COLLEGE BUSINESS AND ECONOMICS

DEPARTMENT OF ECONOMICS

ETHIOPIAN INSURANCE SECTOR DEVELOPMENT AND ITS CONTRIBUTION TO ECONOMIC GROWTH

A RESEARCH PAPER SUBMITTED TO DEPARTMENT OF ECONOMICS, FOR THE FULFILLMENT OF THE REQUIREMENTS FOR BACHELOR OF ARTS DEGREE IN ECONOMICS

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DECLARATION

I, Shamil Shazeli, hereby declare that this thesis work entitled “Ethiopian Insurance Sector Development and Its Contribution to Economic Growth” is outcome of my own effort and study and that all sources of materials used for the study have been appropriately acknowledged.

To the best of my knowledge, this study has not been submitted for any degree in this University or any other University. It is offered for the partial fulfillment of the Bachelor degree in economics

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APPROVAL SHEET

This is to certify that the research entitled: "**Ethiopian Insurance Sector Development and Its Contribution to Economic Growth**" submitted in partial fulfillment of the requirements for the Bachelor degree in Economics, of the Department of Economics, and has been carried out Shamil Shazeli under my/our supervision. To the best of my knowledge, is an original work and not submitted earlier for any degree either at this University or any other University.

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LIST OF ACRONYMS

EIC- Ethiopian Insurance Company
NBE- National Bank of Ethiopia
NAICOM - National Insurance Commission
OLS- Ordinary Least Square
RGDP- Real GDP is used as a proxy for economic Growth
TIPM- Total Insurance Premium
TICL- Total Insurance Claim
TIPR- Total Insurance Profit
TINV- Total Insurance Investment
VAR-Vector Auto Regressive
VECM- Vector Error Correction Model

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ABSTRACT

The study examines the contribution of Ethiopian Insurance industry to the economic growth. It analyses both the long run and short run dynamics among important determinants of variables over the period 34 years (1984-2019). Using unit root tests and Johansen Co integration tests are applied to investigate relationship among the variables respecting. Error correction model has been used to analysis the long run and short run movements of variables. A pair wise granger causality test has also used to examine the causal relationship among the variables in the model. The regression result indicated that insurance premium positive and insurance claim negative has significant and relationship with economic growth. However insurance profit has positive significant and insurance investment has negative but insignificant relation with economic growth. The result of granger causality test indicates that there is unidirectional relationship from economic growth to insurance premium, insurance claim and insurance profit. However insurance investment has no causal relation with any variable in short run. The implication of this finding is that there is a causal relationship between insurance performance and economic growth. The study concludes that the economic growth has positive impacts on the growth of insurance development.

Key Words: *Economic Growth, Insurance sector, development, VECM and Ethiopia*

Chapter one

1 Introduction

1.1 Background of study

In modern society, financial industry is growing rapidly and gaining importance in the global financial development. The financial system comprises of financial institutions, financial instruments and financial markets that provide an effective payment, credit system and risk transfer and thereby facilitate channelizing of funds from savers to the investors of the economy. According to Frederic & Eakins (2009), financial institutions not only affect our everyday life but also involve huge flows of funds, which in turn affect business profits, the production of goods and services, and even the economic well-being of countries.

The financial institutions enable an economy to be more productive as it allows investors with few resources to use savings from those with few prospects of investing. Research surveyed by reveals that the efficiency of financial intermediation and transfer of risk can affect economic growth while at the same time institutional insolvencies can result in systemic crises which have unfavorable consequences for the economy as a whole. Hence, the important role that financial institutions such as insurance companies remain in financing and insuring economic activity and contribute to the stability of the financial system in particular and the stability of the economy of concerned country in general is part of immune and repair system of the economy. The insurance sector plays important role in the financial services industry in almost developed and developing countries, contributing to economic growth, efficient resource allocation, reduction of transaction costs, creation of liquidity, facilitation of economics of scale in investment, and spread of financial losses (Haiss and Sumegi, 2008)

Insurance market activity, both as a financial intermediary and provider of risk transfer and indemnification, may contribute to economic growth by allowing different risks to managed more efficiently and by mobilizing domestic savings Arena (2006). Risks and insecurity are an integral part of our daily lives. Managing these risks in the best possible way is one of the major challenges for each individual, each business as well as society as a whole. Therefore, Insurance financial system is the prerequisite for sustainable economic growth and prosperity.

Arena (2006) tests whether there is a causal relationship between insurance market activity (life and non-life) and economic growth. Using the generalized method of moments for the dynamic model of panel data for 56 countries and for the 1976-2004 periods The results of the study are first, robust evidence of a causal relationship of insurance market activity on economic growth. Both life and non-life insurance premium have a positive and significant effect on economic growth. Gabriel (2015) applied to annual Nigeria data spanning from 1981-2013.The results of study reveals that total insurance investment and total insurance premium has contributed positively and significantly, While total claim payment has a significant, negative correlation to economic growth .This suggested in the study that the national insurance commission (NAICOM) should monitor claims payment of the insurance companies so as to ensure transparency, avoid extortion and incorporate prudency which will in-tern trigger the public confidence in the service rendered by the insurance companies, hence promote economic growth.

The history of insurance in Ethiopia stands from the establishment of Bank of Abyssinia in 1905. The bank began transacting fire and marine insurance as an agent of a foreign insurance company. During the Italian invasion from 1936 to 1941 only Italian insurance companies operated in Ethiopia. After exit of Italy, other European insurance companies were restarted to operate insurance activities in Ethiopia (Axco, 2017). As Belay, (2001) and Abate, (2012) described that insurance activities was made by 18 foreign insurance companies, branches or agents and one domestic insurance company called Imperial Insurance company in 1954. After the issuance of insurance sector proclamation No 281/1970, there were licensed 15 domestic insurance companies, 36 agents, 7 brokers, 3 actuaries & 11 appraisers Zeleke, (2007), cited by (Henok, 2016). During the Dergue regime in 1975, all insurance companies were nationalized and formed a single state owned insurance company (EIC) (Hailu, 2007).

Then all insurance companies operating were nationalized and from January 1, 1975 onwards the government took over the ownership and control of these companies & merged them into a single unit called Ethiopian Insurance Corporation. The insurance sector during the command economic system was characterized by monopoly of the sector by the government, lack of dynamism and innovation, volatile premium growth rates and reliance on a couple of classes of insurance business (motor and marine) for much of gross premium income. The nationalization of private insurance companies, the restrictions imposed on private business ventures, and

management of the insurance sector had significant adverse impact on the development and growth of Ethiopian insurance industry (Hailu, 2007). However, following the change in the political environment in 1991, the proclamation for the licensing and supervision of insurance business No. 86/1994 heralded the beginning of a new era

Today the total number of insurance companies remained at 17 their branches rose to 568 following the opening of 36 new branches. About 53.7 percent of the branches were located in Addis Ababa and 84.5 percent of the total branches were private. Insurance companies increased their total capital by 49.5 percent to Birr 8.2 billion, of which, the share of private insurance companies was 68.3 percent and that of public insurance company was 31.7 percent (annual report NBE, 2018/2019).

1.2 Statement of the problem

Insurance plays a significant role in a country's economic growth and offers financial protection to an individual or firm against monetary losses suffered from unforeseen circumstances (Kihara, 2012).This is because the world is characterized by risks and uncertainties and insurance has evolved as a way of providing security against the risks and uncertainties.

Risk is unavoidable and present in every human situation. It is present in daily lives, public and private sector organizations. Depending on the context (insurance, stakeholder, technical causes), there are many accepted definitions of risk in use. The risks, which our ancestors faced, living in their relatively simple societies, were basic in nature and required commensurately simple methods of management. By comparison, today's societies, having been transformed by enormous changes, are full of more complex risks and hazards that call for more sophisticated and scientific systems of risk management. As an economic institution, insurance involves not only risk transfer but also pooling and risk reduction. Pooling is the sharing of total losses among a group. Pooling within a large group facilitate risk reduction, which is a decrease in the total amount of uncertainty present in a particular situation (Theis, A,D., 2015)

A key role in social risk management is played by private insurance offering the most effective solution for many risks. The basic underlying principle of private insurance is the pooling of risks across the community of insured, complemented by other risk management instruments such as tapping in to international re- insurance markets. Insurers are the biggest group of

institutional investors and their focus on long-term investments makes them an anchor of stability in the financial markets. Further, risks and insecurity are an integral part of our daily lives. Managing these risks in the best possible way is one of the major challenges for each individual, each business as well as society as a whole. Therefore, Insurance financial system is the prerequisite for sustainable economic growth and prosperity. Haiss and sumegi (2008)

There are different schools of thought on the nature of the relationship between insurance and economic growth. According to Haiss and sumegi (2008) insurance leads to economic growth while in contrast Patrick (1966) argues that economic growth leads to the development of insurance sector. Moreover, there is research debate continues today on the interaction between insurance development and economic growth. This is also an issue when it comes to Ethiopian insurance industry and its contribution to Economic growth. Kahase, (2018) studies on topic of Ethiopian insurance sector and its contribution to economic growth and on his finding, insurance premium and insurance claim has significant and negative relationship with economic growth in the long run and short run dynamics. However, insurance profit has positive and significant effect and insurance investment has positive but insignificant relation with economic growth in Ethiopia.

This study will be tries to fill the research gap by using the variable total insurance premium, total insurance claim, total insurance profit and total insurance investment by including recent time series data (1984-2019) while focusing on the empirically investigate the effect of insurance development on the economic growth in Ethiopia. The result is expected to analyses the importance of insurance development on the economic growth in Ethiopia.

1.3 Objective of the study

1.3.1 General objective

- ✓ The general objective of this study is to examine the effect of Insurance sector development on Economic Growth in Ethiopia. `

1.3.2 Subjective of the study

- ✓ To empirically investigate the contribution of insurance development on the economic growth in Ethiopia
- ✓ To investigate the relationship between insurance development and economic growth in Ethiopia.

1.4 Research question

- ✓ To what extent does change in insurance premium explain change in economic growth?
- ✓ What is the causal relationship between economic growth and insurance development in the case of Ethiopia?

1.5 Significance of study

The findings of this study will be of great importance to policy makers and insurers, investors, regulators, researchers and financial analyst who have vested interest in understanding the importance of insurance contribution and the extent of degree of insurance sector development on economic growth. It's may contribute its part on the existing policy debates and add information to the existing knowledge. It will also benefit to the policy makers to modify or come up with the policies that will better to the country. Finally, the research findings will fill the knowledge gap in the field of study.

1.6 Scope and limitation

This study was focus on explaining contribution of insurance industry to the country's economic development based on the selected variables.

The employed secondary data was collected from National Bank of Ethiopia, Ethiopian Insurance Corporation and World Bank data base. However, these companies as well as other concerned institutions have not every vital data which were important to this study. In connection with lack of organized and diversified data, the researcher dropped and modified some targeted variables and changed by other variables

1.7 Organization of study

The paper would be organized into five chapters. The first chapter of study deals with background of the study, statement of the problem, objective of the study, research questions, significance of the study, scope and limitation of the study and organization of the study. The second chapter discusses the theoretical and empirical literature review and summary of literature and chapter three will be discussed the methodology of the study. Finally concussion and recommendation include in chapter five.

Chapter Two

2 Literature Review

2.1 Theoretical Literature Review

2.1.1 Concepts and definitions of financial system

A financial system is a network of financial institutions and markets dealing in a various financial instruments which are involved in money transmission activities and provision of credit facilities. Insurance company is the other financial institution which provides unique financial services by managing risk of the society and business entities (Hanna, 2015). It provides financial protection to an individual or firms against the monetary losses which are suffered from unforeseen circumstances (Kihara, 2012).

The indemnification and risk pooling properties of insurance facilitates commercial transactions and provisions of credit by mitigating losses and management of non-diversifiable risk to promote economic activities (Ndalu, 2017). According to Haiss and Sumegi, (2008) insurance companies have a sound contribution on efficient resource allocation, reduction of transaction costs, creation of liquidity, facilitation of economics of scale in investment and spread of financial losses.

2.1.2 Theories of Economic Growth

According to Eze and Okoye (2013), the growth theory states that well developed financial intermediation can promote economic growth through marginal productivity of technological innovation.

Webb, et al. (2005) also further revised Solow-Swan model predicts that insurance and banking spur capital stock productivity, in turn driving the level of investment and output and he is asserted that it is generally agreed that productivity gains come from improvements in the quality of investment or capital stock and not just increases in the level of investment.

2.1.3 Insurance development and Economic growth

According to Downey (1991), Insurance can be defined as a system which allows people who suffer loss or accident to be paid financial compensation for the effects of that misfortune. These payments come out of a fund which is built up from the contribution of the people who participate in the system of insurance for that particular risk. Insurance has a long history. There is evidence that a form of marine insurance was in operation at least 3,000 years ago.

In recent years there has been the development of large single risks such as supertankers and wide bodied aircrafts, where one single item can be valued in millions of amounts because of the loss of such large sums of money there has developed big business in re insurance this means that such large risks are not covered by one single company but are passed on to a number of other companies. There are also various new types of insurance such as kidnap insurance, libel (particularly useful for newspaper), and insurance against pollution, against having twins and against even rain on fete days (pluvial poleis to name but few). Insurance can be divided in to Life insurance and pension, General Insurance, Marine and Aviation Insurance as well as Re-insurance Downey (1991).

2.1.4 Classification of Insurance Products

Insurance can be classified in many ways, but the following four classifications provide a useful framework: Social versus Private, Life versus Non-life, Retail versus Corporate and Direct insurance versus reinsurance. The insurance business has historically divided itself between companies that sell insurance on the person, known as life insurance (or personal insurance), and those that sell insurance to protect property, referred to as non-life insurance. This classification is not completely satisfactory, as overlaps exist. The non-life branch often referred to as property/causality insurance in united states and general insurance in the United Kingdom-includes insurance that be covers (1) property losses(damage to or destruction of homes, automobiles, business, aircrafts, etc.); liability losses (payments due to professional negligence, product defects, negligent automobile operation, etc.); and, in some countries, workers' compensation (and health insurance payments). The life branch includes insurance that pays benefits on a person's (1) death (usually called life insurance or assurance), (2) living a certain period (endowments, annuities, and pensions), (3) disability (disability insurance), and (4) injury

or incurring a disease (health insurance).In many countries ,notably in Europe, health insurance is classified as non-life (Skipper,2001).

2.1.5 The role of Insurance in Economic Development

Skipper (2001) defined insurance is both a risk- shifting and risk- sharing and device, for a consideration (the premium),an individual or organization(the insured) is guaranteed to be made whole financially by the insuring organization(the insurer) if a covered event occurs. The entire scheme functions so long as the insurer is able to insure a sufficient number of similar exposures to keep its overall claims experience reasonably predictable. Generally, the law of large numbers dictates that the greater the number of insured's (policy holders) the more predictable the insurer's experience. He further explores the role of insurance in economic growth development and argues to view insurers that, it is wrong that the role of insurance is considered merely as "pass-through mechanisms for diversifying risks." Under which the unfortunate few who suffer losses are indemnified from the funds collected from the funds from many insured.

Grant (2012) further summed up the contribution of insurance to society and economic growth in the study of the social and economic value of insurance, through the following factors: It allows different risks to be managed more efficiently; it encourages loss mitigation; it enhances peace of mind and promotes financial stability; it helps relieve the burden on governments for providing all services of social protection to citizens via social security systems;, it facilitates trade and commerce, supporting business and economic growth ,it mobilizes domestic savings; and it fosters a more efficient allocation of capital, advancing the development of financial services.

2.1.6 Insurance as Method of Risk Transfer and Economic Growth

Insurance as risk management or risk transfer is measured as proceed total insurance premium (TIPR) in this study. Insurance uses a concept of risk pooling that allows them to accept responsibility for the economic losses of theirs insures. Many people are willing to pay a relatively small premium in order to transfer of the risks of much greater potential loss. Insurance issue policies to those individuals, knowing that only a small percentage of the insured actually will become damaged and or disabled while their policies are in effect. By collecting premiums from individuals and business that transfer the risk of disability, the insurer s spread the cost of the relatively few losses that are expected to occurred among all insured persons, Insurance thus

protects against the risk of economic loss by applying a simple principle that 'if the economic losses that actually result from the a given peril, such as disability, can be spread across a large pool (in numbers) of people probability of loss is relatively small'.

2.1.7 Insurance Profits and Economic Growth

Profitability is one of the most important strategic objectives of financial institutions, because the healthiest financial industry is reflected by the maximization of owners' wealth and profitability. According to Skipper (2008) insurance profits are determined first by underwriting results (total premium collected minus total claims paid) which is the performance of underwriting performance is the effectives of product pricing, risk management, risk assessment and risk measurement, claim management ,marketing management, reinsurance management and operation cost management. This is a good indicator of insurance performance measurement. Second, by investment performance; this is a function of asset allocation and asset management as well as asset maximization. Insurance profit is the main source of capital accumulation and investment and stimulates to the economic growth.

2.1.8 Insurance Investment and Economic Growth

Insurance fosters investment and innovation by creating an environment of greater security so as to economic growth. Availability of funds could result from creating pooling and transferring risk through developing kinds of insurance products by which insurance companies provide protection from credit risk to other financial intermediaries in that way financial intermediaries are more willing to lend funds for financing real investments that encourage economic growth. The function of providing insurance coverage could affect economic growth through saving rate channels in mixed way. By offering life insurance products that combine risk protection and saving benefits, insurance companies encourage long term savings and invest in corporate bonds, equities, stocks as well as in real estate's this helps to resource accumulation and allocation efficiently with managing various financial risks that affect positively on the economic growth. Further insurance investment explains that insurance companies contribute to more efficient and allocation of capital on the process of accumulation and allocation of resources, insurance companies lower transaction costs, achieve diversification and lower non-systematic risks provide limited liquidity and lower information asymmetry, by which they contribute to

economic growth through channels of marginal productivity of capital, saving rate and technological innovations Curak, et al. (2009).

2.2 Empirical Literature Review

Resource mobilization, allocation, maximization and capital accumulation by the method of risk transfer and indemnification through the channel drives from the function of insurance as the financial intermediary in the national economic growth. The relationship between insurance development and economic growth is not a new discovery. However research debate continues today and marked with mixed results and conflicting conclusions depends on countries, regions and different time- periods. The different is not due to the differences in theoretical perspectives but rather in Empirical perspectives.

Insurance supports economic growth by promoting financial stability, mobilizing and channelizing savings, supporting trade, commerce, entrepreneurial activity and social programs; and encouraging the accumulation of new capital and fostering a more efficient allocation. Moreover, the sector reduces the amount of capital needed to cover these losses individually, thereby encouraging additional output, investment, innovation, and competition. Insurance companies have long investment horizons and can contribute to the provision of long-term finance and more effective risk management (Lamm-Tennant & Dominedo, 2013).

According to Haise and sumegi (2008) further discussed and give emphasis on the main objective of insurance companies is the transfer of risk and to be one of major investors in the economy, and increasingly so: aggregate investment by insurance companies grew by 20% relative to GDP in Europe within the time span 1993-2004 while investment by life insurance companies nearly doubled over the same period. Among the main recipients of households financial asset's institutional investors are insurance companies and pension funds. Life insurers sell traditional life assurance, annuities and disability insurance contracts while property causality insurers sell insurers contracts that indemnify the policy holders for property and liability losses. In both cases, the insurer collects premiums from consumers when selling contracts, and invests the proceeds with a view to meeting the contractual incurred. For long term institutional investors, liability structures are key factors influencing asset allocation decisions. Asset held by a company usually reflects the maturity of its liability at the same time;

the growth of institutional investors may be accompanied by an increase in the overall level of savings CGFS (2007).

Haiss and Sumegi (2006) investigate the link between insurance sector development and economic growth; by adopt endogenous growth model with a modified Cobb-Douglas production function which is vary from the standard approach(OLS regression or Granger causality test and mainly test for the determinants of insurance demand) and adopted a framework mainly used in other financial-growth nexus analysis.

Webb, et al. (2002) uses Solow-Swan model to analyses the roles of Banking and Insurance to economic growth by facilitating the efficient allocation of capital by apply a cross-country of 55 countries for the 1980-1996 period, after controlling the exogenous components, they find that the exogenous variables of banking and life insurance penetration are robustly predictive of increased productivity across the sampled countries this leads that the higher level of banking and insurance jointly produce a greater effect on growth than would be indicated by the sum of their individual contributions.

A research conducted by Arena (2008) as opposed to that of Ward and Zurbruegg (2000), used an estimation generalized method of moments (GMM), to test whether there is a causal relationship between insurance market activity not only data on total insurance premiums but also their aggregation in to life and non-life insurance premium in order to assesses their potential different effects on economic growth.

Gabriel (2015) empirically investigates the effect of insurance sector development on the growth of Nigeria economy, apply Augmented Dickey Fuller test, Ordinary least square method, Descriptive statistics, Co- integration and Granger causality test is used to annual data spanning from 1981-2013.Analysis used multiple regression model regressed based on the identified dependent and explanatory variables as: RGDP of the country is an dependent variable, Total claim Payment (TCLP), Total insurance Investment (TINV), Total Insurance premium (TIPM) and total Insurance Return (TIPR) expressed in terms of profit are identifies as explanatory variable for this study. The results show that insurance investment and insurance premium are positively and significantly correlated to economic growth.

Ward and Zurbruegg (2000) employed Granger causality to test between total insurance premiums and read GDP for nine OECD countries over the 1961-1996 periods. For the two countries (Canada, Japan) found that the insurance market leading GDP and for Italy found that a bidirectional relationship. The results for the other countries showed no connection.

Haise and Sumegi (2008) further identified risk transfer (that is bearing risk for other economic agents which might stabilize their income streams, dampen volatility and enhance economic activity) and investment, through increasing over-all investment volumes, by Deeping capital markets and by broadening the investment rang as the major channels through which the insurance sector may aid economic growth and furthermore they argue that the insurance sector should be given extra attention in financial sector analysis and economic policy.

Most of the research papers conducted in Ethiopia focus on performance measurements of insurance such as Daniel & Tilahun (2013) study over the period 2005-2010 and Meaza (2015) over the period of 2008-2013, they found that loss ratio (risk) had significant and negative relationship with insurer profitability. Abate & Sambasivam (2013) over the study period 2003-2011 & Hanna (2015) from 2005-2014 have found tangibility assets are not significantly related with insurers profitability in Ethiopia. However as to the best of my knowledge related with my study very few studies had been conducted in Ethiopia and revived accordingly as follows:

Aderaw (2012) examined empirically the relationship between insurance and economic growth in Ethiopia using time-series data from 1981-2010, using the 2000 as base year for the GDP. The results of this study revealed that development of insurance and economic growth in Ethiopia are not casually related. Therefore Aderaw (2012), concludes that insurance is not an important prerequisite to stimulate economic growth as the same time economic growth do not bring insurance development.

To conclude, given the multiple potential benefits of a vibrant insurance sector, there are strong theoretical explanations for positive impact of insurance sector to economic growth. However, most of the literature in this field deals with the role of banking, in respect of the field of insurance, except few studies concentrated on developed countries. The role of insurance is often neglected in developing countries as well as in Sub-Saharan African (SSA) countries. Very limited research have been published on the insurance market growth nexus in developing

countries and a little published study has been conducted to investigate the impact of insurance development on economic growth in Ethiopia.

In view of the importance or the role of insurance in the economic growth, there is a theoretical explanation for the positive correlation between insurance industry and GDP growth of a country, however, no consensus has emerged on empirical studies. The research differs across countries and regions in different time-periods. For example, studies such as Haiss and Sumegi (2008), Arena (2008), Curak et.al (2009) found that insurance had positive impact on economic growth. Patrick (1966) showed that economic growth leads to insurance growth. However, studies by Webb, et al. (2002), Gabriel (2015) showed no impact on the economic development. While Mezegebe (2010) in Ethiopia found that insurance has little contribution to economic growth. However Aderaw (2012) showed that insurance had no relationship between insurance and economic growth in Ethiopia.

Finally, as per the researchers knowledge there is no research that has been conducted in this are to provide empirical evidence on the Ethiopian insurance sector development and its contribution to economic growth in Ethiopia. Given this lack of empirical studies, it is hoped that, this study fills the gap and helps for further understanding the insurance sector development and its contribution on economic growth given their primary of insurance functions and macroeconomic variables.

2.3 Summary of Literature

A review existing literature points out research gap. There are previous studies related to this topic throughout the world. Also in Ethiopia varies authors were conduct research on nexus between financial sector development and economic growth of Ethiopia using different time interval data from 1972-2016. The study of Haile Kibret and Kassahun, (2011) cited by Roman, (2012) employed a single variable which is liquid liability as independent variable and found bi-directional causal relationship between financial sector development and economic growth. The study of (Roman, 2012) used only credit issued to the private sector as independent variable. Various economic theories related to economic growth shows that sustainable economic growth can be possible if effective policies are implemented in a certain economy. A financial system is a network of financial institutions and markets dealing in a various financial instruments which are involved in money transmission activities and provision of credit facilities. Thus endogenous

growth theory concludes that financial intermediation has a positive effect on steady-state growth and investment in human capital, innovation, and knowledge are significant contributors to economic growth.

Besides summarizing the various insurance and economic growths related theoretical and empirical study, Insurance supports economic growth by promoting financial stability, mobilizing and channelizing savings, supporting trade, commerce, entrepreneurial activity and social programs; and encouraging the accumulation of new capital and fostering a more efficient allocation.

Therefore study seeks to expound on the previous research by using the most current data while focusing on the effect of insurance development on the economic growth in Ethiopia. The result is expected to analyses the importance of insurance development on the economic growth in Ethiopia

Chapter Three

3 Methodology

3.1 Data type of the collection

There are different types of data that were collected for our study through the use of important techniques, which is relevant to the objective of the study collected from different sources. This study have been used both primary and secondary data sources. The primary data was collected from sample of respondents and key informants. The secondary data was collected from experts (natural resource expert), books, statistical reports and official documents.

3.2 Data source of the collection

The type of data that will be used in this research is mainly secondary time series data. The study was covered the period from 1984-2019 to examine the effect of Insurance sector development on Economic Growth in Ethiopia. Getting of primary data is impossible with time and resource constraint. The secondary data was collected from the National Bank of Ethiopia (NBE) and Ethiopian Insurance Corporation (EIC).

3.3 Method of data analysis

In this study both simple descriptive and econometrical method of data analysis was employed. Based up on the objectives stated above the study was used appropriate and effective descriptive statistics like tables to analyze the effect of insurance sector development on economic growth in Ethiopia. To empirically investigate or to analyze the effect of insurance sector development on economic growth in Ethiopia, the research was used the econometric technique using time series studies are more likely to investigate the relationship and to estimate and analyses the contribution of insurance sector development on economic growth which is measured by real gross domestic product as the dependent variable in the model while the explanatory variables are insurance premium, insurance investment, insurance claims and payment insurance profit.

3.4 Model specification

Theoretically, there are various econometric method (estimation) techniques which obtain numerical values of estimates of parameters such as VAR, ordinary least square (OLS), maximum likely hood and method of moments, and so on. Among these methods this study was used Vector auto regressive and vector error correction models method to estimate the below

model. Vector error correction model is a long run model which reflects the current error in achieving the long run equilibrium relationship among variables. VECM is used to estimate the long run economic growth function and allows us to study the short run relationship among variables under consideration.

This section presents a simple econometrics model that attempts to analyze the contribution of insurance sector development on economic growth in Ethiopia. Therefore, the mathematically relationship between real GDP and its major macroeconomic determinant are expressed as follows:

RGDP=f(TIPM,TICL,TIPR,TINV)……(1)

The relevant linear functional relationship between dependent and independent variable as follow;

$RGDP= \beta_1+\beta_2 TIPM+\beta_3 TICL+\beta_4 TIPR+\beta_5 TINV+ \mu_t$…….(2)

Where; RGDP = Real GDP is used as a proxy for economic Growth

TIPM = Total insurance premium

TINV = Total insurance investment

TICL = Total Insurance claim payment

TIPR = Total Insurance profit

μ_t = Error term

3.5 Vector auto regressive and vector error correction models

Economic theory is not always rich to provide a dynamic specification that identifies all of relationships between dependent and independent variables. Estimation and inference are complicated by the fact that endogenous variables may appear on both the left and right sides of the equations in the model. However the Vector Auto Regressive (VAR) approach avoids the need for structural modeling by treating every variable as explained in the system as a function of the lagged values of all explanatory variables in the system (Roman, 2012).

A VAR describes the dynamic progress of a number of variables from their common history. The use of co-integrated VAR model helps account for spurious (nonsense) correlation and erogeneity bias as it is designed for non-stationary time series and requires division of variables. It gives feedback and dynamic interrelationship within all the variables in the system in forecasting and policy analysis (Rahman, 2004).

Time-series variables have been widely noted to be non-stationary, the results obtained from the VAR are spurious and misleading (Mukhopadhyay and Pradhan, 2010). Moreover, utilizing properly differenced variables in the VAR may lead to model miss-specification, if the level variables share the long run relationship or they are co-integrated. In this case, using a Vector Error Correction Model (VECM) is better.

Vector error correction model is a long run model which reflects the current error in achieving the long run equilibrium relationship among variables. VECM is used to estimate the long run economic growth function and allows us to study the short run relationship among variables under consideration.

The VECM specification disclosed the long-run behavior of the exogenous variables to converge to their co-integrating relationships while allowing a wide range of short-run dynamics. The co integration term is known as the error correction term since the deviation from long-run equilibrium is corrected gradually through a series of partial short-run adjustments (Gujarati, 2004).

3.5.1 Estimation techniques

To comply with the objective of this study, unit root test, co-integration test and Granger causality test were conducted before VECM estimation and conduct autocorrelation test, normality test and stability test after estimation. The significance of each explanatory variable was determined by F-test at 95% confidence level. The adjusted R2 was used to measure the strength of explanatory variables to explain the variations in the explained variables.

3.5.2 Unit root test

The use of existing unit root test in statistics is to investigate whether a time serious data has got a unit root or not. During investigation if a time serious data has got a unit root in it, it will be difficult to deal with. It means a long run and can only be deal with a time period. Therefore, if a time serious data have got a unit root, it has to be dealt first before during a long run phenomenon of the time serious data (Neway, 2017).The results of the unit root test leads to the test for the existence of a stable long-run relationship.

3.5.3 Co-integration tests

Co-integration analyses have customized to time series analysis and as such further economic theory in explaining the association between economic variables. The forerunners to the co-integration analysis may be separated into two main sections where statisticians and econometricians used time series data in different ways. Primarily, assuming that the non-stationary of time series did not affect empirical analysis the econometricians utilized the classical linear regression model. The main problems to be dealt with in this regard were simultaneity and autocorrelation (Granger and Newbold, 1974). Secondly, according to Kennedy, (1998) time series analysts were inclined to avoid the dilemma of stationarity by differencing data as much as necessary to make it stationary. As the continual differencing is basically a representation of the endogenous variable own past values as well as current and past errors. These problems are adequately deal with in the co-integration and Autoregressive Distributed Lag Model.

3.5.4 Granger causality test

The concept of granger causality relates to improve whether one variable forecast of another. A variables X is said to be caused by a variable Y, if X can be predicted better from past values of both X and Y than from past values of X alone. Granger causality tests are forecast capacity tests. To know what extent does one series enclose information about the other series? It is better indicator of precedence than a real causal identification.

Before using the multivariate Granger causality test, it should be ensure all the variables are in stationary level. If there is no co-integrating, multivariate Granger causality tests are executed through first differencing the variables of the vector auto regression (VAR) model. This is supported by Engle and Granger, (1987) who argue that if two time series are co-integrated then

they are necessarily causally related. It is therefore important to test for stationary properties of variables before operating the Granger causality tests. Later, Sims, (1972) contended that Granger causality in a bi-directional causality or bi-directional causality between endogenous and exogenous variables. In this study the researcher was test the causality between banking and insurance sector development and economic growth in Ethiopia.

3.6 Description of variable

3.6.1 Dependent variable

Real gross domestic product

Real GDP is an inflation adjusted measure that reflects the value of all goods and services produced by an economy in a given year, expressed in base year prices, and is often referred to as constant price. Real GDP is expressed by percentage of Nominal GDP divided by Price index (Mankiw, 1992). Real GDP is the better indicator of economic growth. Therefore, the study was customized economic growth as dependent variable and the proxy variable of economic growth is real GDP

3.6.2 Independent variable

Insurance premium

A premium can be defined as the selling price of insurance policy that is the exchange amount paid by the insured party to the insurer due to the transfer of his risks to the seller of the insurance policy risk. Gross Insurance premium is made up of the pure premium and loading premium. Pure premium or net premium corresponds to the average cost of claim multiplied by the probability of that the event being covered will occur during the risk covered policy period.

Insurance Claim payment

Claims are defined as compensation of loss request by an insured for indemnification by an insurance company for loss incurred from an insured peril during the risk covered period. This is an explanatory variable for the study

Insurance Profit

Total Insurance Returns or Insurance profits is measured the difference between sum of total premium and investment income the total claims & related costs paid out each year. In other words total Insurance profit is the return or incentive that is value added to the company's capital resulted from the insurance activities during the year

Insurance Investment

Insurance companies mobilize financial resources in the form of premiums on insurance policies and investing in income earning assets to maximize profits. Invested money with the objective of profits at the rate of return greater than that to be paid out as benefits under its policies. Insurance companies invest part of their premium that is not immediately needed for claims and administrative expenses. These earrings are critical to insurance companies to balance underwriting losses for property and causality products and to help build policy cash value for life products. The insurance investment on profitable ventures is used as explanatory variable.

Hypothesis of variables

Table 1 Table Description of variables and their expected relationship

No	Variable name	Short name	Description	Expected sign
Dependent variable	Real GDP	RGDP	Economic growth	
Independent variable	Insurance premium	TIPM	Risk Transfer (Risk Management)	Significant and Positive
	Insurance Claim payment	TICL	Indemnification of insured person	Significant and Positive
	Insurance Profit	TIPR	Return of Insurance Business	Significant and Positive
	Insurance Investment	TINV	Institutional Investors	Significant and Positive

CHAPTER FOUR

4 Data and empirical analysis

4.1 Introduction

The chapter analyses the contribution level of insurance practice on economic growth in Ethiopia. Before employing the direct estimation of models, descriptive statistics and correlation analysis are established to understand the nature of the data. Before employing direct estimation of the model, it was tested the unit root test to check whether the time-series is stationary or not. After identifying the optimal lag length, the presence of the co-integrating test using the Johansen procedure and done Granger causality test to identify its causality. Following estimation of long run and short run relationship employ autocorrelation, normality and stability tests.

Table 2 Result of descriptive statistics

	RGDP	TIPM	TICL	TIPR	TINV
Mean	8.426273	5.794530	5.573017	5.152773	5.071031
Median	8.296882	5.676381	5.479922	5.017336	5.263840
Maximum	9.272932	6.963677	6.787783	6.207488	6.494693
Minimum	8.007761	4.132612	4.581244	4.302288	3.704322
Std. Dev.	0.366295	0.649560	0.698983	0.526725	0.831066
Skewness	1.018587	0.122245	0.332067	0.760120	-0.223991
Kurtosis	2.986881	2.813246	1.831316	2.409639	2.131076
Jarque-Bera	6.225380	0.141978	2.710343	3.989481	1.433576
Probability	0.044481	0.931472	0.257903	0.136049	0.488318
Sum	303.3458	208.6031	200.6286	185.4998	182.5571
Sum Sq. Dev.	4.696031	14.76751	17.10019	9.710358	24.17347
Observations	36	36	36	36	36

(Source: researcher own computation by running Eviews9.0)

The above table 2 shows descriptive statistics values of the study variables for the study period 1984-2019. The study has used five key variables for the analysis. Those are Real gross domestic product (RGDP) as dependent variable and Insurance premium (TIPM), Insurance claim (TICL), Insurance Investment (TINV) and Insurance profit (TIPR) are as independent variables; As

indicated in the above table, the average growth rate of real gross domestic product, Insurance profit, Insurance Premium, Insurance claims and Insurance Investment are 8.426273%, 5.794530%, 5.573017%, 5.152773% and 5.071031% respectively. All the values are found within the minimum and maximum values and more closely tied with the median value. The standard deviation of real gross domestic product accounts 0.366295. The minimum and maximum of the growth Rate Real gross domestic product over the sample period is 8.007761% and 9.272932% respectively.

Correspondingly, the average growth rate of insurance premium is 5.794530%, the minimum is 4.132612% and the maximum is 6.963677% shows less than the average growth rate of 8.3% real gross domestic product. The standard deviation of insurance premium is 0.649560 which varies from the mean. The average growth rate of Insurance claim is 5.573017% which is also less than the average growth rate of 8.426273%, in RGDP.

The other explanatory variables are Insurance profit and insurance investment. Annual average growth rate of insurance profit and insurance investment are recorded as 5.152773% and 5.071031% respectively both are less than the average growth rate of real GDP. This shows that the growth rate of insurance market in Ethiopia is very slow and the gap between the minimum and the maximum is very narrow as well as the dispersion from the mean is very small, this shows that the growth rate is stagnant increasing very slowly and sluggish.

Regarding normality distribution, according to Brooks (2008), if the residuals are normally distributed, the histogram should be bell shaped; a normal distribution assumption states that it should not be skewed. That means the skewness is zero, coefficient of kurtosis is close 3, and the Jarque- Bera statistics would not be significant. The normality characteristics showed in the above table 6 unlikely consistent with the assumption. So it is tested by other alternatives and the result has been shown in table Diagnosis test.

4.2 Correlation matrix

Table 3 correlation matrix

	LNRGDP	LNTIPM	LNTICL	LNTIPR	LNTINV
LNRGDP	1				
LNTIPM	0.91998	1			
LNTICL	0.93159	0.90623	1		
LNTIPR	0.93645	0.85860	0.89169	1	
LNTINV	0.87292	0.87706	0.89616	0.78225	1

(Source: researcher own computation by running Eviews9.0)

The above table 3 provides the correlation matrix for independent variables used in the analysis. As can be seen from the results of correlation between the independent variables showed positive and strong correlation insurance premium with insurance claim which is 0.90623. This implies that when insurance premium increases it will have a positive and strong increase on the insurance claim. Insurance claim has also shown positive and strong correlation with insurance investment it is 0.89616. Besides, when insurance claim increases implies that it has a strong impact on the growth of insurance investment.

4.3 Econometric analysis

4.3.1 Unit root test

Most macroeconomic time serious data are trended and unit root (non-stationary). Non-stationary macro variables are not efficient; it would lead to the problem of spurious regression. It means false relationships among the variables. Therefore, before customizing the data in estimating VECM, checking whether the data is stationary or not and changing to stationary by differencing method.

The stationary criteria are three common criteria. If a data is stationary, it should be fulfilled those three criteria. The criteria are the absolute value of test statistics must be greater than 5% critical value, p value should be significant (less than 5%) and coefficient of lag 1 should be negative. If the data fulfilled those three criteria, it can be stationary. The researcher take unit root test of every variables by using Augmented Ducky-fuller Test. Also primarily all variables are unit root and entire variable change to stationary by first deference.

Unit root estimation by ADF tests

All variables are tested by ADF at level show non-stationary. The absolute value of ADF tests of unit roots are less than the absolute value of critical value. This implies rejection of hypothesis unit roots. In other wards the null hypothesis of having unit root is fail to reject at level and we would be differenced at order one or I(1) at trend and intercept to make them stationary.

H0: the variables have unit root (non-stationary) and

H1: The variables have not unit root (stationary).

Table 4 Unit root estimation by ADF test (at first difference) with trend &intercept)

Series	ADF test statistics	5% critical values	10% Critical values	Prob.	order	remark
RGDP	-6.129915	-3.548490	-3.207094	0.0001	I(1)	Stationary
TIPM	-7.088952	-3.552973	-3.209642	0.0000	I(1)	Stationary
TICL	-6.102996	-3.552973	-3.209642	0.0001	I(1)	Stationary
TIPR	-6.025745	-3.552973	-3.209642	0.0001	I(1)	Stationary
TINV	-7.756449	-3.548490	-3.207094	0.0000	I(1)	Stationary

(Source: researcher own computation by running Eviews9.0)(2021)

The results on the first difference at trend and intercept by ADF test are shown in the above table. The absolute value of ADF test statistic for RGDP, TIPM, TICL, TIPR and TINV are greater than the critical value at 5% and 10% with trend and intercept. This indicate that the null

hypothesis is rejected at first difference, this means that all variables are stationary at order one I (1). More over the results of the P-value of the RGDP, IP,INV,ICL, and IPR are less than 5% first difference and at trend and intercept at I(1) this shows that statistical significant to reject the null hypothesis or the non-stationary.

Lag Selection Criteria

Co-integration test is usually preceded by a test of optimal lag length as the result of the test is affected by the number of lags included in the customized model. In the Johansson maximum likelihood approach, the first step towards the co-integration analysis is the determination of an appropriate lag length that is going to be used in the VAR or VECM estimate. There are many tests that can be used to choose a lag length, The Likelihood Ratio test [LR], the Final Prediction Error test[FPE], the Akaike information criteria [AIC] , the Schwarz information criteria [SIC] and the Hannan-Quinn information criteria [HIC] are used to determine the optimal lag length. The smaller value of the information criteria is the better model. The lag exclusion test confirms the second lag is the appropriate lag. Because the smaller value of LR, AIC and HQIC are at lag two; the most lag selecting criteria‟s recommended to select lag two. The model result is tabulated below.

Table 5 Lag Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-2605.402	NA	3.35e+60	153.5531	153.7775	153.6296
1	-2432.499	284.7811	5.68e+56	144.8529	146.1997	145.3122
2	-2340.973	**123.8297***	**1.26e+55***	**140.9396***	**143.4087***	**141.7816***

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

(Source: researcher own computation by running Eviews9.0)

4.3.2 Johansson Co- integration tests

Engle and Granger, (1987) disclosed that linear combination of two or more non stationary series may be stationary. If such a stationary linear combination exists, the non-stationary time series are said to be co-integrated. The stationary linear combination is called the co-integrating equation and may be interpreted as a long-run equilibrium relationship among the variables. In this study the Johansen maximum likelihood testing procedure was applied to determine the number of co-integrating relations. Therefore, the trace and maximum Eigen value statistics are computed to test for the existence of co-integrating vectors under the Johansen approach. The trace statistics (λ –trace) tests the null hypothesis that there are at most r co-integrating vectors against the alternative of r or more co-integrating vectors (Brooks, 2008).

Johansson's co-integration test by trace statistics

The hypothesis of co-integration tests are: In order to analysis the unit root tests and to create fully understand, it better start with unit root hypothesis.

Null hypothesis: Ho: The series are not statistically significant co-integration between the variables to each other.

Alternative hypothesis: H1: the series are statistically significant integrated between the variables to each other.

Table 6 Johansen Co-integration test result at (trace)

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.678245	85.96735	69.81889	0.0015
At most 1	0.483183	47.41255	47.85613	0.0550
At most 2	0.391243	24.97028	29.79707	0.1625
At most 3	0.174791	8.094847	15.49471	0.4553
At most 4	0.044924	1.562802	3.841466	0.2113

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

(Source: researcher own computation by running Eviews9.0)

The Johannes co-integration trace statistic test results shown in the above table indicates that there are at most 1 co- integrating variables at 5% critical value. This means that the value of the test at first difference for the one variables are greater than critical value at 5% and the p- value is less than 5% critical level. On the other hand, one co-integration vector is not rejected by tests, we can conclude that there exists only one co integration vector, and thus there exists meaningful long run relationship between the economic growths. We hereby conclude that the variable in the model has a long run equilibrium relationship.

Johansson's co-integration test by maxin Eigen value statistics

The test was check whether there is existence of co-integration or not by using Eigen value statistics.

Ho: The series are not statistically significant and no co-integrated among the variables to each other.

H1: the series are statistically significant and integrated among the variables to each other.

This test is used to know the powers of integration among the variables are strong or weak and used to determine estimating co integrating vector.

Table 7 Johansen Co-integration test result at (Maximum Eigen value)

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.678245	38.55480	33.87687	0.0128
At most 1	0.483183	22.44227	27.58434	0.1986
At most 2	0.391243	16.87543	21.13162	0.1780
At most 3	0.174791	6.532046	14.26460	0.5459
At most 4	0.044924	1.562802	3.841466	0.2113

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

(Source: researcher own computation by runningEviews9.0)

As per the Johannes co-integration Eigen statistic result in table 9 indicates that there are at most 1 co- integrating variables at 5% critical level. This means that the value of Johannes co-integration maxim Eigen value at first difference for the one variable is greater than the critical value at 5%.

4.3.3 Vector Error Correction Model (VECM)

According to Asteriou (2007) Error Correction Model (ECM) is important and popular for the following reasons;1) it is convenient model to correct from the disequilibrium of the previous period; 2) if the variables are co-integrated and confirmed as stationary at first difference it has the power to resolve the problem of spurious regression; 3) this is fits for the time series given data sets;4) it is used to measure the speed of adjustment and prevents the errors in the long run relationship from the disequilibrium of prior period ifand only if the variables are co-integrated and stationary at first order. Besides, Yinuusa and Akinlo(2013) explained that ECM is used to estimate the co-integration relationship among the variables, and this is the model that combines both short run properties of the economic relationship in the first difference and form as well as the long run information provided by the data in level form.

The vector error correction model provides important information in the short run relationship among any co integrated variables. The main point of the VECM analysis is the error correction term from the above estimated co-integrating equations of the short run deviations from the long run equilibrium. Therefore the main focuses of the paper is to see the long run co-integrating relationship and short run dynamics between real GDP and the independent variables. ECM consists of two parts: The long run co-integrating, coefficients (used to drive the long run co-integrating relationship), and the short run coefficients (for the short run analysis).

1. **Long run relationship**

The estimated long run equilibrium for economic growth (RGDP) derived from the normalized vectors, with standard errors in brackets and the t-statistics in parenthesis is depicted in table below.

Table 8 Long run regression equations and estimations

Vector Error Correction Estimates
Date: 08/26/21 Time: 01:15
Sample (adjusted): 1986 2019
Included observations: 34 after adjustments
Standard errors in ( ) & t-statistics in [ ]

Cointegrating Eq:	CointEq1
LNRGDP(-1)	1.000000
LNTIPM(-1)	-0.914122 (0.09223) [-9.91091]
LNTICL(-1)	0.501569 (0.11255) [4.45651]
LNTIPR(-1)	-0.439801 (0.10900) [-4.03488]
LNTINV(-1)	0.037129 (0.05925) [0.62662]
C	-8.703267

(Source: researcher own computation by running Eviews9.0)

The long run relationship is derived by normalizing growth in real GDP from table above. The normalized co-integration equation can be written as:

LN**RGDP**= 0.914122 LN**TIPM** -0.501569 LN**TICL** +0.439801 LN**TIPR** - 0.037129 LN**TINV** +8.703267

This regression result indicates significant variables namely total insurance premium, total insurance claim and total insurance profit are important insurance determinants for economic growth in the long run. However, contrary to the theoretical expectations, the coefficients of total insurance claim and total insurance investment have shown negative direction.

The above result in table showed that, other thing remains constant, total Insurance premium is positively affects the economic growth in long run; The coefficient of 0.914122 in total insurance premium indicates that a 1% increase in insurance premium increases growth level in real GDP in the long run by 0.914122% all other things being equal.

The negatively and statistically insignificant results of total insurance investment to real GDP revealed that total insurance investment contributes to real GDP positively but statistically insignificant, this supports alternative hypothesis. The coefficient of insurance investment variable implies that 1% increase in insurance investment decrease Real GDP by 0.037129 % in long run.

The insurance claim result showed a negative and significant relationship with real GDP which is inconsistent with the null and alternative of this study and with theories. Theoretically claim payment is the indemnified the financial compensation and bring back to the same position as before.

The long run dynamic test result showed that total insurance profit has positive and significant relationship with real economic growth. It indicated that 1% increase in total insurance profit resulted by 0.439801 increase in real gross domestic product.

Table 9 Short run regression equation and estimations

Equation: D(LNRGDP) = C(1)*(LNRGDP(-1) - 0.914122331755*LNTIPM(-1) + 0.501568548671*LNTICL(-1) - 0.439800737621*LNTIPR(-1) + 0.0371289286239*LNTINV(-1) - 8.70326657842) + C(2)*D(LNRGDP(-1)) + C(3)*D(LNTIPM(-1)) + C(4)*D(LNTICL(-1)) + C(5)*D(LNTIPR(-1)) + C(6)*D(LNTINV(-1)) + C(7)

System: UNTITLED
Estimation Method: Least Squares
Date: 08/11/21 Time: 17:48
Sample: 1986 2019
Included observations: 34
Total system (balanced) observations 170

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-0.107598	0.060596	-1.775653	0.0280
C(2)	0.639013	0.155552	4.108027	0.0001
C(3)	-0.027934	0.031751	-0.879797	0.3805
C(4)	0.026930	0.029033	0.927567	0.3553
C(5)	0.083062	0.083681	0.992608	0.3227
C(6)	-0.167566	0.032662	-5.130353	0.0000
C(7)	0.059056	0.021364	2.764297	0.0065

(Source: researcher own computation by running Eviews9.0)

The empirical investigation regarding the short run dynamics are important for policy makers because the sign and magnitude of the short run dynamics provide the direction and movements of variables. Thus, short run dynamics are estimated through Error Correction Model (ECM). The magnitude of the error correction term is measures the speed of the adjustment of the long run equilibrium following the short run shock in the previous period. The error correction term in this study is negative as well as significant at 1% level, this indicates that (-0.107598) reflecting 10.7598%speed of adjustment of the long run causality effect for the long run equilibrium from previous periods shock. In other words 10.7598% of the long run disequilibrium is corrected in the short run period.

Among the coefficients of variables only one got statistically significance, however measuring the statistical significance of two independent variables jointly would be very important in order to clearly say whether two independent variables at a given lag length are jointly significant or

not. To do this, Wald test of coefficient restriction is examined with null hypothesis of two coefficients can't jointly influence dependent variable. The following table shows Wald test of coefficient restriction

4.3.4 Pair-Wise Granger Causality tests

In related to our research objective, however, the question of causality is not yet answered. So to know the directional influence of the variables, the series under the study are tested by the granger causality (1969) and the analysis is shown below. As can be seen in below table the short run causality among variables, there is unidirectional causality from real gross domestic product to total insurance premium, total insurance profit and total insurance claim to economic growth in the short run. And there is bidirectional granger causality between the real gross domestic product (RGDP) and insurance Profit (TIPR) in the short run. Similarly there is also bidirectional granger causality exists between explanatory variables. Total insurance premium (TIPM) and total insurance profit (TIPR) can cause to each other. However there is no granger causality from total insurance investment (TINV) to any of the variables in the short run.

Table 10 Pair-Wise Granger Causality tests

Null Hypothesis:	Obs	F-Statistic	Prob.
LNTIPM does not Granger Cause LNRGDP	34	2.13447	0.1365
LNRGDP does not Granger Cause LNTIPM		4.82598	0.0155
LNTICL does not Granger Cause LNRGDP	34	0.46433	0.6331
LNRGDP does not Granger Cause LNTICL		2.90292	0.0709
LNTIPR does not Granger Cause LNRGDP	34	1.89654	0.1682
LNRGDP does not Granger Cause LNTIPR		4.39810	0.0215
LNTINV does not Granger Cause LNRGDP	34	14.9522	0.5935
LNRGDP does not Granger Cause LNTINV		2.70331	0.3838
LNTICL does not Granger Cause LNTIPM	34	2.98715	0.0661
LNTIPM does not Granger Cause LNTICL		4.61889	0.0181
LNTIPR does not Granger Cause LNTIPM	34	2.24831	0.1237
LNTIPM does not Granger Cause LNTIPR		3.32575	0.0501
LNTINV does not Granger Cause LNTIPM	34	1.05608	0.3608
LNTIPM does not Granger Cause LNTINV		11.0507	0.0003
LNTINV does not Granger Cause LNTIPR	34	1.77434	0.1875

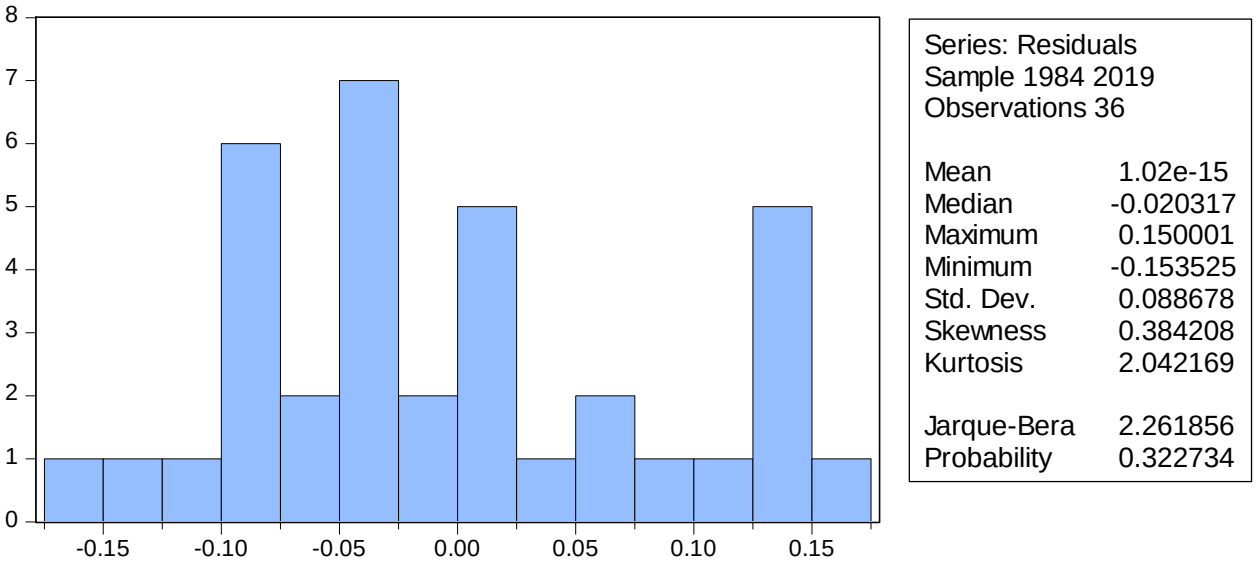
LNTIPR does not Granger Cause LNTINV	0.68800	0.5106

(Source: researcher own computation by running Eviews9.0)

Accordingly, the estimation result is that RDGP granger cause to TIPM, TICL and TIPR, with a direction of causality flow from RGDP to TIPM, TICL and TIPR at 5% level of significant. It is growth of real growth has positive and significant impact on the growth of insurance premium, profit as well as claim. However there is no cause relationship between insurance investment and RGDP at 5 % level. The result is showing that insurance investment has no impact on the growth of level in short run.

4.3.5 Vector error correction diagnostic test

Table 11 Normality for VEM



(Source: researcher own computation by running Eviews9.0)

As it is shown in above figure it is normally distributed for the period of study since the p value is greater than 5 %(32.27%

Table 12 Hetroscedasticity test for VECM

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	2.299079	Prob. F(4,31)	0.0811
Obs*R-squared	8.236261	Prob. Chi-Square(4)	0.0833
Scaled explained SS	3.182415	Prob. Chi-Square(4)	0.5278

(Source: researcher own computation by running Eviews9.0)

As it is shown in above table there is no heteroscedasticity since the p value is greater than 5% (8.33%). Therefore we fail to reject the null hypothesis which says that there is no heteroscedasticity.

CHAPTER FIVE

5 SUMMARY, CONCULUSION AND RECOMMENDATION

The purpose of this chapter is to present the summary, conclusion and recommendation of the study. Whereas the summary presents a brief overview of the research problem, objective, methods and findings, the conclusion capture the overall results of the findings of the study. Policy implications part disclosed opinions, suggested issues to address related in the study standing from the outcomes of the study.

5.1 Summary

This study is supported by related theoretical and empirical literature reviews; descriptive statistics was computed of the sample, significant correlation was then found between the independent variables. This indicates with the aim of finding, the contribution of insurance sector development on economic growth in Ethiopian economy. The study has tried to establish a short run and long run dynamics, causal relationship among the series of economic growth, insurance premium, insurance investment, insurance claim and insurance profit for the period of 1984-2019.

The data is checked for its stationary. And this found that the first difference become stationary. That means the variables are integrated of first order I(1) confirmed by augmented Dickey Fuller (ADF) . After all those have been confirmed vector autoregressive (VAR) estimation equation is applied. The co integration analysis revealed that the presence of long run equilibrium relationship among the variables. That means the economic growth and all insurance activities have long run equilibrium relationship.

The results of granger causality confirm that unidirectional relationship is exhibited from real economic growth to insurance premium, insurance claim and insurance profit among the variables. However insurance investment does not have any cause and effect relationship with any variable in this study.

5.2 Conclusion

Theoretical explanation showed that a well-developed financial system increases the efficiency of financial decisions, improves the allocation of resources in the economy. This means that developed insurance sector influences positively on economic growth. The empirical results of previous studies are mixed, depends on the countries strategic focus and financial and economical developments. However empirical evidence from developed countries show that insurers are the major investors, thus improves financial resource mobilization through channeling risk transfer, enhances the percentage of savings directed towards investment.

Keeping in mind the above literature results, this study has used descriptive statistics analysis to examine the trend and the distribution of the chosen variables over the sample period. The time series data are also tested its stationary used by ADF. In order to address the research objectives of the relationship regression analysis has been made between the real GDP and insurance industry variables, in Ethiopia. Finally the study findings are discussed in the following. Using ECM and VECM models analysis have been made. According to the study,

a) The error correction model (ECM) indicate that insurance premium and total insurance claim have negative and significant impact on real GDP, at 5% significant level, in the long run.
b) The error correction model (ECM) estimate also indicates the insurance profit and insurance investment have shown positive sign in the long run. Further it shows that insurance profit has more significant than other determinants. Even though insurance investment has positive sign, but it is found insignificant impact on the economic growth.
c) The VECM result indicates that there is short run relationship between real GDP and independent variables. In the short run, there is positive and significant relationship between insurance profit and economic growth. And insurance investment has positive and insignificant impact with economic growth. However insurance premium and insurance claim have negative and significant impact at 5% significant level.
d) The estimated result of error correction term of this model is (-0.107598) indicates that 10.7598% of the deviation of economic growth from its long run equilibrium would require a period of one and half years of adjustment (A 100% represent a 1 year duration of adjustment).

e) Moreover according to the estimation of the of the model, real GDP has uni-directional causality with insurance premium, insurance claim and insurance profit, that runs from economic growth to insurance premium, insurance claim, and to insurance profit. On the other hand, insurance investment has no causal relationship (in the short run) with any variable of this study.

5.3 Recommendations

According to descriptive and empirical analysis, it is observed that the insurance sectors have a long-run and short run effect on economic growth in Ethiopia.

Lack of public confidence in insurance service can be reduced by solving the suspicion that claims would not be paid on time which is constraint to growth of insurance penetration in Ethiopia. Having well developed insurance sector must be one of the crucial primary targets of the Government; it requires financial developmental strategic focus.

Since, the higher levels of banking and insurance jointly produce greater effect on economic development than would be indicated by the sum of their individual contribution. Hence the respective bodies should employ all possible measures to reverse the structural problem of the insurance direction which can foster continuous & sustainable development of the insurance sector. This would contribute meaningful in financial stability and economic growth in the long run and the short run as well.

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7 Appendix

Descriptive statistics by log

	logRGDP	logTIPM	logTICL	logTIPR	logTINV
Mean	8.426273	5.794530	5.573017	5.152773	5.071031
Median	8.296882	5.676381	5.479922	5.017336	5.263840
Maximum	9.272932	6.963677	6.787783	6.207488	6.494693
Minimum	8.007761	4.132612	4.581244	4.302288	3.704322
Std. Dev.	0.366295	0.649560	0.698983	0.526725	0.831066
Skewness	1.018587	0.122245	0.332067	0.760120	-0.223991
Kurtosis	2.986881	2.813246	1.831316	2.409639	2.131076
Jarque-Bera	6.225380	0.141978	2.710343	3.989481	1.433576
Probability	0.044481	0.931472	0.257903	0.136049	0.488318
Sum	303.3458	208.6031	200.6286	185.4998	182.5571
Sum Sq. Dev.	4.696031	14.76751	17.10019	9.710358	24.17347
Observations	36	36	36	36	36

Unit root test Result

Null Hypothesis: D(LNRGDP) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on AIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.129915	0.0001
Test critical values:	1% level	-4.252879	
	5% level	-3.548490	
	10% level	-3.207094	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LNTIPM) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 1 (Automatic - based on AIC, maxlag=2)

	t-Statistic	Prob.*

Augmented Dickey-Fuller test statistic		-7.088952	0.0000
Test critical values:	1% level	-4.262735	
	5% level	-3.552973	
	10% level	-3.209642	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LNTICL) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 1 (Automatic - based on AIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.912854	0.0001
Test critical values:	1% level	-4.262735	
	5% level	-3.552973	
	10% level	-3.209642	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LNTIPR) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on AIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.065666	0.0001
Test critical values:	1% level	-4.252879	
	5% level	-3.548490	
	10% level	-3.207094	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(LNTINV) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on AIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.756449	0.0000
Test critical values:	1% level	-4.252879	
	5% level	-3.548490	
	10% level	-3.207094	

*MacKinnon (1996) one-sided p-values.

Lag Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-2605.402	NA	3.35e+60	153.5531	153.7775	153.6296
1	-2432.499	284.7811	5.68e+56	144.8529	146.1997	145.3122
2	-2340.973	**123.8297***	**1.26e+55***	**140.9396***	**143.4087***	**141.7816***

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

Johansson Co-integration Test

Johansen Co-integration test result at (trace)

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.678245	85.96735	69.81889	0.0015
At most 1	0.483183	47.41255	47.85613	0.0550
At most 2	0.391243	24.97028	29.79707	0.1625
At most 3	0.174791	8.094847	15.49471	0.4553
At most 4	0.044924	1.562802	3.841466	0.2113

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Johansen Co-integration test result at (Maximum Eigen value)

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.678245	38.55480	33.87687	0.0128
At most 1	0.483183	22.44227	27.58434	0.1986
At most 2	0.391243	16.87543	21.13162	0.1780
At most 3	0.174791	6.532046	14.26460	0.5459
At most 4	0.044924	1.562802	3.841466	0.2113

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Vector Error Correction Model (VECM)

Long run regression equations and estimations

Vector Error Correction Estimates
Date: 08/11/21 Time: 01:15
Sample (adjusted): 1986 2019
Included observations: 34 after adjustments
Standard errors in ( ) & t-statistics in [ ]

Cointegrating Eq:	CointEq1
LNRGDP(-1)	1.000000
LNTIPM(-1)	-0.914122 (0.09223) [-9.91091]
LNTICL(-1)	0.501569 (0.11255) [4.45651]
LNTIPR(-1)	-0.439801 (0.10900) [-4.03488]
LNTINV(-1)	0.037129 (0.05925) [0.62662]
C	-8.703267

Short run regression equation and estimations

Equation: D(LNRGDP) = C(1)*(LNRGDP(-1) - 0.914122331755*LNTIPM(
-1) + 0.501568548671*LNTICL(-1) - 0.439800737621*LNTIPR(-1) +
0.0371289286239*LNTINV(-1) - 8.70326657842) + C(2)*D(LNRGDP(
-1)) + C(3)*D(LNTIPM(-1)) + C(4)*D(LNTICL(-1)) + C(5)*D(LNTIPR(-1))
+ C(6)*D(LNTINV(-1)) + C(7)

System: UNTITLED
Estimation Method: Least Squares
Date: 08/11/21 Time: 17:48
Sample: 1986 2019
Included observations: 34

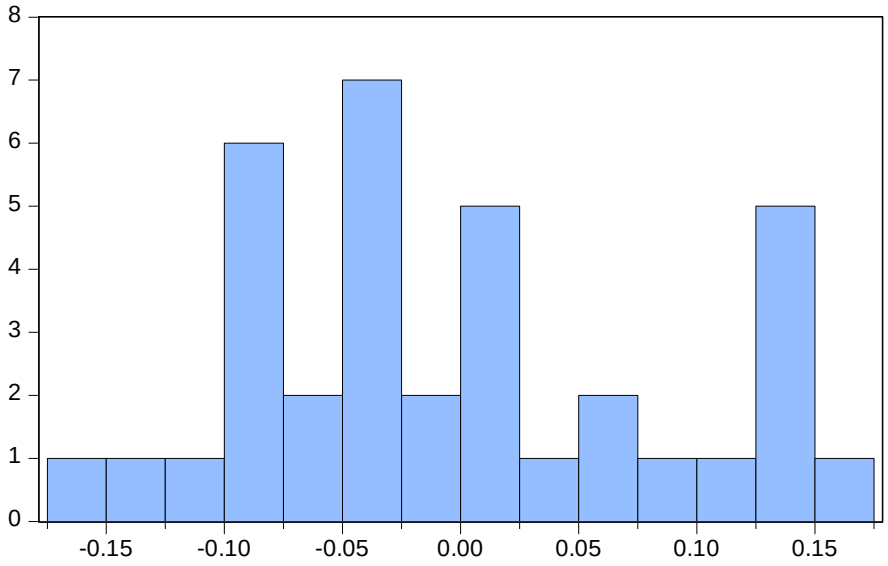
Total system (balanced) observations 170

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-0.107598	0.060596	-1.775653	0.0280
C(2)	0.639013	0.155552	4.108027	0.0001
C(3)	-0.027934	0.031751	-0.879797	0.3805
C(4)	0.026930	0.029033	0.927567	0.3553
C(5)	0.083062	0.083681	0.992608	0.3227
C(6)	-0.167566	0.032662	-5.130353	0.0000
C(7)	0.059056	0.021364	2.764297	0.0065

Pair-Wise Granger Causality tests

Null Hypothesis:	Obs	F-Statistic	Prob.
LNTIPM does not Granger Cause LNRGDP	34	2.13447	0.1365
LNRGDP does not Granger Cause LNTIPM		4.82598	0.0155
LNTICL does not Granger Cause LNRGDP	34	0.46433	0.6331
LNRGDP does not Granger Cause LNTICL		2.90292	0.0709
LNTIPR does not Granger Cause LNRGDP	34	1.89654	0.1682
LNRGDP does not Granger Cause LNTIPR		4.39810	0.0215
LNTINV does not Granger Cause LNRGDP	34	14.9522	0.5935
LNRGDP does not Granger Cause LNTINV		2.70331	0.3838
LNTICL does not Granger Cause LNTIPM	34	2.98715	0.0661
LNTIPM does not Granger Cause LNTICL		4.61889	0.0181
LNTIPR does not Granger Cause LNTIPM	34	2.24831	0.1237
LNTIPM does not Granger Cause LNTIPR		3.32575	0.0501
LNTINV does not Granger Cause LNTIPM	34	1.05608	0.3608
LNTIPM does not Granger Cause LNTINV		11.0507	0.0003
LNTINV does not Granger Cause LNTIPR	34	1.77434	0.1875
LNTIPR does not Granger Cause LNTINV		0.68800	0.5106

Normality for VEM



Series: Residuals	
Sample 1984 2019	
Observations 36	
Mean	1.02e-15
Median	-0.020317
Maximum	0.150001
Minimum	-0.153525
Std. Dev.	0.088678
Skewness	0.384208
Kurtosis	2.042169
Jarque-Bera	2.261856
Probability	0.322734

Hetroscedasticity test for VECM

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	2.299079	Prob. F(4,31)	0.0811
Obs*R-squared	8.236261	Prob. Chi-Square(4)	0.0833
Scaled explained SS	3.182415	Prob. Chi-Square(4)	0.5278