	12.2
AIC	3	81	79	77	72	77	77.2
	4	7	4	10	9	9	6.2
EIC	3	86	77	68	50	51	66.4
	4	8	8	7	7	8	7.6
GIC	3	91	95	96	110	104	99.2
	4	18	11	14	14	10	13.4
LIC	3	75	98	78	86	70	81.4
	4	11	10	19	12	15	13.4
NICE	3	80	70	71	64	49	66.8
	4	3	3	2	4	5	3.4
NIB	2	24	26	32	30	24	29.4
	3	62	85	98	112	92	89.8
NIC	3	114	99	94	96	83	97.2
	4	10	8	13	14	14	11.8
NYIC	3	76	91	70	71	65	74.6
	4	12	21	13	13	15	14.8
UNIC	3	76	66	78	89	84	78.6
	4	10	8	10	13	11	10.4
Mean	3	83.5	85	81.9	84	76.9	82.3
	4	11	9.7	11.1	11.4	10.7	10.62

Source: computed from audited annual report of Insurance companies (2008-12)

*Note:**

3. *Combined ratio (NC/NP + OE/NP)*

4. *Investment income to Net premium (II/NP)*

The combined ratio (3), the sum of loss and expense ratio, is the basic and commonly used measure of profitability (measures performance of underwriting operation) of insurance industry Das et al (2003).

 A ratio below 100 percent reveals that a company is making an underwriting profit, where as a ratio of above 100 percent indicates it is exploiting more money in paying claims and expenses that it receives from premiums. Hence, the above table shows that Global insurance company (2011 and 2012); Nib insurance company (2011) and Nile insurance company (2008) have a combined ratio of above 100%, indicating they exploited more money in paying claims and expenses. However, the combined ratio of the industry during the last five years is below 100%

(ranging from 76.9% to 85%) indicating the insurance industry in Ethiopia has an underwriting profit for the last five years. The combined ratio of 76.9% scored in the fiscal year of 2012 reveals that the insurance industry in Ethiopia recognized a 23.1% of underwriting profit in the year 2012 and a combined ratio of 85% is an indication that the industry recognized a 15% underwriting profit in the year 2009.

The next ratio is investment income to net premium and it shows a slight fluctuation in the last five years. The highest and lowest ratio of investment income to net premium is that 11.4% and 9.7% scored in the fiscal year of 2011 and 2009 respectively.

Figure 4.5.1 Trend analysis of net claim to net premium
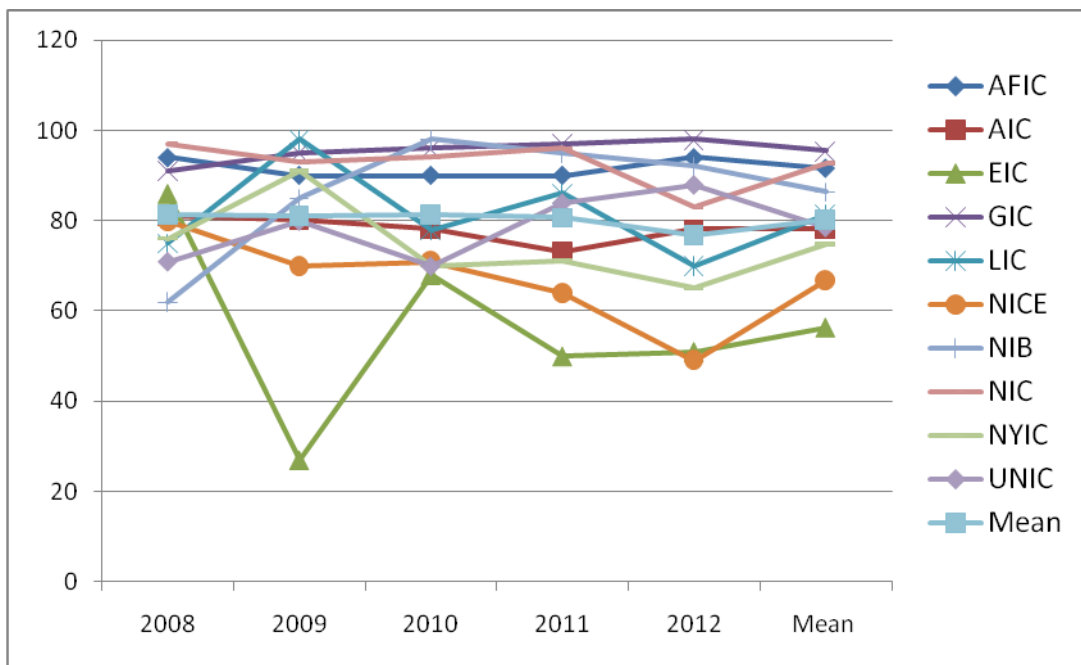
Source: computed from audited annual report of Insurance companies (2008-12)

The trend analysis in the figure above, reveals that the average ratio of Net claim to net premium of four insurance companies (Nile Insurance Company, Global insurance company, Africa Insurance Company, and Nib Insurance Company) are above the ratio of the industry average where as the ratios of two insurance companies namely Nyala Insurance Company, National Insurance Company of Ethiopia and Ethiopian Insurance Corporation are below from the industry average ratio in the last five years. However, the average ratios of two insurance companies (Lion

Insurance Company and United Insurance Company) are fluctuated through the ratio of the industry average.

Figure 4.5.2 Trend analysis of Operating expense to net premium
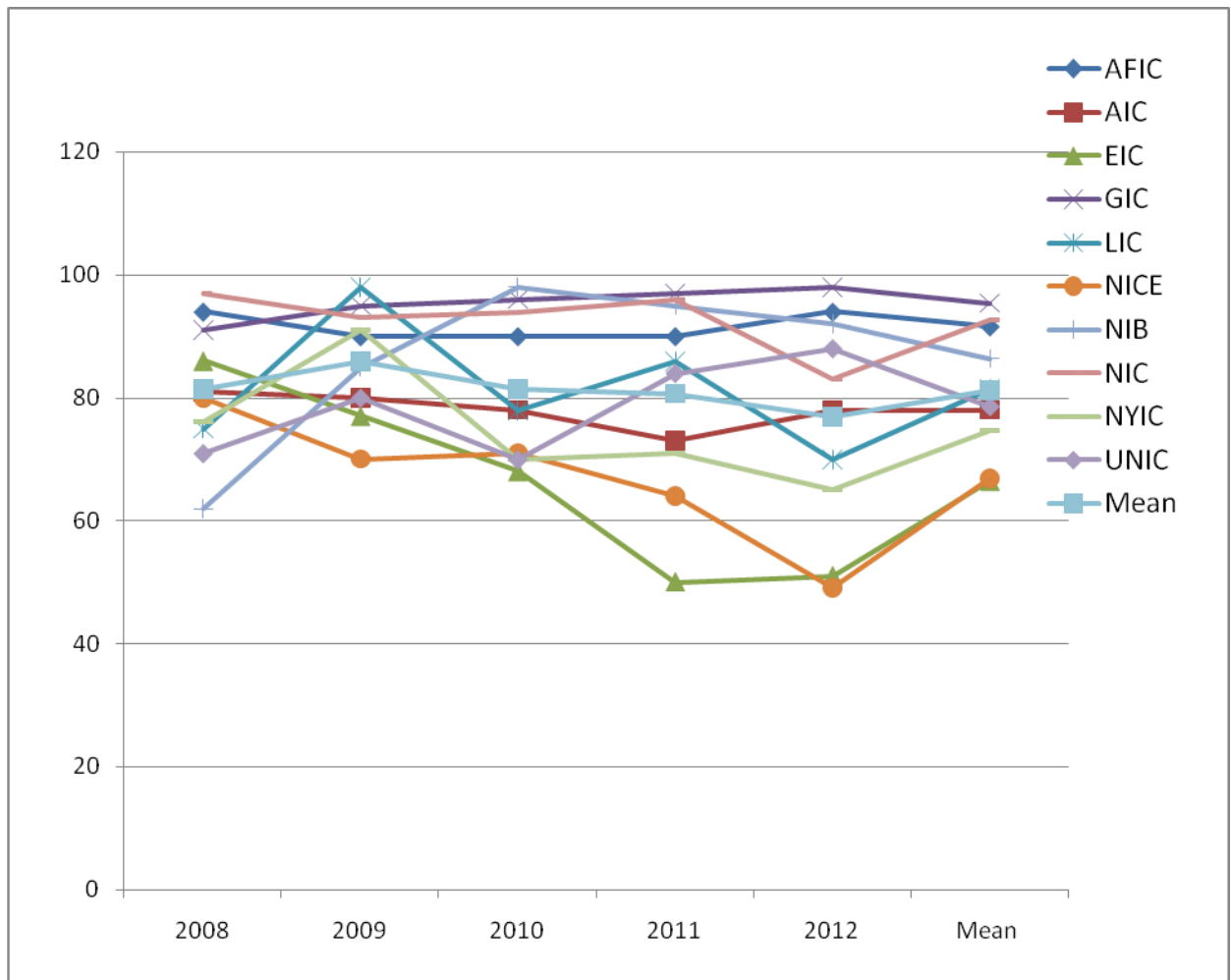
The trend analysis of Operating expense to Net premium is presented in the above figure, which shows almost there is the same level of average ratio of the industry during the study period (2008 to 2012). The trend also shows that the ratio of some insurance companies have a decrement movement. As we can see from figure 4.5.2, the industry average ratio of operating expense to net premium has decreasing movement indicating that the operating expenses of insurance industry in Ethiopia was decreasing during the study period.

Figure 4.5.3 Trend Analysis of Combined ratio

The combined ratio, as it is defined as the sum of claim ratio and expenses ratio, is presented in the above figure 4.5.3. The figure above indicates that there is fluctuating movement in the trend of the combined ratio. The average ratio of the industry also shows a fluctuation.

This fluctuation is due to the fact that insurance companies have no stable underwriting business as future is uncertain.
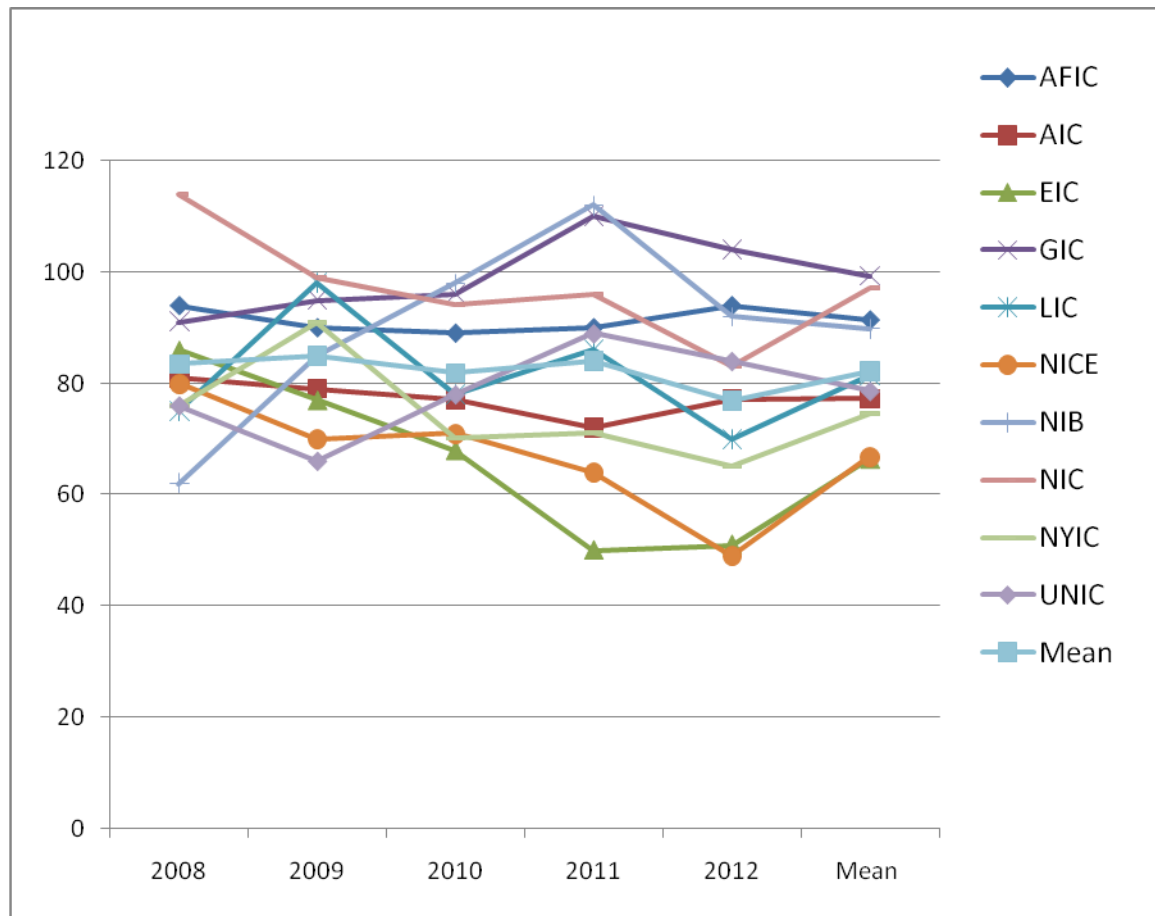
Figure 4.5.4 Trend analysis of Investment income to net premium
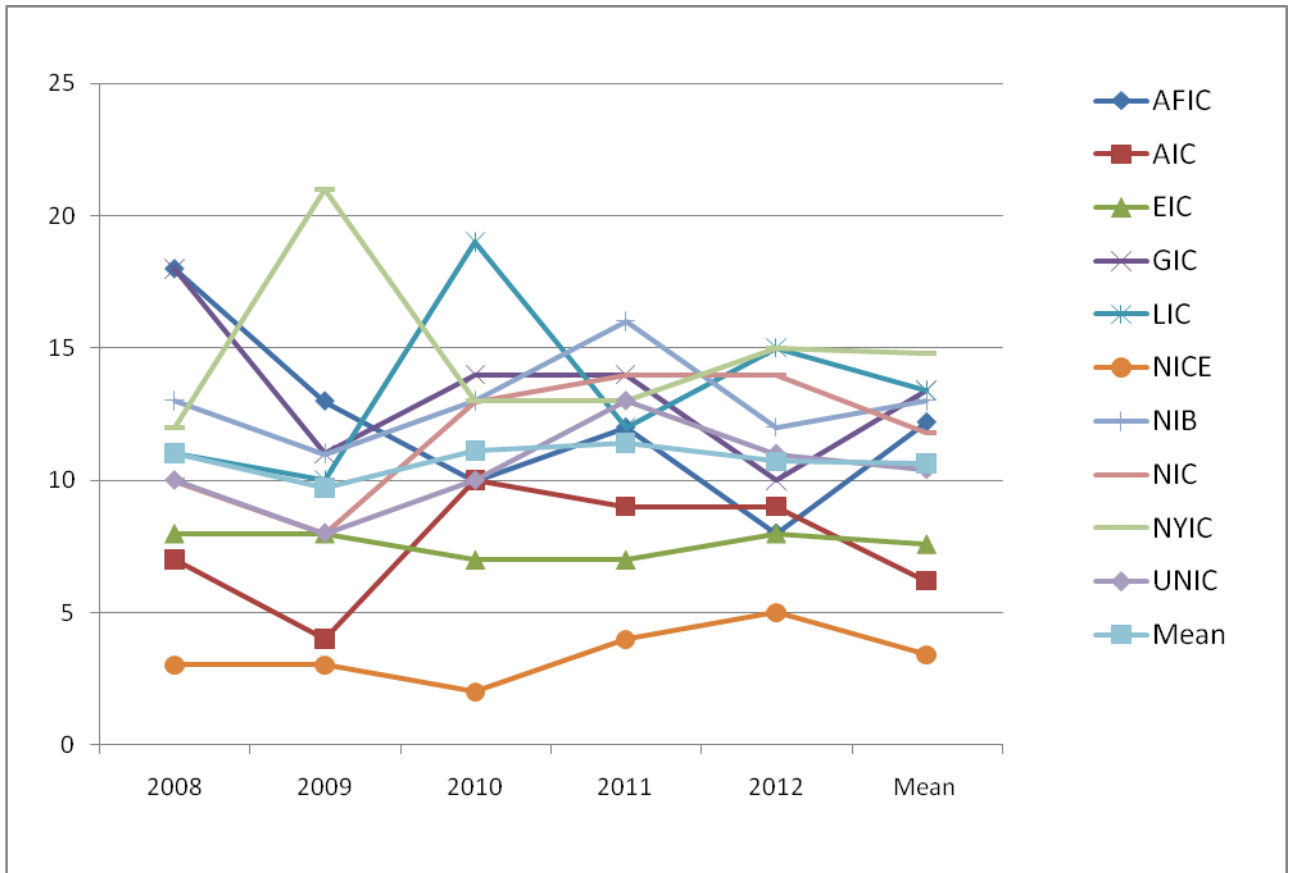
Source: computed from audited annual report of Insurance companies (2008-12)

The average ratio of three insurance companies (National Insurance company of Ethiopia, Africa Insurance Company, and Ethiopian Insurance Corporation), as it is seen clearly in the figure 4.5.4, are below and far from the industry average, reflecting the companies have low investment income during the study period, where as the average ratio of seven insurance companies are above the industry average, indicating their investment income is relatively better. The trend analysis of Investment income to Net premium of Ethiopian insurance industry shows that there is indefinite movement of the ratio, indicating that the investment in Ethiopian insurance industry is volatile or fluctuating through time.

4.6 Liquidity position of insurance companies in Ethiopia

Table 4.6 Current asset to Current Liability

Company	2008	2009	2010	2011	2012	Mean
AFIC	1.3	1.4	1.4	1.3	1.4	1.36
AIC	2	1.6	2.4	2.8	2.6	2.28
EIC	1.5	1.3	1.2	1.4	1.5	1.38
GIC	1.2	1.3	1.2	1.5	1.6	1.36
LIC	1.5	2	2.3	2.2	2.4	2.08
NICE	1.2	1.3	2.2	2.5	2	1.84
NIB	2.3	1.8	2	1.8	1.8	1.94
NIC	1.8	1.3	1.4	1.5	1.9	1.58
NYIC	1.6	1.5	1.5	1.6	1.9	1.62
UNIC	1.8	1.7	2	2	2.2	1.94
Mean	1.62	1.52	1.76	1.86	1.93	1.738

Source: computed from audited annual report of Insurance companies (2008-12)

Note: *current asset to current liability*

The incidence, magnitude and timing of insurance claims and or profit are uncertain, hence insurance need to plan liquidity carefully Das et al (2003).

The above table 4.6 shows the ratio of Current asset to current Liability and the ratios show increment after the second period of the study, from the fiscal year of 2009 to 2012 ranging from 1.52 to 1.9. The highest and lowest average current asset to current liability ratios are 1.9 and 1.52 in the year 2012 and 2009 respectively.

Figure 4.6.1 Trend analysis of liquidity position of Ethiopian insurance companies
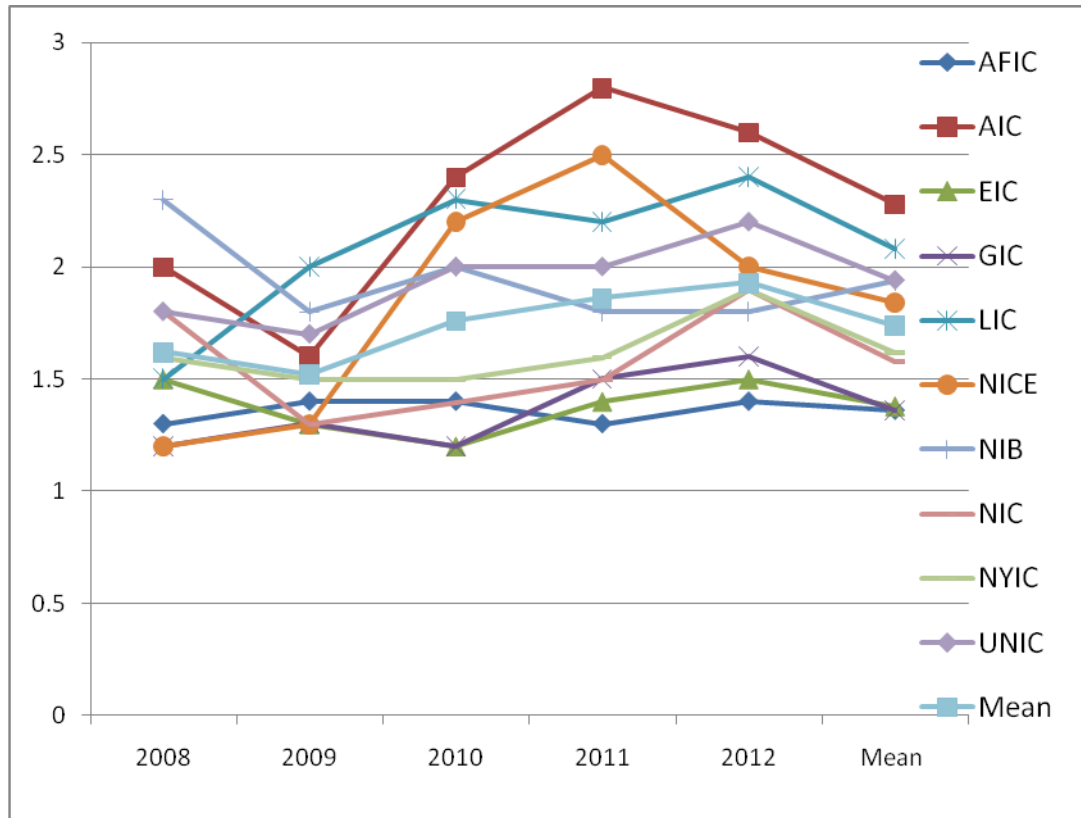
Source: computed from audited annual report of Insurance companies (2008-12)

The trend of liquidity position of insurance companies of Ethiopia was increasing from year to year, even if the average ratios of some insurance companies are below the industry average. The increment in the liquidity position of the insurance industry indicates insurance companies in Ethiopia are able to pay their short term debts obligations.

4.7 Return on Assets

Return on assets is the overall measure of profitability that reveals both the profit margin and efficiency of the company. It indicates how profitable a company is in relation to its total assets and well management is utilizing the company's total assets to make a profit. The higher the return, the more efficient management is in employing its asset base. The ROA is calculated as net income to average total assets, and is expressed as a percentage.

Table 4.7 Return on Assets (%)

company	2008	2009	2010	2011	2012	Mean
AFIC	19	16	33	35	44	25.8
AIC	64	39	41	23	66	41.8
EIC	56	79	73	64	63	68
GIC	25	44	40	46	25	38.8
LIC	25	-10	-5	24	23	8.5
NICE	20	49	35	27	34	32.8
NIB	19	16	17	26	29	19.5
NIC	29	21	14	40	20	26
NYIC	19	16	17	44	34	24
UNIC	17	18	24	19	28	19.5
Mean	29.3	28.8	28.9	34.8	36.6	30.5

Source: computed from audited annual report of Insurance companies (2008-12)

Note: Net income to Average total assets

The above table 4.7 contains the Return on Assets of the selected insurance companies in Ethiopia from the fiscal year of 2008 to 2012. As it is shown in the table above, the highest average ratio is 36.6% scored in the year 2012 where as the lowest ratio is 28.8% scored in the year 2009. The average ratio of return on assets of the industry shows an increment from the fiscal year of 2009 to 2012 (ranges from 28.8% to 36.6%). The increment in the Return on assets of the industry in turn indicates that the managements of the industry are efficiently utilizing the assets of the industry to generate profits.

Figure 4.7 Trends analysis of Return on Assets of insurance industry in Ethiopia
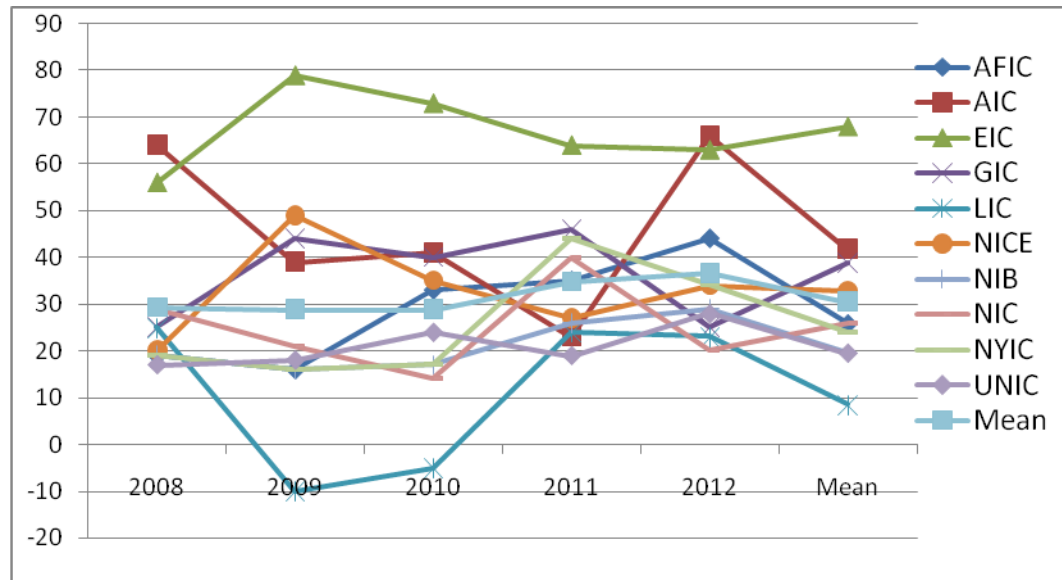
From figure 4.7 above, the trend analysis of return on assets of insurance industry in Ethiopia shows an increasing movement from the fiscal year of 2009. This shows that the financial performance of the industry shows improvement from time to time. The increasing trend of the return on assets is due to the fact that the net income of the industry is increasing through time as the management of the industry is efficiently utilizing the assets of the industry.

4.8 Determinants of insurance companies' performance

The data used in this research is panel type. Panel data may have group effects, time effects, or both. These effects are either fixed effect or random effect. A fixed effect model assumes differences in intercepts across groups or time periods, whereas a random effect model explores differences in error variances. Therefore, the researcher tested fixed effects versus random effects model as follows.

4.8.1 Hausman Test: Fixed Effects versus Random Effects

The Hausman specification test compares the fixed versus random effects under the null hypothesis that the individual effects are uncorrelated with the other regressors in the model (Hausman 1978). If correlated (H0 is rejected), a random effect model produces biased estimators, violating one of the Gauss-Markov assumptions; so a fixed effect model is preferred.

The Hausman specification test provided the p-value of 0.257 that is greater than 0.05 (see the appendix). Hence, we fail to reject H0 the individual effects are uncorrelated, meaning fixed effect model is not appropriate.

4.8.2 Breusch-Pagan Lagrange multiplier (LM) test

Still it is expected to test the appropriateness of random effects model this study. To do so, Breusch-Pagan Lagrange Multiplier (LM) is used.

The Breusch-Pagan Lagrange multiplier (LM) test is designed to test random effects. The null hypothesis of the random group effect model is that variances of groups are zero. The result of LM test reveals that the p-value is 0.3569 (see the appendix) which is greater than 0.05. Thus, it is possible to conclude that random effect model is not appropriate for this study. If so, the researcher can run simple OLS regression.

4.8.3 Test for normality of Data

According to Gujarati (2004), before regression analysis carried out, it should be noted that there are some classic assumptions in undertaking the regression analysis and one of them is normality of data. Therefore, normality test becomes relevant. Brooks (2008) also pointed out that in order

to conduct hypothesis test about the model parameter, the normality assumption must be satisfied. The normality assumption is about the mean of the residuals is zero. The researcher used Shapiro-Wilk test for normal data.

Based on this test if the p-value is less than 0.05, then the null hypothesis that the data are normally distributed is rejected. If the p-value is greater than 0.05, then the null hypothesis has not been rejected.

4.8.3.1 Shapiro-Wilk test for normal data

H0: Data are normally distributed

H1: Data are not normally distributed

The Shapiro-Wilk test of the study provided the p-value of 0.87 that is greater than the p-value of 0.05 (see the appendix). Hence, H0 is not rejected that means the data are normally distributed. The above test can be supported by figure as follows as follows

Figure 4.8 Normal probability plots
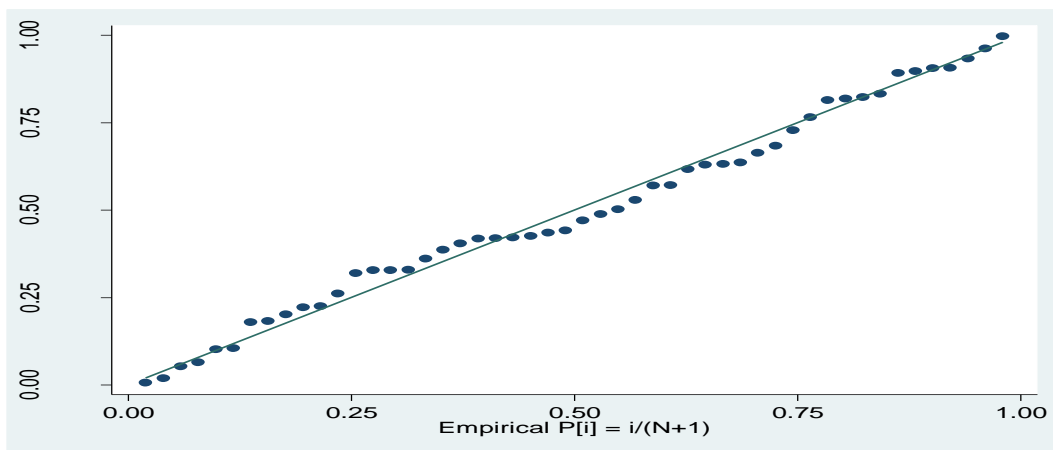
Source: coputed from stata 11.0

The above figure shows the normal distribution of residuals around its mean of zero. Hence the normality assumption is fulfilled as required based on the above figure, it is possible to conclude that the inferences that the researcher made about the population parameter from the sample is somewhat valid.

4.8.4 Test for Heteroskedasticity

The next important assumption for classical linear regression model is that the disturbances appearing in the population regression are homoskedastic that means the variance of the error term is consistent. If errors do not have a constant variance (not homoscedastic), they are said to be Hetroskedastic Brooks (2008).

To check the problem of hetroskedastisty, the researcher used Breusch Pagan test based on the following null and alternative hypothesis

H0: there is no hetroskedasticty problem in the model

H1: there is hetroskedastisty problem in the model

It is obtained from Breusch Pagan test that the p-value of 0.4252 (see the Appendix) which is clearly above p-value of 0.05. If so, we do not reject the null hypothesis, meaning there is no hetroskedasticity problem.

4.8.5 Test for Multi-collinearty

Gujarati (2004), stated that multi- collinearly is the presence of a "perfect," or exact, linear relationship among some or all explanatory variables of a regression model.

The researcher used the VIF and tolerance to check whether there is the problem of multi-collinearly or not among the explanatory variables in the model.

Table 4.8.1 Test for Multi-collinearty

Variable	VIF	1/VIF
OEGP	4.62	0.216450
COMR	2.90	0.344827
NPGP	3.63	0.275418
KTA	1.95	0.512070
ONETA	1.82	0.550917
NTRNC	1.58	0.633273
CACL	1.16	0.859947
Mean VIF	**2.52**	

Source: computed from stata 11.0

The above table shows the relationship between each independent variable (Capital adequacy, Assets quality, Re-insurance, Actuarial issues, Management efficiency, Earning and profitability and Liquidity). A tolerance value (is an indicator of how much of the variability of a specified

independent variable is not explained by the other independent variable) less than 0.1 and if the value of Variance Inflation Factor (VIF) is above 10, indicate there is multicollinearty among the independent variables (Morgan et al, 2004). The result in the above table is obtained from the computation by Stata 11.0 and indicates that there are no tolerance values below 0.1 and the values of VIF greater than 10, suggesting the model is free from multicollinearty problem. Therefore, all variables (Capital adequacy, Assets quality, Re-insurance, Actuarial issues, Management efficiency, Earning and profitability and Liquidity) can be retained in the model.

Table 4.8.2 Model determination

ROA	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
KTA	.359729	.1729322	2.08	0.044*	.7087202	.0107377
ONETA	-.5257841	.2048493	-2.57	0.014*	-.9391867	-.1123815
NPGP	.547825	.2564702	2.14	0.039*	.0302471	1.065403
NTRNC	.0439648	.0771171	0.57	0.572	-.1116638	.1995933
OEGP	-1.77791	1.179393	-1.51	0.139	-4.158022	.6022025
COMR	-2.443216	.7991895	-3.06	0.004**	-.8303862	4.056046
CACL	-.0122617	.0104894	-1.17	0.249	-.0334302	.0089068
_cons	.6051921	.1839325	3.29	0.002**	.2340013	.976383

*significant at 5% level and ** significant at 1%

Source: computed from stata 11.0

Hence the model developed for the study has been determined as follows

$ROA = á+â_1KTAit+â_2ONETAit+â_3Rit+ â_4Ait+â_5MEit+â_6EPR_3it+â_7LRit + εε$

$ROA= 0.61+ 0.36KTA -0.53ONETA+0.55R+0.04A -1.78ME -2.4EPR -0.01LR$

[.184] [.173] [.205]   [.256] [.077] [1.179] [.799] [.010] adj-R^2 = .412

The above model indicates that when asset quality and combined ratio decreased by one unit, ROA is expected to increase by 0.52 units, and 2.4 units respectively however, one unit increase in capital adequacy and in re-insurance will lead to 0.36 and 0.55 units increase in ROA. Actuarial issues, management efficiency and liquidity have no significant relationship with ROA of insurance industry in Ethiopia.

The adjusted R square indicates how well the model variance has been explained (Morgan et al 2004). It is found that the adjusted R square of this model is 41.2% (see the Appendix), meaning 41.2% of the model is explained by the independent variables collectively (the dependent variable, ROA, is explained by Capital adequacy ratio, asset quality ratio, reinsurance, actuarial issues, combined ratio and liquidity ratio) and the remaining is explained by other variables or factors. It reflects that CARAMEL frame work can be used as the measurement of financial performance of insurance industry in Ethiopia.

4.8.6 Findings and Discussion

After analyzing the data it was found that;

Capital adequacy ratio has a significant (P-value is 0.044) and positive effect on the ROA and this result is consistent with the previous study of Noor (2004), Yuqi (2007) Hafiz Malik (2011) and Mohammed (2013) and Abate (2011). In fact, adequate capital is regarded as the amount of capital that can effectively protect insurance companies' operations from failure by absorbing losses. Since sufficient capital is used to absorb all losses and cover fixed assets of the insurance company leaving a comfortable surplus for the current operation and future expansion, it has a positive impact on performance (ROA) of insurance industry. Hence, we do not reject the first hypothesis that capital adequacy has a positive effect on ROA of Ethiopian insurance industry.

Asset quality (proxied by owners' equity to total assets) of insurance industry in Ethiopia has a significant and negative effect on the return on assets of the industry (P- value and t-value are 0.014 and -2.57 respectively). This outcome is consistent with the result of Khalid (2012). A company with a higher equity ratio is more faced to lose for huge portion of its earnings is spent in paying interest and it is also difficult for the company to get loan from banks or other financial institutions. Thus the assets quality adversely affects the financial performance of insurance industry in Ethiopia. Hence, the second hypothesis that there is a positive relationship between asset quality and ROA is not accepted.

The regression result presented in the table 4.7.2 indicates that the p-value of reinsurance is 0.039 and the t-value is 2.14 indicating re-insurance has a significant and positive effect on financial performance of insurance industry in Ethiopia. This result is consistent with previous study (David et al, 2012). The reinsurance, by virtue of its support of the primary insurance industry, contributes to the smooth operation of the free enterprise system. This is accomplished by increasing the capacity of the primary carriers and strengthening their financial position. Hence, we do not   reject the third hypothesis.

The regression result presented in the table 4.7.2 above shows that the p- value and t- value of management efficiency are 0.139 and -1.51 respectively indicating management efficiency has no effect on ROA of insurance industry in Ethiopia. This outcome is consistent with the findings of Schweiger and Friebel (2013) and Alexandre and João (2008) but not consistent with the findings

of Marianne and Antoinette (2003) and Panayiotis et al (2013). Therefore, the fifth hypothesis that there is a negative relationship between management efficiency and ROA of insurance industry in Ethiopia is rejected.

Combined ratio has significant and negative effect on ROA with p-value and t- value of 0.004 and 3.06 respectively. This is consistent with previous study (Chen and Wong, 2004). Combined ratio the sum of loss and expense ratio, is the basic and commonly used measure of profitability (measures performance of underwriting operation) of insurance industry Das et al (2003). That is for every birr that an insurer collects as a premium, a certain portion of that is paid out for the expenses and overheads and the remaining premiums are invested and when needed used to pay loses. Hence, combined ratio adversely affects the financial performance of insurance industry in Ethiopia. Thus, the six hypotheses that combined ratio and ROA has negative effect, is not rejected.

Liquidity has no significant effect on ROA. This result is consistent with previous findings of Adams and Buckle (2000) and Bilal et al (2013) but contradicted with the findings of Chen and Wong (2004) and Almajali et al (2012). Liquidity measures the ability of managers in insurance companies to fulfill their immediate commitments to policyholders and other creditors without having to increase profits on underwriting and investment activities and liquidate financial assets. Thus, H7 is not accepted.

CHAPTER FIVE

Conclusions and Recommendations

The previous chapter contained the data analysis and the findings of the study. This chapter contains the conclusion drawn and recommendation given based on the major findings in the previous chapter.

4.1 Conclusions

The researcher drawn the following conclusions based on the result of the data analysis and the objectives set in the very beginning of the study. Thus, the researcher reached on the following conclusions.

CARAMEL frame work was used to determine the financial performance of insurance industry in Ethiopia and ROA proxied by net income to average total assets was used as the measure of financial performance of insurance industry in Ethiopia.

The researcher found that capital adequacy and re-insurance have a positive effect on ROA where as combined ratio and assets quality have negative effect on ROA. Actuarial issues, management efficiency and liquidity have insignificant effect on ROA of insurance industry in Ethiopia.

The significant positive relationship of Capital adequacy with ROA of insurance industry in Ethiopia implies that adequate capital can effectively protect insurance companies' operations from failure by absorbing losses.

The asset quality of insurers is the measure of confidence on equity to built sound and quality assets portfolio of the company. The ratio of equity to total assets of insurance industry in Ethiopia shows minor fluctuation in the last five years. This in turn indicates that insurance industry in Ethiopia has slight fluctuation of owners' equity in proportion of Total assets.

Reinsurance of risks is to mean sharing of premium, claims and profits. The retention of more underwritten business shows increasing risk bearing capability of insurers, which is a healthy sign in insurance business. The retention ratio of Ethiopian insurance industry shows a decreasing movement on the average ratio of the industry. This reflects that insurance companies in Ethiopia

are relying on the re-insurer to some extent or their capacity to retain the underwritten business is decreasing through time. The positive relationship of re-insurance with ROA of insurance industry is an indication that by virtue of its support of the primary insurance industry, re-insurance contributes to the smooth operation of the insurance industry.

Actuarial issues ratio also called survival ratio, of Ethiopian insurance industry shows a slight fluctuation during the study period. The fluctuation is due to the fact that insurance companies are expected to adjust their technical reserve based on the claims incurred from the underwritten business.

Management soundness in insurance business means operational soundness. The ratio of operational expense to gross premium indicates the operational efficiency of the insurance company and reflects cost efficiency of the business, which finally reflects the efficiency of decisions concerning proper utilization of funds. The ratio of management soundness of Ethiopian insurance industry has a decreasing movement through the study period indicating the management of insurance companies of Ethiopia are decreasing their operational expenses or are properly utilizing funds.

The average combined ratios of insurance industry in Ethiopia are not above 100% during the study period indicating insurance companies of Ethiopia are making underwriting profits. The highest and lowest average combined ratios of insurance industry in Ethiopia are 85% and 76.9% in the year 2009 and 2012 respectively. This indicates that the industry recognized a 15% and 23.1% underwriting profit in the fiscal year of 2009 and 2012 respectively.

The average liquidity ratio of insurance companies of Ethiopia is above 1; hence, they can able to pay their short term debt obligations.

The average ratio of return on assets of the industry shows an increment from the fiscal year of 2009 to 2012 (ranges from 28.8% to 36.6%). This is due to the fact that the net income of the industry is increasing through time as the management of the industry is efficiently utilizing the assets of the industry.

4.2 Recommendation

Based on the conclusion drawn above the researcher provided the following recommendations.

Management and regulators of Insurance companies in Ethiopia should give due attention on capital adequacy as it is vital to absorb losses arising from underwriting business and should set the minimum requirement of the capital adequacy for the insurance industry as is applicable for banks.

The insurance companies should focus on their assets quality. Inclusion of more equity will surely make the asset quality of the insurers better. Contrary, the higher the equity ratio will face the company to lose for huge portion of its earnings spent in paying interest. Hence, insurance industry should have reasonable equity in its portfolio.

For the improvement of reinsurance ratio, proper management of premium will help insurers to retain and manage maximum risk efficiently.

Other researchers should incorporate the financial and non financial performance of both non life and life insurance companies in Ethiopia.

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APPENDICES

Appendix 1 List of insurance companies in Ethiopia as of 2013

s.no	Insurance companies	Year of Establishment
1	*Abay insurance company	2010
2	Africa Insurance Company s.c.	1994
3	Awash Insurance Company S.C	1994
4	*Berhan insurance S.c	2011
5	*Ethio-Life and General Insurance S.C.	2008
6	Ethiopian Insurance Corporation	1975
7	Global Insurance Company S.C.	1997
8	Lion Insurance Company S.C	2007
9	National Insurance Company of Ethiopia S.C.	1994
10	Nib Insurance Company	2002
11	Nile Insurance Company S.C	1995
12	Nyala Insurance Company S.C	1995
13	*Oromia Insurance Company S.C.	2009
14	*Tsehay Insurance S.C.	2012
15	The United Insurance S.C	1997

Note: * insurance companies not selected for the study

Source: http://www.nbe.gov.et/financial/insurer.html

Appendix 2 Regression analysis results

Fixed effects

ROA	Coef.	Std Err.	T	P>|t|]	[95% Conf.	Interval]
KTA	.0247388	.3543825	0.07	0.945	-.6962577	.7457354
ONETA	-.4166097	.2532368	-1.65	0.109	-.9318237	.0986044
NPGP	.3586712	.2488333	1.44	0.159	-.147584	.8649264
NTRNC	-.1174367	.1758338	-0.67	0.509	-.4751732	.2402997
OEGP	-2.890061	1.325177	-2.18	0.036	-5.586155	-.1939682
COMR	-2.701793	.9783998	2.76	0.009	.7112238	4.692363
CACL	-.011687	.0107308	-1.09	0.284	-.033519	.0101449
_cons	.62395	.2586244	2.41	0.022	.0977747	1.150125
sigma_u	.12632814					
sigma_e	.11769584					
Rho	.53533061					

Source: computed from stata 11.0

Random effects

ROA	Coef.	Std. Err.	Z	P>|z|	[95% Conf.	Interval]
KTA		.2206293	-1.00	0.315	-.6539123	.2109386
ONETA	-.4469637	.217885	-2.05	0.040	-.8740105	-.0199169
NPGP	.429386	.2384461	1.80	0.072	-.0379599	.8967318
NTRNC	.0129907	.1018466	0.13	0.899	-.1866249	.2126063
OEGP	-2.237987	1.175787	-1.90	0.057	-4.542487	.0665129
COMR	-2.494188	.8234837	3.03	0.002	.8801894	4.108186
CACL	-.0130009	.0097359	-1.34	0.182	-.0320829	.0060811
_cons	.6410682	.1901714	3.37	0.001	.2683391	1.013797
sigma_u	.08376549					
sigma_e	.11769584					
rho	.33622445					

Source: computed from stata 11.0

Hausman fixed random

	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fixed	random	Difference	S.E.
KTA	.0247388	-.2214869	.2462257	.2773259
ONETA	-.4166097	-.4469637	.030354	.1290541
NPGP	.3586712	.429386	-.0707148	.0711439
NTRNC	-.1174367	.0129907	-.1304274	.1433345
OEGP	-2.890061	-2.237987	-.6520744	.6112444
COMR	-2.701793	-2.494188	. -0.207605	.5283378
CACL	-.011687	-.0130009	.0013139	.0045125

chi2(7)   = 8.94

Prob>chi2 = 0.2570

Source: computed from stata 11.0

Breusch-Pagan Lagrange multiplier

chi2(1) = 0.85		
Prob>chi2=0.3569		

Source: computed from stata 11.0

Shapiro-Wilk test

Variable	Obs	W	V	Z	Prob>z
R	50	0.98755	0.585	-1.142	0.87320

Source: computed from stata 11.0

Test for Heteroskedasticity

chi2(1) = 0.64	
Prob > chi2 = 0.4252	

Source: computed from stata 11.0

Correlation

	ROA	KTA	ONETA	NPGP	NTRNC	OEGP	COMR	CACL
ROA	1.0000							
KTA	-0.3013	1.0000						
ONETA	-0.2097	0.3788	1.0000					
NPGP	-0.0016	0.2720	0.1281	1.0000				
NTRNC	-0.0693	0.5061	0.1431	0.2160	1.0000			
OEGP	0.3186	0.2047	0.5372	0.2788	0.2585	1.0000		
COMR	0.4125	0.1303	0.4483	-0.1297	0.1241	0.5749	1.0000	
CACL	-0.1875	0.1811	-0.1700	-0.1465	0.0700	-0.1718	-0.0897	1.0000

Source: computed from stata 11.0

ANOVA

Sources	SS	df	MS	Number of obs =50
Model	.770899173	7	.110128453	F(7,42)=5.9
Residual	.784327374	42	.018674461	Prob>F=0.0001
				R-squared=0.4957
Total	1.55522655	49	.031739317	Adj R-squared=0.4116
				Root MSE=.13665

Source: computed from stata 11.0

Summary of Statistical results

OLS test results		
ROA		
Variables	Relationship	Sign
KTA	Significant	+
ONETA	Significant	-
NPGP	Significant	+
NTRNC	Insignificant	+
OEGP	insignificant	-
COMR	significant	-
CACL	Insignificant	-

Source: computed from stata 11.0