



**BANKING AND INSURANCE SECTORS DEVELOPMENT IN  
ETHIOPIA AND ITS EFFECT ON ECONOMIC GROWTH**

**BY:**

**MELAKU YIRDAW**

**JUNE 2019**

**ADDIS ABABA, ETHIOPIA**

**SAINT MARY'S UNIVERSITY  
SCHOOL OF GRADUATE STUDIES  
INSTITUTE OF AGRICULTURE AND DEVELOPMENT STUDIES**

**BANKING AND INSURANCE SECTORS DEVELOPMENT IN  
ETHIOPIA AND ITS EFFECT ON ECONOMIC GROWTH**

**A Thesis Submitted to Saint Mary's University School of Graduate  
Studies in Partial Fulfillment of the Requirements for Degree of  
Masters of Art in Development Economics**

**BY:**

**MELAKU YIRDAW**

**JUNE 2019**

**ADDIS ABABA, ETHIOPIA**

## **DECLARATION**

I, Melaku Yirdaw, hereby declare that this thesis work entitled “Banking and Insurance Sectors Development in Ethiopia and its Effect on Economic Growth” submitted by me for the award of the degree of Masters of Art in development Economics from Saint Mary’s University at Addis Ababa, Ethiopia, is my original work and all sources and materials used for this thesis have been duly acknowledged. I have submitted this thesis to Saint Mary’s University as of June 02, 2019 and I agree to admit any responsibility for the scientific and ethical mischief pertaining to this research work as per terms and conditions of Saint Mary University.

Declared by: Melaku Yirdaw

Signature: -----

Date: -----

Place and date of submission -----

## **ENDORSEMENT**

This thesis has been submitted to Saint Mary's University, school of graduate studies for examination with my approval as a university advisor.

-----  
**Sisay Debebe (PhD)**

Advisor

St. Mary's University, Addis Ababa

-----  
**Signature**

## **BOARD OF EXAMINERS**

As members of board of examining of the final MA thesis open defense, we certify that we have read and evaluated the thesis prepared by Melaku Yirdaw under the title “**Banking and Insurance Sectors Development in Ethiopia and its Effect on Economic Growth**”. We approved that this thesis meets the accepted standards with respect to originality and quality we recommend that to be accepted as fulfilling the thesis requirement for the Degree of Masters of Art in Development Economics.

\_\_\_\_\_  
**Dean, Graduate studies**

\_\_\_\_\_  
**Signature**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Advisor**

\_\_\_\_\_  
**Signature**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Internal Examiner**

\_\_\_\_\_  
**Signature**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**External Examiner**

\_\_\_\_\_  
**Signature**

\_\_\_\_\_  
**Date**

# TABLE OF CONTENTS

TABLE OF CONTENTS.....	I
ACKNOWLEDGEMENT .....	III
LIST OF ACRONYMS .....	IV
LIST OF TABLES.....	V
LIST OF FIGURES .....	VI
<i>ABSTRACT</i> .....	VII
CHAPTER ONE: INTRODUCTION.....	1
1.1. Background of the Study.....	1
1.2. Statement of the Problem .....	3
1.3. Objective of the Study.....	6
1.4. Research Hypothesis .....	6
1.5. Significance of the Study .....	6
1.6. Scope and Limitation of the Study.....	6
1.7. Organization of the Thesis .....	7
CHAPTER TWO: LITERATURE REVIEW.....	8
2.1. Theoretical Literature Review.....	8
2.2. Empirical Literature Review .....	18
2.3. Factors Affecting Banking and Insurance Sectors Development.....	22
2.4. Gaps in Previous Literatures .....	25
2.5. Conceptual Framework .....	27
CHAPTER THREE: RESEARCH METHODOLOGY .....	28
3.1. Research Design.....	28
3.2. Data Source, Type and Methods of Collection .....	28
3.3. Methods of Data Analysis .....	28
3.4. Definition and Hypothesis of Variables.....	36

CHAPTER FOUR: RESULT AND DISCUSSIONS .....	40
4.1. Results of Descriptive Statistics.....	40
4.2. Econometrics Model Results.....	48
4.3. Long Run and Short Run Model Estimation Results .....	52
CHAPTER FIVE: SUMMERY, CONCLUSIONS AND RECOMMENDATIONS.....	57
5.1. Summary and Conclusions.....	57
5.2. Recommendations .....	59
5.3. Further Research Implication .....	60
REFERENCES .....	61
APPENDICES .....	67

## **ACKNOWLEDGEMENT**

Primary, I would like to extend my sincere gratitude to the almighty God for providing me vigor to successfully accomplishment of this thesis. Next, my honest appreciation goes to my advisor Sisay Debebe (phD) for your critical advise and continuous follow up to accomplished this thesis. Also I would like to provide gratitude for my friend Yitagesu Kibret for your support by supplying supporting materials and overall efforts for well going of the thesis. My friend Wondwosen Awoke, you deserve a heart full gratitude for your contribution on the development of this thesis by giving essential comment and experience sharing. Chere Mulatu, I never forgot your unlimited help by filling gap some on process of data analysis. Moreover, I would like to extend unlimited thanks to Selamawit Kibret for your professional engagement on preparing page layout of this thesis. Finally I provide great thanks for my families, friends, classmates and colleagues who exert your supportive idea and any other supports on process of working this research.

## LIST OF ACRONYMS

ADLI	Agricultural Development-led Industrialization
CBE	Commercial Bank of Ethiopia
CLRM	Classical Linear Regression Model
DBE	Development Bank of Ethiopia
EIC	Ethiopian Insurance Corporation
EPRDF	Ethiopian People Revolutionary Democratic Front
FSP	Financial Sector Profile
GTP	Growth and Transformation Plan
HSBE	Housing and Saving Bank of Ethiopia
IDS	Industrial Development Strategy
MOFED	Ministry of Finance and Economic development
NBE	National Bank of Ethiopia
PASDEP	Plan for Accelerated and Sustainable Development to End Poverty
RBM	Broad Money to RGDP Ratio
RCLM	Insurance Claim to RGDP Ratio
RINV	Insurance Investment to RGDP Ratio
RPL	Loan Provided to Private Sector to RGDP Ratio
RPRF	Insurance Profit to RGDP Ratio
RPRM	Insurance Premium to RGDP Ratio
SAP	Structural Adjustment Program
SDG	Sustainable Development Goal
SDPRP	Sustainable Development and Poverty Reduction Program
VAR	Vector Auto Regressive
VECM	Vector Error Correction Model

## LIST OF TABLES

Table 1 Description of variables and their expected relationship.....	39
Table 2 Current status and performance of banking sector in Ethiopia as at June 30, 2018 .....	41
Table 3 Current status and performance of insurance sector in Ethiopia as at June 30, 2018.....	42
Table 4 Summary of descriptive statistics of model model.....	48
Table 5 ADF unit root test results.....	49
Table 6 Leg selection for co-integration model.....	50
Table 7 Johansen Tests for Co-integration .....	50
Table 8 Granger Causality Test Result .....	51
Table 9 Long Run and Short Run Model estimation Results .....	53
Table 10 Nomality disributed disturbance test .....	55

## LIST OF FIGURES

Figure 1 The conceptual framework of the study .....	27
Figure 2 Trend of real GDP in Ethiopia from 1980-2018 .....	43
Figure 3 Trend of broad money supply in Ethiopia from 1980-2018.....	44
Figure 4 Trend of loan provided to private sector in Ethiopia from 1980-2018.....	44
Figure 5 Trend of Insurance premium in Ethiopia from 1980-2018 .....	45
Figure 6 Trend of Insurance claim in Ethiopia from 1980-2018 .....	46
Figure 7 Trend of Insurance profit in Ethiopia from 1980-2018.....	46
Figure 8 Trend of Insurance investment in Ethiopia from 1980-2018 .....	47
Figure 9 Stability Test.....	56

## **ABSTRACT**

*Banking and insurance sectors development has a vital role on economic growth. To identify the real contribution of the financial sectors, knowing the role of banking and insurance sectors to economic growth and its determinants are essential to made right decision on macroeconomic policy of the country. Although there are many previous studies on the topic of nexus between financial development and economic growth in Ethiopia, the studies were focused on only banking sector and few previous studies on the topic of nexus between insurance sector development and economic growth in Ethiopia, as far as the researchers knowledge there is no previous studies on encompass both sectors. It is a major research gap. Therefore, the aims of this study is to analyze banking and insurance sectors development in Ethiopia and its effect on economic growth using secondary data from 1980 – 2018. The data collected from NBE, EIC and World Bank data base and employed time serious data analysis using VECM. Relevant pre and post estimation tests which are unit root test, co-integration test, Granger causality test, autocorrelation test, normality test and stability test were done. The result of the study disclosed that entire explanatory variables jointly has significant and positive relationship with economic growth in long run and broad money supply/RGDP, loan provided to private sector/RGDP and insurance profit/RGDP has significant and positive association with real GDP in short run. According to Granger causality test, banking and insurance sectors and economic growth has bi-lateral causality. Moreover, the descriptive analysis showed that both banking and insurance sectors are under progress and health condition. However, both sectors are dominated by public banks, especial CBE and public insurance, EIC and the progress of insurance sector is tardy according to banking sector. On the basis of the research findings the researcher concluded that, banking and insurance sectors have vital role on economic growth in long run and short run and financial sector development and economic growth are supplementary each other. Finally, the researcher mention recommendation that ministry of finance should be restructured NBE and stratified in to two in the form of national bank of Ethiopia and national insurance of Ethiopia to improve the insurance sector performance and National Bank of Ethiopia should be bare the obligations of purchasing great renaissance dam bond and serenading of foreign currency to NBE from private banks in order to minimize burden of financial shortage of the banks, to encourage investment and to stimulate overall business activity of the country.*

**Key words:** *Economic growth, banking sector & insurance sector, VECM and Ethiopia*

# CHAPTER ONE: INTRODUCTION

## 1.1. Background of the Study

Banks and insurances are the major financial institutions. The role of banks and insurances development as well as overall financial sector development on economic growth is debated issue. According to Solomon, (2015), the economists debated specifically on the questions: does banking and insurance sectors development have a significant causal effect on the economic growth in the short run or long run? Does economic growth simply follow banking and insurance sectors development in real output? Or do they jointly influence each other? On other hand, raised the question of what is financial sector development? And how can measure it? As DFID, (2004) defined, it can be said banking and insurance sectors develop when enhance sector's stability, the sector becomes more competitive and more efficient, financial inclusion increases, raise the amount of money that is intermediated by the financial institutions within the country, increase the number of institutions, the number of products and services offered increase and improve. This implies that there is no single measurement that can include all dimensions of banking and insurance sectors development.

Banking and insurance sectors development plays a crucial role on economic growth and development process of any country (Johannes, 2011) cited by Fozia, (2015). It creates a wide range of resource mobility to stimulate the economy by attaining efficient utilization and allocation. This ensures investors confidence thus, attracts both domestic and foreign investors. Dagmawi, (2013), cited by Meron, (2016) stated that highly developed and well-functioning financial system is essential for efficient financial services and smooth flow of business activities within the economy. Other roles of banking and insurance sectors are; encouraging inflows of foreign direct investment, obtaining information on investment opportunities, reducing and managing risks, facilitating the exchange of goods and services, improvement of information asymmetries and the likes. However, the effect of banking and insurance sectors development in economic growth is not always obvious in the short-run. Some aspects of banking and insurance sector development may also cause an economy to fail. Financial liberalization is one way of financial sector development which may lead to financial crisis if it is not managed properly (Mishkin, 2012); Wondaferahu, (2010) cited by Roman, (2012).

Banking in Ethiopia started in 1905 with the establishment of the bank of Abyssinia. Before the 1974's revolution the number of active banks in the country was nine with a total of 113 branches. Of which three of them (Banco Diroma, Banco Di Napoli and Addis Ababa bank) were private banks

(Alemayehu, 2006). During Dergue regime, in 1975 all private financial institutions which are three commercial banks, thirteen insurance companies and two non-bank financial intermediaries were nationalized. The government restructured and formed as one national bank (NBE), one commercial bank (CBE), one insurance company (EIC) and two specialized banks (HSBE & DBE). HSBE used to lend for construction of residential and commercial buildings, while DBE was mainly accountable for financing industrial and agricultural projects (Roman, 2012). Currently in Ethiopia, there are 18 banks; of which 16 are private banks and 4,757 bank branches. The banks total capital is birr 85.8 billion, total deposit is birr 730.3 billion, total outstanding loan is birr 449 billion (NBE, 2018).

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). After financial sector reform in 1994, declare the proclamation for the licensing and supervision of insurance business No. 86/1994 and after declaration of the proclamation private insurance companies began to raise (Henok, 2016). Currently in Ethiopia, there are 17 insurance companies. Their total capital is reached to 5.5 billion and Gross premium is raised to birr 8.6 billion. The number of branch offices has enhanced to 532 (NBE, 2018).

In the last phase of imperial regime the country applied market-based economic policy. Alemayehu, (2007) stated that, the GDP of the country was growth 4.4% in average during 1960-1974. During the Dergue regime government nationalized land and other private properties like extra houses, industrial and financial firms. It dwarfs aver all economic activity and growth (Clapham, 1988) cited by Hussien, (2004) and Neway, (2017). After down of Dergue the following government declared free market policy. It stimulates the economic activity and the can achieved 10.6% economic growth on average over past decade from 2004 – 2015 (World Bank, 2016). A strong economic performance in this period has helped turn Ethiopia into one of the fastest growing non-oil producing economies on the continent; it was lead mainly by the agriculture and service sectors (FSP, 2012).

Generally accepted view that banking and insurance sectors development proceeds economic growth in almost every country. In the Ethiopian economy, banking and insurance sectors development is delayed by government intervention. Another factor for the lagged banking and insurance sectors development is most share of the sector hold by government. By contrast, the implementation of reforms, privatization of state owned banks and insurances and the entry of foreign banks and insurances reduce transaction cost and enhance credit availability and enhanced reliability (Berlin, 2009). Therefore, banking and insurance sectors reform plays a crucial role in improving the efficiency of the sector which used as an engine to achieve economic growth.

## **1.2. Statement of the Problem**

In case of Ethiopia, it is challenging to identify the effect of banking and insurance sectors development on economic growth; because of the unstable, more informal and weak recording macroeconomic environment and the undeveloped financial system and no financial market.

Post 1991 the EPRDF government adopted a market-oriented economic policy which brought a significant change in the development and overall structure of the financial sector. Then strong state control and bias has been reduced and promoted domestic and foreign direct investment. However, until now the state still plays a dominant role in the economy. The banking and insurance sectors are highly regulated by the governor by means of credit restriction, equity market control, resource allocation control and foreign exchange control. The private banks are obligated to purchase great renaissance dam bond equivalent to 27 percent of each disbursed loan by five percent interest rate. It is two percent less from saving interest paid by the banks to the depositors. Also they are obligated to serenade 30 percent of their foreign currency to NBE by buying rate price. In addition entire government finance is hold by public banks and every credit facility provided to government owned companies are financed by public banks. In case of insurance companies, NBE obligated them to hold 65 percent of their collected premium in the form of cash or cash substitute form. It create high amount of idle asset in sector and it leads the company to inefficiency. Moreover, financial sector of the country is limited by only domestic financial institutions and owned by only Ethiopian citizens. It makes the Ethiopian banking sector remained isolated from the impact of globalization.

Currently in Ethiopia, there are 18 banks (of which 16 private banks) and 4,757 bank branches, 17 insurance companies (of which 16 private insurance companies) and 532 insurance branches. However, Ethiopia's banking and insurance sector is dominated by the state ownership financial institutions. Of total capital of the banking system birr 85.8 billion, private banks accounted for

39.9% while that of public banks namely CBE and DBE, accounts the remaining 60.1%. Of total banks deposit of birr 730.3 billion, CBE accounted 62%. Of the banks total outstanding loan of birr 449 billion 53.8% is owned by public banks and the private banks share the remaining 46.2% (NBE, 2018). There is similar scenario at insurance sector. The state owned Ethiopian insurance corporation holds 35% of total market share. The number of population that uses bank and insurance are only 5.6% of total population. Especially the number is very low at rural areas. Of total bank branches, 35.3% is found at Addis Ababa and total insurance branches, 53.6% is placed in Addis Ababa (NBE, 2018). It leads to inefficient utilization of the country's financial asset.

The inefficiency of banking and insurance sector raised the transaction cost and channel savings of households into physical assets and high number of uninsured asset which in turn reduces investment and reduces growth. There is also a huge gap between savings and need of investment which the Ethiopian banking sector is unable to bridge them. Similarly there is a huge gap between potential capital and insured capital in Ethiopia. In general the banking and insurance sectors of Ethiopia needs deep structural reform and high improvement to maximize the sectors efficiency and enhance their effect on economic growth of the country.

There are previous studies related to this topic throughout the world. Also in Ethiopia various 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. The result of Hailay, (2015) cited by Neway, (2017) is insignificant in both long run and short run by using the same independent variable. Dejene, (2016) cited by Neway, (2017) obtained negative relationship result by using only 24 years data after 1991. The study of Meron, (2016) used broad money and private sector credit as independent variable and the result shows as economic growth have a significant positive effect on financial development. Fozia, (2016) customized commercial banks-central bank asset ratio as independent variable and approved that economic growth of Ethiopia is significantly influenced by financial sector development. Neway, (2017) used the ratio of total domestic credit to GDP, private credit to GDP ratio, government expenditure to GDP ratio, broad money to GDP ratio, consumer price index and trade openness as independent variable and obtain long run relationship between dependent variable and independent variables and his finding disclosed positive relation in long run. The study of Tekilu, et.al (2018) used bank credit, human capital, inflation, openness to trade, government expenditure and gross investment

as independent variable. This study customized the linkage of financial sector development indicators (independent variables) with dependent variable (GDP) in stratified form in sectors (Agriculture, Industry & Service) rather than aggregate output. The outcome indicates that financial sector development had a less significant positive impact on agricultural and service sector in long run and insignificant in short run and it has a positive and significant impact on industrial and aggregate output growth both in the short run and long run. 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.

As far as the researcher's knowledge, although many previous studies done on topics of nexus between financial sector development and economic growth, entire studies customized banking sector development only; ignored insurance and other financial institutions. On other side, similar studies were done on the topic of insurance sector. However, the studies on insurance sector individually can't reflect the real effect of financial sector development on economic growth and there is no previous studies on encompass both banking and insurance sectors. These are the major research gaps identified by the researcher. Therefore, this study analyzed and estimated long run & short run effect and causality between banking and insurance sectors development and economic growth in Ethiopia to fill the research gaps of previous studies by using time series data from 1980-2018.

Broad money supply/RGDP and loan provided to private sector/RGDP were used as independent variables for banking sector and insurance premium/RGDP, insurance claim/RGDP, insurance profit/RGDP and insurance investment/RGDP were used as independent variables for insurance sector and real GDP as dependent variable. Distinctively from previous studies, the researcher was studied on the topic by combining both major financial sectors bank and insurance and assesses the development trend and current status of both sectors. Therefore, this study was disclosed the real effect of financial sector development on economic growth in Ethiopia and it will show appropriate figure to policy makers.

### **1.3. Objective of the Study**

#### **1.3.1. General objective**

The general objective of this study was to assess the status and performance of banking and insurance sectors development in Ethiopia and its effect on economic growth.

#### **1.3.2. Specific objectives**

The specific objectives of the study were;

1. Assess the status, performance and trend of banking and insurance sectors in Ethiopia overtime and its relation with economic growth.
2. Investigate the effect of banking and insurance sectors development on economic growth in Ethiopia in short run and long run.

### **1.4. Research Hypothesis**

Ho: There is a positive and significant short run and long run association between banking and insurance sectors development and economic growth in Ethiopia.

### **1.5. Significance of the Study**

The researcher believed that the study will be essence to provide empirical evidence for policy makers and financial institutions in the field to justify the effect of banking and insurance sectors development on economic growth in Ethiopia when designing a macroeconomic policy. 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 of the Study**

The study was delimited only with regard to assess growth trend, status and performance of banking and insurance sectors and examined the short run and long run association of banking and insurance sectors development and economic growth in Ethiopia. According to time frame, the study was delimited with the period between years of 1980 – 2018.

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. The researcher was used only two variables as indicator of banking sector development due to lack of appropriate data.

## **1.7. Organization of the Thesis**

The paper will organize into five chapters. Chapter one stands for introduction of the study. This chapter includes such essential parts of the study like background of the study, statement of the problem and objective of the study. The literature review part of the study presented in chapter two. This chapter discusses the views of other authors and previous researches on the field. It contains five sub parts. The first sub part discussed about the theoretical framework on better understanding aspects of banking and insurance sector development and economic growth. The second sub part presents review of empirical studies. The third sub part discussed the specific factors that influentially affect banking and insurance sector development. The fourth sub part skims gaps in existing literature and the last sub part discussed about conceptual framework of the study. Chapter three deals with research design and methodology used to carry out the study. It contains research design, model specification, data type, source and instruments of data collection and methods of data analysis. The next main chapter is fourth chapter. This chapter deals with the results and analysis of the findings. It contains data presentation, analysis of the result and interpretation. Finally, the last fifth chapter presents summary, conclusions and recommendations.

## **CHAPTER TWO: LITERATURE REVIEW**

This chapter was discussed the views of other authors and previous researches on the field. It contains five sub parts. The first sub part discussed about the theoretical framework on better understanding aspects of banking and insurance sector development and economic growth. The second sub part presents review of empirical studies. The third sub part discussed the specific factors that influentially affect banking and insurance sector development. The fourth sub part skims gaps in existing literature and the last sub part discussed about conceptual framework of the study.

### **2.1. Theoretical Literature Review**

#### **2.1.1. Concepts and definitions**

The theory of finance and economic growth was introduced by (Schumpeter, 1911). He argues that financial intermediation through the banking channel plays a vital role in economic growth. The central argument of Schumpeter (1911) was financial sector development affects economic growth through financial system and financial services improvement that provided by banking and other financial institutions.

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. Banking business makes profit by selling liabilities with one set of characteristics (a particular combination of liquidity, risk, size and return) and using the proceeds to buy assets with a different set of characteristics through the process of asset transformation (Mishkin & Eakins, 2012). Banks are involved in the intermediation of funds from the surplus to the deficit economic units to maximize profits and stimulate the development in the financial system as well as overall economy. According to Levine (2004), the major functions of banking institutions are: offer information about possible investments and allocate capital, monitor investments and apply corporate governance after providing finance, mobilize deposit and facilitate the exchange of goods and services and the major functions of insurance institutions are diversification and management of risk.

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 banking and insurance sectors development**

The theory of finance and growth was introduced by (Schumpeter, 1911). He argues that financial intermediation through the banking channel plays an important role in economic growth. The main argument of Schumpeter was that financial development affects economic growth through technological changes and that financial services to businesses are better provided by banking institutions than securities markets.

Financial development has a dual effect on economic growth. On the one hand, the development of financial markets may enhance the efficiency of capital accumulation hence increasing marginal productivity of capital. On the other hand, financial intermediation can contribute to raising the savings rate and investment rate hence, increasing economic growth. This effect is first emphasized by Goldsmith (1969), who also finds some positive correlation between financial sector development and the level of real GNP per capital. He attributes this correlation to the positive effect that financial development has in encouraging more efficient use of the capital stock.

McKinnon, (1973) and Shaw, (1973) extend the earlier argument by noting that financial sector dependent implies that not only higher productivity of capital but also a higher savings rate and therefore, a higher volume of investment. In particular, McKinnon (1973) and Shaw (1973) argue that policies that lead to financial domination Thus they conclude that higher interest rates resulting from financial liberalization encourage households to increase savings and vice versa.

The empirical validity of the McKinnon-Shaw hypothesis has been criticized by various authors. For instance Díaz-Alejandro (1985), argues that the Latin American experience shows that financial development is unlikely to increase savings; therefore, the main contribution of financial sector development to growth should be thought of as increasing the marginal productivity of capital rather than the volume of savings and investment.

Recent theoretical work has incorporated the role of financial sector development in models of endogenous growth in an attempt to analyze formally the interactions between financial sector development and long-run economic growth. Greenwood and Jovanovic, (1990) affirm a model in which both financial development and economic growth are endogenous. In their framework, the role of banks and insurances are to collect and analyze information and to channel investible funds to the investment activities that produce the highest return.

### **2.1.3. Theories of economic growth**

Economic growth is a result of several macroeconomic policies and institutional manner of a country. In the modern literature on economic growth, Solow (1956) and Swan (1956) are the primary point of reference in considering a growing population coupled with a more efficient labor force. It has dominated the theories of long-run economic growth and the model is based on a constant return to scale production function. The Solow model investigates the effects of the division of output between investment and consumption on accumulated capital growth. The direct consequence of this approach is the strong links between long-run growth rates and demographic factors such as the structure of the labor force, the growth rate of the population and growth rate of productivity. These factors are all taken to be exogenously determined and postulated to explain the steady-state level of income per capita. Technology is also assumed to progress of an exogenous factor.

The Solow model focuses on four variables. In the production function, output (Y) is given by capital (K), labor (L) and knowledge or the effectiveness of labor (A). Thus, the standard Solow Cobb-Douglas production function is given by  $Y=AK^\alpha L^{1-\alpha}$ ,  $0 < \alpha < 1$ . (Pack, 1994) cited in Meron, (2016). Technology and knowledge are developed by collaboration with physical capital. This is importance for understanding how growth processes can be stimulated. The other implication of the Solow model states that, regardless of the initial per capita stock, all countries will converge to same steady state rate and an equivalent standard of living in the long run. This is the hypothesis of convergence growth theory.

#### **2.1.3.1. Exogenous growth model**

This model is an extension to the Harrod-Domar model. The most important inventor to this model is Robert Solow. The main assumption of the Solow growth model is that, capital is subjected to diminishing returns. Within a fixed stock of labor, the impact on output of the last unit of accumulated capital will be always less than the previous one. Assuming for no

technological progress or labor force growth, diminishing returns implies that at some point the amount of new capital produced is sufficient to cover the amount of existing capital lost due to depreciation (Costantine, 2013). According to Sorensen & Jacobsen, (2005) beyond some point, the marginal returns to new capital will be smaller than the marginal cost of additional capital. At this point, in connection with assumptions of no technological progress of labor force growth, the economy ceases to grow. Thus, in the exogenous growth models financial markets have no role in promoting the long run economic growth.

The limitations of the model include its failure to take account of entrepreneurship and strength of institutions. In addition, it does not explain how or why technological progress occurs.

### **2.1.3.2. Convergence growth theory**

The hypothesis of convergence growth theory states that poor countries have a tendency to grow faster than rich countries. Due to the diminishing marginal return to capital, low levels of capital stock countries will have higher marginal product of capital and grow faster than countries which have high levels of per capita capital stock within similar saving rates. Hereafter, countries converge to their balanced growth paths and expect that developing countries catch up with the developed ones.

In the extended model of Barro, (1991), there are incentives for capital to flow from rich to poor countries. The opponents of the unconditional convergence theory have argued that countries must converge to their steady states. The neoclassical growth theory includes the fact that different countries can reach different steady state rates and there is no need for two countries to converge to each other. This hypothesis leads to the notion of conditional convergence. Mankiw, Romer and Weil (1992) have introduced an extended Solow model and they argue that Solow did not predict that all countries would reach the same level of per capita income but rather their respective steady state. Conditional convergence is exist if the growth rate of per capita income is negative correlated with the initial value of per capita income and conditional on some fixed variables. Different economies can only converge to the same steady state rate if they have the same rate of population growth, saving, depreciation rate and technology (Barro, 1991) and Mankiw et al, (1992).

### **2.1.3.3. Endogenous growth theory**

The endogenous growth theory emerged in the 1980s. Romer, (1986) and Lucas, (1988) has a lion share on development of this theory. This theory distinguishes itself from the neoclassical theory by emphasizing that technological progress is an endogenous outcome of an economic system, not the result of forces that impose from outside. Romer, (1986) has specified an equilibrium model of endogenous technological change, arguing that long-run growth primarily is driven by accumulation of knowledge. The new direction does not emphasize the concept of convergence and it designed based on either constant or increasing returns to scale in capital, postulating a growth in the gap between poor and rich countries.

The essence of many of the endogenous growth theories is reflected in an AK-equation (Pack, 1994) cited by Meron, (2016). In the equation, output is affected by A, factors that affect technology, and K, which includes both human and physical capital. Another interpretation is that K represents the variety or quality of inputs. For example, by using financial variables as endogenous variables to promote technological progress, it is possible to accelerate economic growth. Besides finding new ways in which endogenous technological changes and endogenous variables, like the development of the financial sector can affect economic growth. The theory revives interest in long-term economic growth.

### **2.1.4. Historical background of banking sector development in Ethiopia**

The history of modern banking in Ethiopia was started in 1905 with the establishment of the bank of Abyssinia. It was established based on fifty years agreement signed between the Ethiopian government and the national bank of Egypt with initial capital of one million shillings. According to the agreement, the bank was allowed to engage the commercial banking (selling shares, accepting deposits and effective payments in changes) and to issue currency notes. The agreement provided the establishment of any other bank in Ethiopia. It started operation after a year by opening branches in Harar, diredawa, Gore and Dumbi Dolo as well as an agency office in Gambela and a transit office in Djibouti (FSP, 2012).

The Ethiopian government under Emperor Haileselassie I closed the bank of Abyssinia after paying compensation to its shareholders and established the bank of Ethiopia, which was fully owned by Ethiopians and started operation in 1932 with a capital of £ 750,000.00. The major shareholders of the bank were the emperor and the political elites of the time. The bank was authorized to combine the functions of central banking like issuing currency notes and coins and

commercial banking. The bank of Ethiopia opened branches immediately in Dire Dawa, Gore, Dessie, Debretabor and Harar (Befekadu, 1995) cited by Abreha, (2015).

During 1936-1942 there are three Italian banks Banco Diroma, Banco Dinapoli and Banco Dinazionale de laboro were working in the country. Also Barclays Bank had opened a branch and operated in Ethiopia during 1942-43. In the 1943 Banque DelIndo chine was opened and functioned until 1963. In 1945 the agricultural bank was established but it replaced by the development bank of Ethiopia in 1951 (Pankhrust, 1968) cited by Alemayehu, (2006). It changed to agricultural and industrial development bank of Ethiopia in 1970.

After departure of Italy the state bank of Ethiopia was established in 1943, with initial capital of one million Maria Theresa Dollars by a charter published as general notice No. 18/1936. The bank commenced operation by combining the functions of central banking with those of commercial banking by opening 21 branches, including one branch in Khartoum (Sudan) and a transit office in Djibouti (FSP, 2012). According to MEDaC, (1999) the first privately owned bank in Ethiopia was the Addis Ababa bank SC, it established in 1964. 51% of the shareholders of the bank were owned by Ethiopians, 9% foreigners living in Ethiopia and 40% of the share owned by the National and Grind lays bank of London.

During Dergue regime, in 1975 all private financial institutions which are 3 commercial banks, 13 insurance companies and two non-bank financial intermediaries were nationalized. The government restructured and formed as one national bank (NBE), one commercial bank (CBE), one insurance company (EIC) and two specialized banks (HSBE & DBE). HSBE used to lend for construction of residential and commercial buildings, while DIB was mainly accountable for financing industrial and agricultural projects (Roman, 2012).

After reform, the transitional government of Ethiopia was established and the new economic policy; it is centrally planned economic system with a market oriented system and shared in the private sector (Alemayehu, 2006). Currently in Ethiopia, there are 18 banks; of which 16 are private banks and 5,757 bank branches. The banks total capital is birr 85.8 billion, total deposit is birr 730.3 billion, total outstanding loan is birr 449 billion (NBE, 2018).

### **2.1.5. Historical background of insurance sector development in Ethiopia**

The history of insurance 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. The Swiss insurer Balois open a Branch office in Addis Ababa in 1923 and soon followed by other foreign companies working on agency basis. 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, as per the survey conducted in 1954 by the Ministry of Commerce and Industry, Insurance activities was made by 18 foreign insurance companies, branches or agents and one domestic insurance company called Imperial Insurance company. The number of domestic insurance companies was reached to 13 and the total number of insurance was enhanced to 33 in 1960. According to Hailmichael, (2011) Ethiopia's insurance market was not regulated until 1960s. The first proclamation was enacted in 1970 as a result of foreign companies were prohibited directly or indirectly on transacting insurance business in Ethiopia after some companies converted to domestic companies in line with the requirement of the law. Pursuant to the proclamation of 1970, regulation number 281/1970 was issued by the Ministry of Commerce, Trade and Tourism on matters which help to create conducive insurance market. After the issuance of the proclamation 15 domestic insurance companies, 36 agents, 7 brokers, 3 actuaries and 11 assessors has been licensed immediately 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). After financial sector reform in 1994, declare the proclamation for the licensing and supervision of insurance business No. 86/1994 and after declaration of the proclamation private insurance companies began to raise (Henok, 2016).

The recent legal basis for the insurance industry in Ethiopia is proclamation number 746/2012, which was issued on 22 August, 2012 and directive SIB/34/2013 issued to set up a Supervisory organ for Insurance Business and applied effective date from 15 April, 2013. This proclamation set minimum paid up capital requirement become to birr 60 million for non-life insurers, 15 million for life insurers and 75 million for composition of both insurers. Based on local re-insurance directive no SIB/44/2016 issued by NBE, local re-insurers is required with minimum subscribed capital requirement of birr 2 billion, of which 50% of the subscribed is paid up capital (Belay, 2001).

Currently in Ethiopia there are 17 insurance companies, nine of them are composite insurance (transacting both general insurance and long term insurance). Out of the 17 insurance companies, one is state owned and 16 are private owned insurance companies. Their total capital reached 5.5 billion and Gross premium is 8.6 billion. The number of branch offices has reached 532. Moreover, over 1,950 insurance sales agents, 53 insurance brokers, 97 loss assessors and two surveyors are operating in the market. There are two reinsurance companies in Ethiopia these are Africa Re-insurance and Ethio Re-insurance. Also micro insurance companies were established to provide to the low level income societies (NBE, 2018).

#### **2.1.6. Review of Ethiopian economic growth**

Ethiopia's economy is highly vulnerable to external factors due to its dependency on primary commodities and rain based agriculture. Agricultural productivity remains low even though agricultural production has increased considerably (Mwanakatwe and Barrow, 2010). Ethiopia is one of the poorest countries in the world. Rainfall and commodity price have a major influence on growth of the country.

Ethiopia's economy during imperial regime (1930-1974) was characterized by lack of dominant paradigm. Economic and social development of the country during 1941 – 1957 was very stagnant. During this time foreign and domestic whole sale trade was mainly controlled by foreigners (mainly Americans, Greeks, Italians, Arabs and Indians) (Amha, 2012) cited by Neway, (2017). The imperial regime adopted a market oriented economic policy. According to Alemayehu, (2007) average growth of GDP during 1960-1974 was 4.4 percent and average capital per capita was 1.5 percent. In 1957, Ethiopia adopted 'five years plan' to overcome economic problems. However, it was an entirely indicative and aspiration kind. The plan was incapable of reforming the structure of land. Moreover, the strategy followed during the first five year plan was one of the important substitutions based on light consumer goods destined for the local market and anything put for export of manufactured goods. The manufacturing sector was unable to attain sustained growth because it did not venture into export or in to the production of the utilized inputs locally.

The Dergue regime adopted socialist economy; it was characterized by nationalization of land and other private properties such as extra houses, commercial farms, industrial and financial firms. The most successful economic measures of the Derue was nationalization of land, large scale mechanized state farms, farmers cooperatives, pillarization, organization of urban and rural

dwellers by deploying students. The major critics of Dergue regime was the 1975's land reform was gave only "use right" but not "private ownership right" which the farmers were claiming for domination of the "peasant association" and the emergence of "producers' cooperatives" and the emergence of grain marketing and pricing policies. The peasant associations were converted to extensions of state power rather than agencies of self-administration (Clapham, 1988:161) cited by Neway, (2017). In parallel to this economic reform, natural disaster, famine and drought had a depressing effect on the history of economic growth of the country. The severe drought that took place in 1984/85 was main factor for the decrease in total GDP. In this year the growth rate was declined by 3% and per capita income was declined by 10% (Genye, 2011).

During the era of EPRDF after 1991, the country customized policy reform which is structural adjustment program (SAP) in 1992/93. The aim of this program is to attain sustainable development and poverty reduction, through structural transformation from centralized economy to market lead economy. Further, the government designed and applied Agricultural Development-led Industrialization (ADLI), it focuses on productivity enhancement of the small land holder peasants through increased utilization of improved seed, fertilizer and farming techniques. With respect to trade, the country is oriented outwardly favoring export sector (EEA/EEPRI report, 2009) cited by Fozia, (2016).The philosophy of ADLI is that agricultural development plays a leading role in the industrialization process by preparing various conditions for full-fledged industrialization. Primary principle of industrial development strategy (IDS) is the linkage between industry & agriculture. Export oriented sectors should lead the industrial development and be given priority. Labor intensive sectors are also given priority to maximize employment (Kenichi, 2009 and Mulu, 2013).

African Development Bank Group stated that, the government of Ethiopia achieved a remarkable progress on taking measure on liberalization of market and other key economic sectors. During this decade, agricultural production increased 104 quintals in 1996/97 from 60 quintals in 1980s. The annual average share of industry as percentage of GDP increased from 9.6 percent in 1980s to 11.4 percent in second half of 1990s (African Development Bank Group, 2000:8).

Ethiopia applied "Developmental State" economic model since 2002, which is practically applied in the "four tiger" East Asian countries before. Then the country applied sustainable development and poverty reduction program (SDPRP) (2002/03-2004/05), plan for accelerated and sustainable development to end poverty (PASDEP) (2005/06-2019/10) and growth and transformation plan GTP I (2010/11-2014/15 and GTP II (2015/16-2019/20). The objective of

these programs are to achieve an accelerated and sustainable development insuring the outputs of development to poor citizens, improving the country's status and ending external aid, achieving accelerating economic growth through developing free market economy (MOFED, 2010). GTP I mainly focused on addressing the millennium development goal and GTP II focused on realizing vision of becoming lower middle income country in 2015. Sustainable development goal (SDG) is inter in to account in GTP II (MOFED, 2015).

During GTP I the country achieved 10.1% real GDP growth. The GDP share of agriculture, industry and service in this time frame was averagely 39.5%, 14.3% and 46.2% respectively. On other hand inflationary pressure was a major macroeconomic challenge emerged in first two years of GTP I. The general inflation rose to 38% in 2010/11 and 20.8% in 2011/12. However, it can be diminished the inflation to 13.5% and 8.1% in following couple of years respectively (NBE, 2016).

The current Ethiopia is landlocked country and heavily dependent on rain fed agriculture for its economic subsistence. Ethiopia's modern history reflects the institutional legacy of internal conflict and external treat. Internally: religion, regional location, ethnicity and nationality have exert negative effect on economic growth of the country (Alemayehu, unpublished, 2007) cited in Neway, (2017). According to Mwanakatwe and Barrow, (2010) current Ethiopian economic growth can be explained by: increased domestic revenue mobilization, aid and debt, aggressive public and private investment to address infrastructure hurdle, enhanced government expenditure to enhance pro-poor growth and expansion of exports and remittance.

### **2.1.7. Indicators of banking and insurance sector development**

Banking and insurance sector development can be measured using various indicators. The most commonly used indicators are:

1. Commercial banks - Central bank ratio: the ratio of commercial banks assets to the sum of commercial banks and central bank assets (Roman, 2012).
2. Private Credit to GDP ratio: credit issued to the private sector by banks and other financial intermediaries divided by GDP. It measures the activities of financial intermediaries by transferring savings to investors. Countries which have higher levels of private credit to GDP ratio, they have been grows faster (Beck, et al. 2007).
3. Liquid Liabilities to GDP ratio: It is a major indicator of measuring the size of liability relative to the economy. It consists of currency plus demand deposit, interest bearing

liabilities of banks and other financial intermediaries divided by GDP. It is the largest available indicators of financial intermediation (Beck & Demirguc-kunt, 2009).

4. Stock Market Capitalization: the ratio of the value of domestic shares to GDP. It shows the size of the stock market relative to the size of the economy.
5. Private bond market capitalization to GDP ratio: It is the total outstanding of domestic debt securities issued by private or public domestic firms divided by GDP.

These measurements are not sufficient by themselves to show the magnitude of banking and insurance sector as well as overall financial sector development. The findings of Demirguc-Kunt and Levine, (2008) emphasize the role of government in organizing the operation of financial systems especially in developing countries.

Benhabib and Spiegel, (2000) used the degree of the financial markets development as a proxy for market imperfection and interrelate them with measures of wealth or income distribution, if they influence either economic growth rates or investment rates and their result shown that banking and insurance development positively influences both rates of investment and growth of total factor productivity.

## **2.2. Empirical Literature Review**

The relationship between banking and insurance sector development and economic growth has been one of the most debated issues. The question to debate is finance sector development leads to economic growth? Or economic growth has been cause of financial sector development? Or they have no any relation? The question as well as the answers is very essential issues to policy makers and policy implementers (Sime, 2016).

The researches abound both in advanced and developing countries, the direction of causality has not been clearly determined. It is not clear whether economic growth is cause of banking and insurance sectors development is the cause of economic growth. There are two schools of thoughts (Gold Smith- Mckinnon - Shaw School of thought and structuralist and neo structuralist school of thought) and four hypothesis (Supply leading hypothesis, demand-pulling hypothesis, bi-causality (feedback) hypothesis and independent hypothesis) corning this debate.

### **2.2.1. Finance-lead growth (Supply-leading hypothesis)**

This approach is supported by Gold Smith- Mckinnon - Shaw School of thought, it postulates that financial sector development positively affects economic growth. It affirms that the financial sector allocates resources efficiently, mitigates the problem of unbalanced information, mobilizes deposit, monitors firms, manages risk and reduces operation costs among others.

King and Levine, (1993) presented cross-country evidence that the financial system can promote economic growth by using data of 80 countries over the 1960 to 1989 period. Various measures of the level of financial development are strongly associated with real per capita GDP growth, the rate of physical capital accumulation and improvements in the efficiency which economies employ physical capital.

De Gregorio and Guidotti, (1995) studied the relationship between long-run growth and financial sector development, proxies by the ratio between bank credit to the private sector and the GDP in 100 countries from 1960 to 1985 and in 12 Latin American countries from 1950 to 1985. They found that this proxy is positively correlated with growth in a large cross-country sample. However, its impact changes across countries and is negative in a panel data for Latin America. They concluded that the main channel of transmission from financial sector development to economic growth is the effect on the efficiency of investment, rather than its level.

Ahmed and Ansari, (1998) investigate the relationship between financial sector development and economic growth of three South-Asian economies, namely; India, Pakistan and Sri Lanka using pooled data based on time-series and cross-sectional observations, reinforce the findings of the causality analysis, suggesting that financial sector development has a significant contribution to economic growth in these countries.

Mezgebe, (2010) examine whether there is strong correlation between the growth of the insurance industry and the growth of the economy in Ethiopia and analyzed the effects of cross boarder re-insurance business on the growth of local insurance industry and hence to economic growth, over the period 2000-2009 period for the variables; Gross written premium, net retention premium, claimed incurred, cession premium, and cession claimed over the period. The results of the study revealed that, the insurance industry in Ethiopia contributes little to the growth of the economy and to the financial sector too, as well as the cross border (re-insurance) does have a negative influence over the growth of insurance industry and the economy, due to the existence of unbalanced outflow and inflow of the premium cede and claim recovered respectively.

Akinlo and Egbetunde, (2010) explained the long run and causal relationship between financial development and economic growth for ten countries in sub-Saharan Africa using time series data during the period of 1980 to 2005. They found that financial sector development is co-integrated with economic growth. Schumpeter, (1911); Waqabaca, (2004); Roman, (2012); Meron, (2016); Fozia, (2016); Neway, (2017); Tekilu, et. Al. (2018) and others support this argument.

### **2.2.2. Growth-lead finance (Demand pulling hypothesis)**

In antagonism to finance-lead growth (supply-leading hypothesis) the growth-lead finance (demand-pulling hypothesis) reflected that economic growth cause financial sector development. Financial sector development comes after economic growth and financial sector development by itself is not a leading factor to growth. This argument is supported by structuralist and neo-structuralist school of thought (Waqabaca, 2004; Majid and Mahrizal, 2007; Odhiambo, 2007).

Waqabaca, (2004) inspects the relationship between financial sector development and economic growth in Fiji using time series data from 1970-2000. He found a positive relationship between financial sector development and economic growth for Fiji with the direction of causation running predominantly from economic growth to financial sector development. This outcome is consistent with results found for countries which have less sophisticated financial systems.

Odhiambo, (2004) investigates the direction of causality between financial sector development and economic growth in South Africa using time series data from 1968 to 2000. Three proxies of financial development are used against RGDP per capita growth, a proxy for economic growth. The study reveals that supply-leading hypothesis has been rejected in SA and instead there is demand-following response between financial sector development and economic growth. This implies that, for South Africa, the economic growth leads the development of financial sector.

Odhiambo, (2007) studies empirically the direction of causality between financial Sector development and economic growth for three sub-Saharan African countries which are Kenya, South Africa and Tanzania. He used data of 1980 to 2005. The study identified that the direction of causality between financial sector development and economic growth is sensitive to the choice of proxy variable for financial sector development. In addition, the strength and clarity of the causality evidence is found to vary from country to country and time to time. He concludes that a demand-pulling response is found to be stronger in Kenya and South Africa than Tanzania.

Odhiambo, (2011) examines the dynamic causal relationship between financial deepening and economic growth in Tanzania from 1980 to 2005. Unlike the most of the previous studies, this study includes foreign capital inflows as an intermittent variable between financial deepening and economic growth. The study finds a different unidirectional causal flow from economic growth to financial depth in Tanzania. The study concludes that financial sector development in Tanzania follows growth, irrespective of whether the causality is estimated in a static or dynamic formulation.

### **2.2.3. Bi-directional causality (Feedback hypothesis)**

Bi-directional causality (feedback hypothesis) argues that a two-way causal relationship between financial Sector development and economic growth. A country with a well-developed financial system could promote fast economic growth through technological change as well as product and service innovations in the financial sector. If the countries create a high demand for financial services, it will stimulate economic growth. Thus, financial sector development can affect economic growth at a certain stage of development and the reverse causality will be found later on. This view is supported by Luintel and Khan, (1999); Calderón and Liu, (2003); Sanchez et al, (2011); Christina, (2013) and Sime, (2016).

Luintel and Khan, (1999) studied the long run nexus between financial sector development and economic growth in 10 developing countries which are Costa Rica, Columbia, Greece, India, Korea, Malaysia, Philippines, Sri Lanka, South Africa and Thailand by using time serious data from 1936 to 1941. They identified the long run financial development and output relationships in a co-integrating framework through tests of over-identifying restrictions. The study concluded that there is a bi-directional causality between financial sector development and economic growth in all the ten selected countries.

Caldeón and Liu, (2003) examines the direction of causality between financial development and economic growth using pooled data of 109 developing and industrial countries from 1960 to 1994. The study identified that the bi-directional causality between financial sector development and economic growth exists in 87. On other hand, the causal relationship from financial sector development to total factor productivity growth is stronger in developing countries, while the causal relationship of total factor productivity to financial sector development is stronger in industrialized economies.

Sanchez et al, (2011) studies the role of financial sector development in economic growth in lower and middle-income countries; namely South Asia, sub-Saharan Africa, East Asia & Pacific, Europe & Central Asia, Middle East & North Africa, Latin America & Caribbean, High-

income OECD countries and High-income non-OECD countries classified by geographic regions. They found a positive relationship between financial sector development and economic growth in developing countries and short-term multivariate analysis provided mixed results: a two-way causality for most regions and one-way causality in the couple of the poorest regions, East Asia & Pacific and sub-Saharan Africa. Furthermore, other variables from the real sector such as trade and government expenditure play an important role in explaining economic growth. Therefore, it seems that a well-functioning financial system is a necessary but not sufficient condition to reach to attain economic growth in developing countries.

#### **2.2.4. Independent hypothesis**

The last hypothesis is independent hypothesis. This view described that financial sector development and economic growth are independent. This steady relieved that; financial sector development has no effect on economic growth and vice-versa. There is no causality between financial sector development and economic growth. They are not correlated (Deidda and Fattouh, 2002 and Aderaw, 2012).

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.

### **2.3. Factors Affecting Banking and Insurance Sectors Development**

The main reason of banking and insurance sector as well as overall financial sector development raises some important questions. Such as, why some countries have so much huge capital markets as compare to others? Why Germany and Japan have huge banking systems as compare to the other wealthy countries? Why the United States of America and United Kingdom have massive financial markets? Why countries like Germany and France have comparatively smaller financial markets. There are various significant reasons for the different levels of financial sector development in different countries (Noureen, 2008) cited by Meron, (2016).

### **2.3.1. Legal matters**

As per La Porta, (1998) investigation, countries with weak investor protection rights have small and very narrow equity and debt markets. It is also observed that countries with weak civil laws have weak investor's protections as well as less developed capital markets.

Private property rights are important to structure the foundation of banking and insurance sector development. Legal matters in terms of differences in the abilities of enhance efficiently in the developing socioeconomic conditions. Countries which have efficient adapting legal systems that minimize the gap between financial needs of the economy and the capabilities of the legal systems help to show banking and insurance sector development (Beck, 2002).

### **2.3.2. Policy matters**

Policy is one the most important issues related to banking and insurance sector development. Dela Torre, (2007) cited by Meron, (2016) studied the requirement of policy for financial sector development. The three main areas identified to achieve deep and strong financial systems included; strong stock markets, financing of small and medium enterprises and defined contribution of pension system. The governments are required to provide best mechanism for the provision of efficient resource mobilization and risk allocation. Another vital responsibility of government is the implementation of sound and prudential rules and regulations including appropriate accounting policy, procedures and supervisions. It can help a country to avoid financial crises and alleviate costs with minimum moral hazard.

Finally it is suggested that to achieve high levels of banking and insurance development the governments should focus upon the flexible exchange rates, a local strong currency to be used as a store of savings and a strong regulatory environment where the enforcement of policy, procedure and contracts (Bordo, 2000) cited by Meron, (2016).

### **2.3.3. Banking and insurance sectors openness and repression**

Banking and Insurance sectors liberalization is the capital openness and smooth regulation in the domestic financial markets. There are multi-lateral views in this regard. Some studies stated that financial sector openness helps to build up the strong financial system and to achieve higher level of growth. On the other hand it may suffer a lot of risk and can increase macroeconomic volatility in an economy of countries.

The results of Banking and Insurance sector liberalization in low and middle income countries are quite different. It has helped to achieve high growth rates in middle income countries

whereas the result is opposite in case of low income countries. The main reason for this variation is low income countries do not have developed financial systems to allow them for a significant increase in influence and financial flows (Beck, 2002).

The term banking and insurance sector repression, created by McKinnon, (1973) and Shaw (1973), refers that a state is highly regulate banking and insurance sector through various measures such as interest rate ceilings on bank deposits and loans, compulsory credit allocation, heavy reserve requirements, high proportion of damp premium of insurances and various types of prohibition on international financial transactions are common features of a repressed financial system (McKinnon, 1991).

#### **2.3.4. Financial deepening and widening**

Financial deepening refers to increasing provision of financial services. It can refer both a wide choice of services and better access for different socioeconomic groups. It is measured as a ratio of financial assets or broader monetary aggregates to the gross domestic product (GDP), refers to the greater financial resource mobilization in the formal financial sector and make easy liquidity constraints of banks and enhancement of funds available to finance projects. High financial deepening creates a favorable environment for expansion of resource distribution in the economy it can lead to an accelerated economic growth. Financial deepening helps to the introduction and intensive use of new financial products (Akinboade, 2000).

According to Shrestha, (2005) financial widening refers to the increasing use of money in exchanging goods and services. If entry barriers are removed, banks and other financial institutions grow in number and size of activity and the financial services become easily available to a larger population. Main indicators of financial sector widening include extended banking services, positive real deposit interest rate, increased credit availability and increased inflow of foreign capital. When the banking services get extended to a larger population, increased volume of bank transactions reflected in bank deposits and credits. When there is a real positive deposit interest rate, the savings will increase. Credit is one of the main components of bank transactions. Hence, increased credit availability is obviously reflected in the volume of bank transactions. Likewise, since foreign capital inflow normally comes through the banking channel, it is also captured in the volume of bank transaction.

### **2.3.5. Financial liberalization**

Financial liberalization means elimination of direct credits and high reserve requirements, allowing interest rates be determined by the market forces rather than by regulation. In a broader sense, it includes a wide set of extra measures such as the simplification of portfolio restrictions on banks and insurances, changes in the ownership of banks and insurances, developed competition among banks and insurances, integration of domestic firms to international markets and changes in the monetary policy (Tigabu, 2009).

The institutional context of the monetary policy implementation is independence from the central bank and switch from direct instruments of monetary control such as bank by bank credit ceilings, interest rate controls, obligatory liquidity ratios, credit auctions, reserve requirements, public sector deposits, primary and secondary market sale of bills, foreign exchange trades and outright sales and purchases.

The main idea of financial liberalization is stimulate the growth of money markets and instruments with a view to Apply flexible and market oriented policy (Ucer: 1997).

## **2.4. Gaps in Previous Literatures**

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.

The result of Hailay, (2015) cited by Neway, (2017) is insignificant in both long run and short run by using the same independent variable. Dejene, (2016) cited by Neway, (2017) obtained negative relationship result by using only 24 years data after 1991. The study of Meron, (2016) used broad money and private sector credit as independent variable and the result shows as economic growth have a significant positive effect on financial development.

Fozia, (2016) customized commercial banks-central bank asset ratio as independent variable and approved that economic growth of Ethiopia is significantly influenced by financial sector development. Neway, (2017) used the ratio of total domestic credit to GDP, private credit to

GDP ratio, government expenditure to GDP ratio, broad money to GDP ratio, consumer price index and trade openness as independent variable and obtain long run relationship between dependent variable and independent variables and his finding disclosed positive relation in long run. The study of Tekilu, et.al (2018) used bank credit, human capital, inflation, openness to trade, government expenditure and gross investment as independent variable. This study customized the linkage of financial sector development indicators (independent variables) with dependent variable (GDP) in stratified form in sectors (Agriculture, Industry & Service) rather than aggregate output. The outcome indicates that financial sector development had a less significant positive impact on agricultural and service sector in long run and insignificant in short run and it has a positive and significant impact on industrial and aggregate output growth both in the short run and long run.

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.

As far as the researcher's knowledge, although many previous studies done on topics of nexus between financial sector development and economic growth, entire studies customized banking sector development only; ignored insurance and other financial institutions. This is the major research gaps identified by the researcher.

## 2.5. Conceptual Framework

The conceptual framework shown in Figure 1 indicates that, economic growth is dependent on the banking and insurance sectors development. From the theoretical and empirical literature reviews, the following conceptual framework of the study was developed by the researcher.

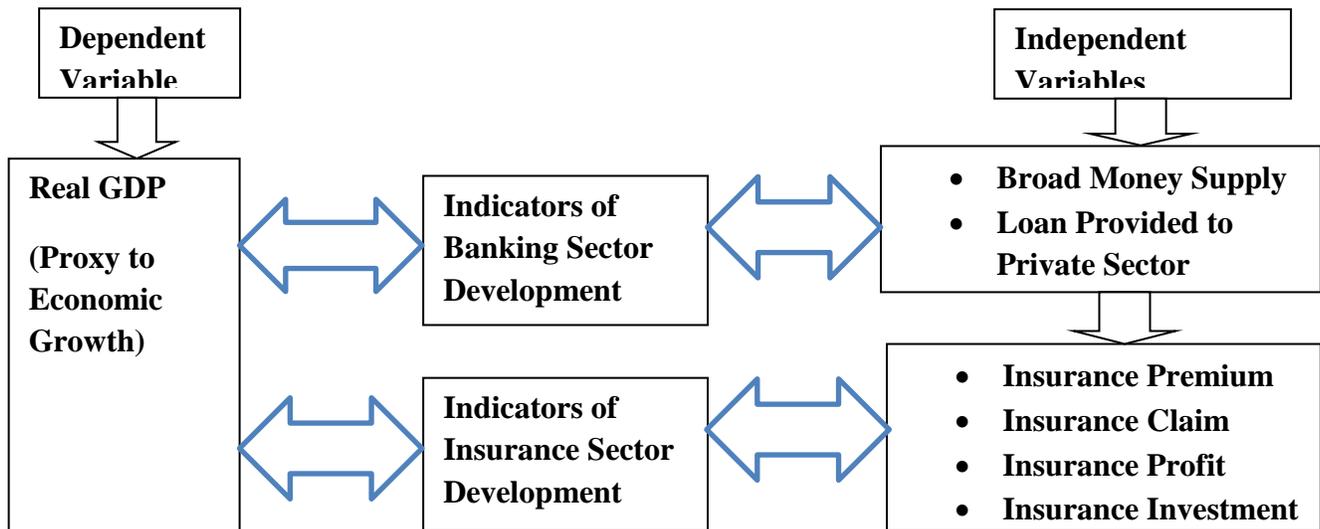


Figure 1 The conceptual framework of the study

Source: Compiled by the researcher

## **CHAPTER THREE: RESEARCH METHODOLOGY**

This chapter deals with research methodology used to carry out the research. The chapter was organized in five sub sections. Research method, data source, type and methods of collection, method of data analysis, definition of variables and hypothesis development were discussed in this chapter.

### **3.1. Research Design**

According to Nachmias, (1993) definition, research design is a program that guides to the researcher in the process of data collecting, analyzing and interpreting. There are varies types of research designs depending on the purpose and/or objectives of the research. The type of research design depends on objectives that the researcher's want to achieve (Admas, J. T, Robert, R., & White, D. 2007). This study was designed to examine the assessments of banking and insurance sectors development and its effect on economic growth of Ethiopia. In order to accomplish this study the researcher was used a longitudinal research design with quantitative research approach to determine the relationship between dependent variable and independent variables. Longitudinal research design involves repeated observations of the same variables. The study was explained the results by comparing with empirical evidences. Hypotheses was formulated and tested on the basis of empirical reviews on similar subject matter.

### **3.2. Data Source, Type and Methods of Collection**

Secondary data from National Bank of Ethiopia, Ethiopian Insurance Company and World Bank data base was used in this study. The study was customized annual multivariate time series data from 1980– 2018 to realize a stated objective. The period is specified based on considering availability of data and reasonable time period to capture the real figure of studying issue. The researcher was employed STATA version 14 statistical software to analyze the data.

### **3.3. Methods of Data Analysis**

This study was developed based on descriptive analysis and empirical vector error correction model result analysis. It provides the descriptive analysis of the multivariate time serious data and variables for the study of collaboration analysis between dependent and independent variables, deals the results of the data analysis that constitutes the findings of the study.

### 3.3.1. Descriptive statistics

Descriptive data analysis is vital in determining the statistical properties of the model in order to select the proper functional form of the estimated model (Chrstina, 2013). The descriptive statistics explores and presents an overview of all variables used in the analysis. In this section the minimum, maximum, mean, standard deviation of the variables are produced for the variables under study. Also a graphical and tabular analysis of the variables used was conducted to capture their movement over time.

### 3.3.2. Econometrics model specification

Regarding model specification, there are two broad classes of studies. The first approach of study is the neo-classical model which was developed by (Solow, 1956) and (Swan, 1956).It incorporates financial sector development as one determinant of growth in addition to the other factors such as population growth, initial capital, initial lagged GDP ratio and a measure of human capital. Whereas the main strength of such models is its orthodoxy with theoretical foundation, its inability to include a broad set of other basic variables such as government expenditure, inflation and trade openness make it more likely that the contribution of financial sector to economic growth will be biased. The second approach of the study is simply combine some measures of financial sector development with a broad set of conditioning variables in the economic growth equation (Yabibal, (2007) cited by Fozia, (2016).

To assess banking and insurance sector development and examine its effect on economic growth, this study will seek to empirically explore the relationship between banking and insurance sector development and economic growth of Ethiopia using the first approach, Neo-Classical Growth Model.

The starting point of an empirical study of growth determinants in any given country is the growth model based on Cob-Douglas production function:

$$Y=Af(L,K) \text{-----}(2.1)$$

Where: Y is real GDP, A is the index of technological progress assume in Ethiopia, L is total labor force and K is gross capital.

In equation (1), “K” is substituted by “I” (Investment) due to the fact that capital stock data are usually inaccessible for under developed and developing countries like Ethiopia. In connection with this problem, “I” is used as a proxy for “K” and is given as:

$$Y=f(L, I) \text{-----}(2.2)$$

The Neo-Classical growth model which states that  $S=I$  (where  $S$  is saving), is modified in case of Ethiopia because of the existence of a huge gap between domestic saving and investment in Ethiopia. Hence, investment contains both saved fund ( $S$ ) that comes from bank deposit ( $D$ ) and borrowed fund ( $BF$ ) that comes from domestic bank credit ( $C$ ) and external resource like foreign aid and foreign debt. Then:

$$Y=f(L, S, BF) \text{ ----- (2.3)}$$

Since the aim of this study was to assess banking and insurance sector development and its effect on economic growth, this study was employ broad money supply to real GDP ratio and loan provided to private sector to real GDP ratio were used as an indicators of banking sector development and insurance premium to real GDP ratio, insurance claim to real GDP ratio, insurance profit to real GDP ratio and insurance investment to real GDP ratio were used as an indicator of insurance sector development. Therefore, the model for this study was re-specified as follows with some modification which is different from previous one based on variables used in this study.

$$Y_t=f(RBM_t1, RPL_t2, RPRM_t3, RCLM_t4, RPRF_t5, RINV_t6) \text{ ----- (2.4)}$$

Finally, the above equations were specified as follows:

$$RGDP_t = \beta_0 + \beta_1RBM_t + \beta_2RPL_t + \beta_3RPRM_t + \beta_4RCLM_t + \beta_5RPRF_t + \beta_6RINV_t + \mu_t \text{ ----- (2.6)}$$

Where:  $R$  = GDP ratio

$RGDP$  = Real Gross Domestic Product

$RBM$  = Broad Money Supply to GDP ratio

$RPL$  = Loan Provided to Private Sector to GDP ratio

$RPRM$  = Insurance Premium to GDP ratio

$RCLM$  = Insurance Claim to GDP ratio

$RPRF$  = Insurance Profit to GDP ratio

$RINV$  = Insurance Investment to GDP ratio

$\mu_t$  = Error term

### **3.3.2.1. 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 ergogeneity 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).

### **3.3.3. 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  $R^2$  was used to measure the strength of explanatory variables to explain the variations in the explained variables.

### 3.3.3.1. Unit root test

The use of existing unit root test in statistics is to investigate whether a time series data has got a unit root or not. During investigation if a time series 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 series data have got a unit root, it has to be dealt first before during a long run phenomenon of the time series data (Neway, 2017).The results of the unit root test leads to the test for the existence of a stable long-run relationship.

Mainly there are two types of models which have been frequently used to characterize non-stationarity test in a time series data investigation:

1. The random walk model with draft

$$Y_t = \mu + Y_{t-1} + \mu_t \text{-----} (2.6)$$

2. The Deterministic trend process

$$y_t = \alpha + \beta t + \mu_t \text{-----} (2.7)$$

The first case is known as stochastic non-stationarity. If  $\Delta y_t = y_t - y_{t-1}$  and  $L y_t = y_{t-1}$

Therefore,  $(1-L)y_t = y_t - L y_t = y_t - y_{t-1}$

If substitute  $y_{t-1}$  from equation (1) get  $\Delta y_t = \mu + \mu_t$

This process is known as differencing. A stochastic process is said to be integrated of order  $d$ ,  $I(d)$ , if it can be transformed to a stationary process by differencing ( $d$ ).The second case is known as deterministic non-stationarity and what it required is detrending (Harris, 1995)cited by Roman (2012). It should be use the popular test in order to test for the existence of a unit root in time series. It is Dickey-Fuller test. Dickey and Fuller (1976) tested the null hypothesis that

$\phi = 1$  in  $y_t = \phi y_{t-1} + \mu_t$  against the one sided alternative  $\phi < 1$ .

Therefore,

$H_0$ : - Series contains a unit root &

$H_1$ :- Series is stationary.

$$\Delta y_t = \psi y_{t-1} + \mu_t$$

Therefore, a test of  $\phi = 1$  is equivalent to a test of  $\psi = 0$  since  $\phi - 1 = \psi$

On the other hand the Augmented Dickey Fuller Test (ADF) can be written as

$$\Delta y_t = \psi y_t - 1 + \sum_{i=1}^p \alpha_i \Delta y_t - I + \mu t \text{-----} (2.8)$$

Where:  $y_t$  is variable of interest,  $t$  is time trend and  $p$  is lag length

The ADF test can be biased towards accepting the null hypothesis of unit root in the series, if the series exhibits significant structural breaks Harris, (1995). Therefore, the data should be first tested for the existence of structural breaks.

Differencing may lead to a considerable loss of long run properties of the data. Therefore, it is appropriate to develop a statistical tool which is suited for capturing long-run relations between non-stationary variables in a right manner. Engle and Granger, (1987) developed the theory of co-integration relation so as to provide a solution for this problem.

The purpose of co-integration is to eliminate stationarity of the variables and confirm whether there exists a long-run equilibrium relationship. The  $m \times 1$  series  $Y_t$  is co-integrated if  $Y_t$  is  $I(1)$  yet there exists  $\beta$ ,  $m \times r$  of rank  $r$ , such that  $ZL = \beta'YL$  is  $I(0)$ . The  $r$  vectors are called the co-integration vectors.

Although individual series are non-stationary, i.e,  $I(1)$  series, if there exists a linear combination of these  $I(1)$  series in the regression equation and is non-stationary, then the regression is not a spurious regression. The economic interpretation of co-integration is that if two or more series are linked to form an equilibrium relationship in the long run, then though the series becomes non stationary they will move closely together overtime and the difference among them becomes stationary Harris, (1995).

### 3.3.3.2. 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 stationarity 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.

After the unit root test, it was found out that the variables were either  $I(0)$  or  $I(1)$ . The co-integration test under Johansen, (1988) maximum likelihood co-integration procedure was followed to determine whether variables enter into a short run relationship, long run relationship or no any association.

The researcher will be used the Johansen approaches due to three major limitations exist in Engel-Granger (EG) approach:

1. The residual based test tends to lack power because it does not exploit all the available information about the dynamic relationship of the variables.
2. There is no unique vector when we have more than two variables in an equation.
3. It is possible to have more than one co-integration relationship between the variables (Alemayehu et al., 2011).

The existence of co-integration is confirmed if the number of co-integrating vectors is greater than zero. The existence of co-integration implies the existence of a long run relationship.

### **3.3.3.3. 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 stationarity 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.

#### **3.3.3.4. Autocorrelation test**

The assumption of classical linear regression model (CLRM) assumes that successive values of the random variable “U” is temporally independent and that the value which “U” assumes in any one period is independent from the value it assumes in any previous period. This implies that the covariance of  $U_i$  and  $U_j$  equals zero. If this assumption is not satisfied, then the value of “U” in any particular period is correlated with its own preceding value. This is known as autocorrelation or serial correlation of the random variable “U” (Wooldridge, 2000). Where the random term is autocorrelated, the parameter estimates are still statistically unbiased but the variances of the parameter estimates are likely to be larger or the variance of the random term may be seriously underestimated or the predictions based on the parameter estimates will be inefficient in the sense that the variance is large. In such cases chi-squared may be over-estimated. In case we have lagged dependent variable to the right hand side, estimators are biased and inconsistent. There was thus every need to test for serial correlation in the residuals.

The durbin-watson statistics test is used to check correlation between the errors in different time periods. The rule of thumb reviled that, if  $DW \approx 2$  there is no serial correlation.  $DW < 2$  implies a positive serial correlation and  $DW > 2$  implies presence of a negative serial correlation.

#### **3.3.3.5. Normality test**

The model assumes that the random variable “U” has a normal distribution. This means that small values of U’s have a higher probability to be observed than large values. This assumption is necessary for conducting statistical tests of significance of the parameter estimates and for constructing confidence intervals. If the assumption of normality is violated, the estimates of parameters are still unbiased. However, the statistical reliability by the classical tests (t-statistic & F-statistic) of significance of the parameter estimates cannot be assessed, because these tests are based on the assumption of normal distribution of the u’s (Gujarati,1995).

#### **3.3.3.6. Stability Test**

The stability test is used to check the variables are stable or not. The researcher was done this test to check the variables are stable or not.

### **3.4. Definition and Hypothesis of Variables**

#### **3.4.1. Definition of variables**

According to the research objective and research questions, this study has been set the variables used in this study and their measurements are largely adopted from existing literature. The dependent variable of this study was real GDP and independent variables were broad money supply to GDP ratio, loan provided to private sector to GDP ratio, insurance premium to GDP ratio, insurance claim to GDP ratio, insurance profit to GDP ratio and insurance investment to GDP ratio. The dependent variable is proxy and indicators of economic growth and the independent variables are proxy and indicators of banking and insurance sector development in Ethiopia.

#### **A. Dependent variable**

Dependent variable is the outcomes or results based on influence of the independent variables. It depends on the independent variables. The other names of dependent variable are explained variable, predicted variable, target variable, endogenous variable and regressed variable (Gujarati, 2004 and Brook, 2008).

#### **Real GDP**

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.

#### **B. Independent variables**

An independent variable is defined as the variable that is changed or controlled in a scientific research. It represents the cause or reason of an outcome. They are the experimenter changes to test the dependent variable. A change in independent variable directly causes to change the dependent variable. The other names of independent variable are explanatory variable, predictor variable, regressor variable and exogenous variable (Gujarati, 2004 and Brook, 2008).

Among numerous potential indicators of economic growth identified in previous related studies and the researchers practical assessment in the industry; bank deposit, domestic bank credit, broad money, foreign currency mobilization and bank profit are independent variables for measuring the effects of banking sector development and insurance premium, insurance profit and insurance claim are independent variable for measuring the effect of insurance sector development on economic growth in this study.

### **Broad Money Supply**

Basically, broad money can be determined by net foreign assets and domestic credit. A higher M3/GDP ratio suggests that a larger financial sector and therefore greater financial intermediary development. The ratio of broad money (M3) is a typical measure of financial sector development. The broad money supply (M3) is designed to show the real size of the banking sector of a growing economy. M3 comprises of M2 and foreign currency deposits of the private sector, nonfinancial public enterprises and nonbank financial institutions with commercial banks. M3 is sometimes referred to as liquid liabilities. The ratio is expected to increase over time if the banking sector develops faster than the real sector on the one hand and decrease if the banking sector develops slower than the real sector, on the other hand (Chrstina, 2013).

Broad money consists of both narrow money and quasi-money, where narrow money contains currency outside the bank and net demand deposits and quasi-money includes both saving and time deposits. It is the broadest measure of financial development and it measures the depth of the financial system. It also indicates the degree of monetization with respect to the real economy (NBE, 2018).

### **Loan Provided to Private Sector**

Bank credit is one of the most widely used measurement of the size of the banking sector development as it captures the financial resources extended to the private sector by the banking institutions in the economy through loans, purchase of non-equity securities and trade credit and other receivables that establish a claim for repayment. According to Timsina, (2014), bank credit extended to the private and public sector and economic growth has a long run positive relationship. This finding is also supported by the work of Ogege and Shiro, (2012) who examined the impact of depositing money in banks on economic growth in Nigeria.

In Ethiopia bank credit to the private sector became a major determinant for the expansion of the monetary base. For example the ratio of private credit as percent of GDP in 2004 was 19.1 the

second highest in East Africa (Kiyota, et al. 2007). However, this does not necessarily mean that intermediation is stronger because Ethiopia's GDP is relatively low.

### **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. The loadings to the pure premiums are policy acquisition cost, premium collection cost, claims handling cost, administration and general expenses. The sum of the pure premium and the loading for claim cost is called risk premium. The sum of the pure premium and the all loading constitutes called insurance office premium or total insurance premium (OECD, 1999). For the purpose of this study was considered total insurance premium as explanatory variable.

### **Insurance Claim**

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 (Kahase, 2018).

### **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 (Kahase, 2018).

### **Insurance Investment**

Insurance companies mobilize financial resources in the form of premiums on insurance policies and investing in income earning assets to maximize profits. It is an investment of money with the objectives of earning 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 earnings are critical to insurance companies to balance underwriting losses for property and causality products and to help build policy cash value for life products. Funds in excess of minimum capitalization and reserve requirements can be invested and earning by insurance companies from dividend, on its equity portfolios, rent from

real estate and other property it's owns interest in bank deposits and from its bond holdings (Aderaw, 2012). The insurance investment on profitable ventures is used as explanatory variable.

### C. Hypothesis of variables

Table 1 Description of variables and their expected relationship

	<b>Variables</b>	<b>Proxy</b>	<b>Notation</b>	<b>Expected Result</b>
<b>Dependent Variable</b>	Real GDP	Economic Growth	RGDP	
<b>Independent Variables</b>	Broad money supply/RGDP	Availability of finance	RBM	Significant and Positive
	Loan provided to private sector/RGDP	Availability of credit facility	RPL	Significant and Positive
	Insurance premium/RGDP	Risk Transfer (Risk Management)	RPRM	Significant and Positive
	Insurance claim/RGDP	Indemnification of insured person	RCLM	Significant and Positive
	Insurance profit/RGDP	Return of Insurance Business	RPRF	Significant and Positive
	Insurance investment /RGDP	Institutional Investors	RINV	Significant and Positive

Source: Compiled by the researcher

## **CHAPTER FOUR: RESULT AND DISCUSSIONS**

This chapter analyses the relationship between banking and insurance sector development and economic growth in Ethiopia using annual data from 1980-2018. It contains both descriptive and econometric analysis. Under descriptive part discussed current status and overall performances of banking and insurance sectors and the trend and growth status of the variables are described. 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.

### **4.1. Results of Descriptive Statistics**

#### **4.1.1. Current status and performance of banking sector in Ethiopia**

The Ethiopian banking sector has remained safe, sound, well capitalized and profitable. As a result, commercial banks opened 500 new branches in 2017/18 alone which increased the total number of branches to 4,757 from 4,257 a year ago. About 35.3 percent of the total bank branches were located in Addis Ababa. Among this branch distribution 1,482 are public owned and the remaining 3,275 are distributed for sixteen private banks. The branch shares of public banks are 31.2 percent and the remaining 68.8 percent is the share of private banks. Total capital of the banking industry increased by 10 percent and reached birr 85.8 billion at the end of June 2018. From this figure public banks hold 60.1 percent and the remain 39.9 percent is share of private banks.

Total resources mobilized by the banking system in the form of deposit, borrowing and loan collection reached to birr 298.2 billion at the end of 2017/18. Aided by remarkable branch expansion, deposit liabilities of the banking system raised to birr 730.3 billion, reflecting 28.4 percent annual growth rate. Banks deposits grew by 30.4 percent followed by demand deposits (27.6 percent) and time deposits (21.7 percent) from 2017. Of the total deposits, saving deposits accounted 52.4 percent, demand deposits 37.1 percent and time deposit 10.5 percent. Commercial bank of Ethiopia alone mobilized 62 percent of the total deposit in 2018.

Raising funds through borrowing by the banking industry was not an important source of resource mobilization in Ethiopia as most of the banks were sufficiently liquid due to increased

deposit mobilization and collection of loans. However, total outstanding borrowing at the end of the fiscal year 2018 was birr 65 billion up from birr 39.8 billion a year earlier due to borrowing by Development Bank of Ethiopia. Of the total borrowing, domestic sources accounted for 89.5 percent and foreign sources 10.5 percent.

Total outstanding credit of the banking system including to the central government reached to birr 449 billion at the end of June 2018. Excluding central government, credit to industry accounted for 39.3 percent followed by international trade (19.8 percent), domestic trade (11.4 percent), housing and construction (11percent), others sectors (5.8 percent) and agriculture (4.9 percent). The share of private sector in outstanding credit was birr 284.5 billion (63.4 percent) reflecting a 23 percent year-on- year growth (NBE, 2018).

Table 2 Current status and performance of banking sector in Ethiopia as at June 30, 2018 (in billions of birr)

<b>Bank Type</b>	<b>No of branches</b>	<b>Capital</b>	<b>Deposit</b>	<b>Outstanding Credit</b>
Public banks	1,482 (31.2%)	51.6 (60.1%)	452.8 (62%)	241.6 (53.8%)
Private banks	3,275 (68.8%)	34.2 (39.9%)	277.5 (38%)	207.4 (46.2%)
<b>Total</b>	<b>4,757</b>	<b>85.8</b>	<b>730.3</b>	<b>449</b>

Source: Computed by the researcher

The stated figure shows that the banking sector is highly dominated by the two public owned banks.

#### **4.1.2. Current status and performance of insurance sector in Ethiopia**

Insurance companies of Ethiopia have scaled up their services by expanding their network and product diversification. Capital goods finance companies have also stepped up their operations showing visible signs of improvement. The number of insurance companies is 17; of which the one insurance company is state owned and the remaining 16 insurance companies are private owned companies and nine of them are composite insurance (transacting both general insurance and long term insurance). Their branches increased to 532 following the opening of 40 new branches in 2017/18 alone. Moreover, over 1,950 insurance sales agents, 53 insurance brokers, 97 loss assessors and two surveyors are operating in the market. There are two reinsurance companies in Ethiopia; these are Africa Re-insurance and Ethio Re-insurance. About 53.6 percent of insurance branches were situated in Addis Ababa and 84 percent of the total branches are private owned. Total capital of insurance companies reached to birr 5.5 billion; of

which the share of private insurance companies is 72.1 percent and that of the public insurance company was 27.9 percent.

The insurance industry can collect birr 8.6 billion premium and pay birr 5.5 billion in 2018. In this year they can generate 1.5 billion profit and they made birr 2.9 billion investments at the end of June, 2018. Of total premium EIC collects birr 2.98 billion and of total amount of claim payment by the industry, EIC shares birr 1.16 billion of claim payment.

Table 3 Current status and performance of insurance sector in Ethiopia as at June 30, 2018 (in billions of birr)

<b>Insurance Type</b>	<b>No of branches</b>	<b>Capital</b>	<b>Premium</b>	<b>Claim</b>
Public insurance	85 (16%)	1.53 (27.8%)	2.98 (34.7%)	1.16 (21%)
Private insurances	447 (84%)	3.97 (72.2%)	5.62 (65.3%)	4.34 (79%)
<b>Total</b>	<b>532</b>	<b>5.5</b>	<b>8.6</b>	<b>5.5</b>

Source: Computed by the researcher

According to table 3, the distribution and overall performance of insurance sector in the country is too less according to banking sector. It shows that it gives less concern and it didn't treat equally with bank. On other hand the domination of state own insurance is less and the private insurances dominate in number of branches as well as overall performance.

#### **4.1.3. Description of variables**

##### **4.1.3.1. Trends of real GDP and its growth in Ethiopia from 1980-2018**

Economic growth of Ethiopia shows consisted and little improvement until 2003. After 2002 it shows significant improvement and up rises consistently. Within this period there is government change in 1991 as well as economic reform in 1994. However, both events didn't create improvement on economic growth of the country. Moreover the improvement comes from the implementation of developmental state economic growth model in the country in 2002. After 2015 the growth is raised dramatically.

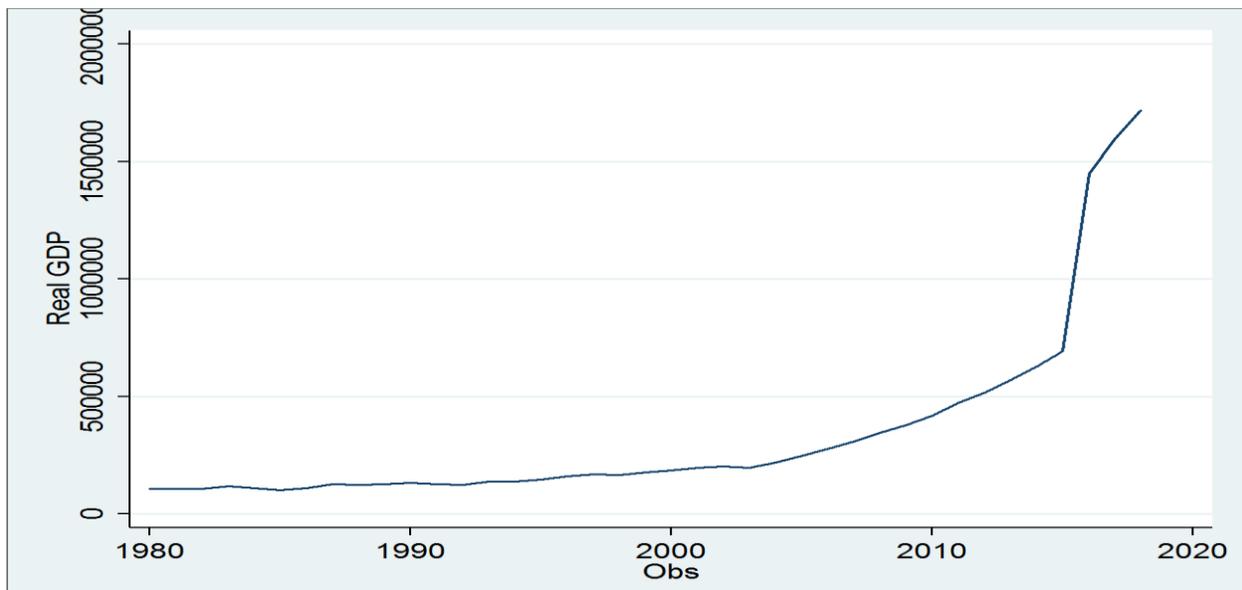


Figure 2 Trend of real GDP in Ethiopia from 1980-2018

Source: Model result

According to the data, the variance of the growth from 1980 to 2003 is dilatory, which rise from birr 108,023.09 million to birr 197,604.40 million. It increases only 83% within fourteen years. In these years the economic growth is stable. After 2003 it shows modest improvement constantly until 2015, it rises from birr 197,604.40 million to birr 692,221.86 million. However, binging from 2016 it shows dramatic growth. It rises to birr 1,717,794.51 million within three years.

#### 4.1.3.2. Trends of broad money supply and its growth in Ethiopia from 1980-2018

The trend of broad money supply in Ethiopia is run constantly until 2003. In this period the growth is very little. It can be stagnant in growth of broad money supply in Ethiopia. Within this period there is government change in 1991 as well as economic reform in 1994. However, both events didn't create improvement on growth of broad money supply of the country. Growth of the countries broad money supply is slightly improved from 2003 to 2009. Starting from 2010 the growth of broad money supply rises absolutely. It rises from birr 104,432.40 million to birr 740,572.90 million. It shows 609% growth within nine years. The dramatic growth of the broad money supply within this period comes from the countries five year growth and transformation plan (GTP I). In connection with this growth and transformation plan, highly increased government expenditure and stimulate every economic activities.

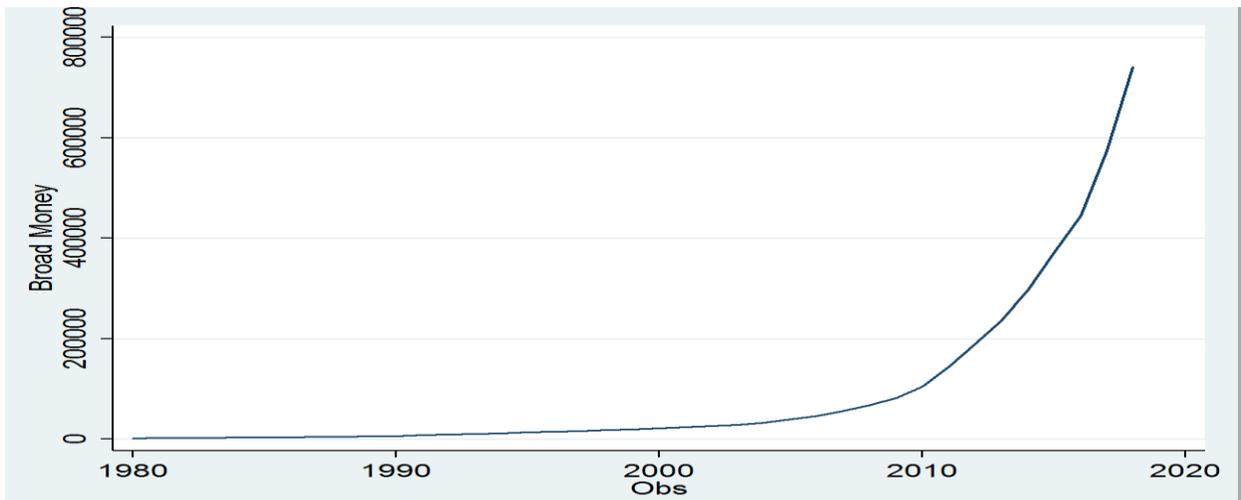


Figure 3 Trend of broad money supply in Ethiopia from 1980-2018

Source: Model result

#### 4.1.3.3. Trends of loan provided to private sector and its growth in Ethiopia from 1980-2018

The trend and growth rate of loan provided to private sector in Ethiopia is similar to broad money supply. It is stagnant and it shows very little growth until 1992. Within this period the growth rate is only 2%. After 1992 it shows little improvement on growth rate until 2010. The improvement comes from government change in 1991 and economic reform in 1994. Beginning from 2010 the growth rate of loans provided to private sector is high. The growth shows 602% growth within those nine years. This significant growth is the result of growth and transformation plane of 2010.

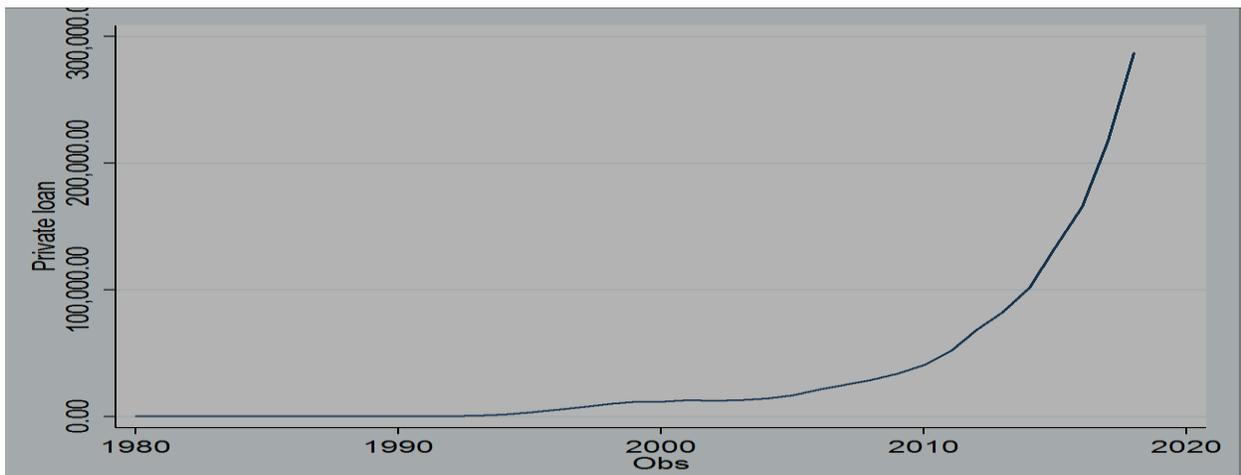


Figure 4 Trend of loan provided to private sector in Ethiopia from 1980-2018

Source: Model result

#### 4.1.3.4. Trends of Insurance premium and its growth in Ethiopia from 1980-2018

The trend and growth rate of insurance premium in Ethiopia is stagnant and no growth until 1992. In this period, within fifteen years the insurance premium grows from birr 96.6 million to birr 128.6 million. After 1992 it shows little improvement on growth rate until 2004. It is the effect of government change in 1992 and economic reform in 1994. The significant improvement in insurance premium starts from 2005, the growth rate is raised from birr 597.5 million to birr 8,574 million between 1995 and 2018. The growth shows 602% growth within those nine years. This significant growth is the result of growth and transformation plane of 2010.

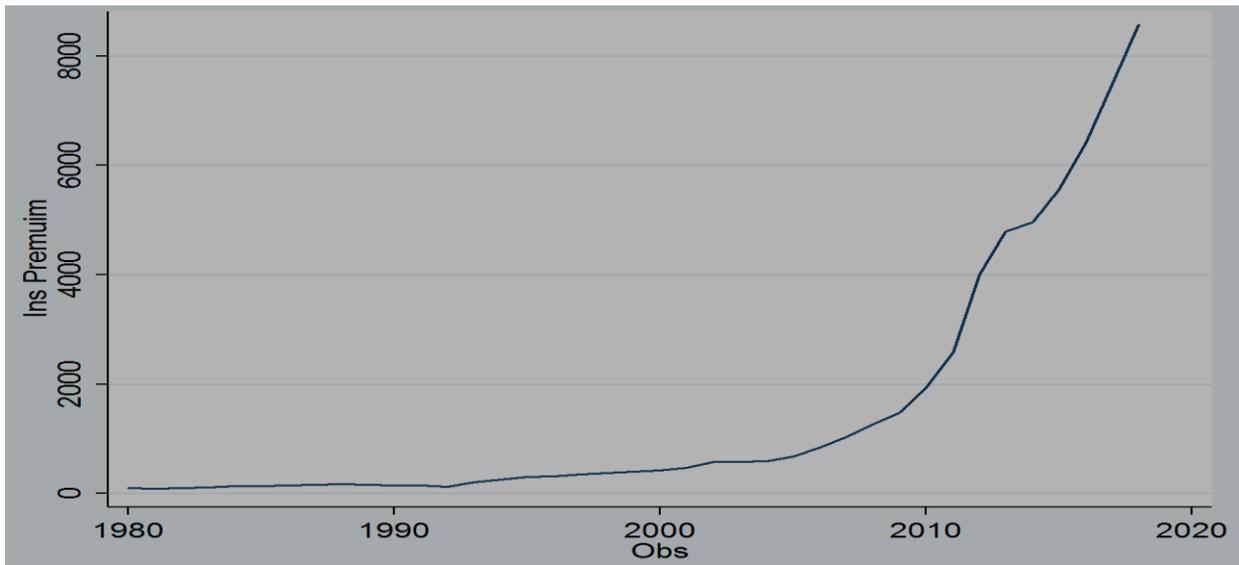


Figure 5 Trend of Insurance premium in Ethiopia from 1980-2018

Source: Model result

#### 4.1.3.5. Trends of Insurance claim and its growth in Ethiopia from 1980-2018

The trend and growth rate of insurance claim in Ethiopia shows little growth rate until 1996. In this period, within seventeen years the insurance claim grows from birr 40.8 million to birr 178.3 million. In 1997 the insurance claim radically raised to 446.9 in connection with occurring high amount of claim (birr 419.7 million) at Ethiopian Insurance Corporation. From 1997 to 2004 the growth rate is goes constantly with by little growth rate. The significant improvement in insurance claim starts from 2005, the growth is raised from birr 402.6 million to birr 5,536.1 million. The status of insurance claim highly rises within those nine years.

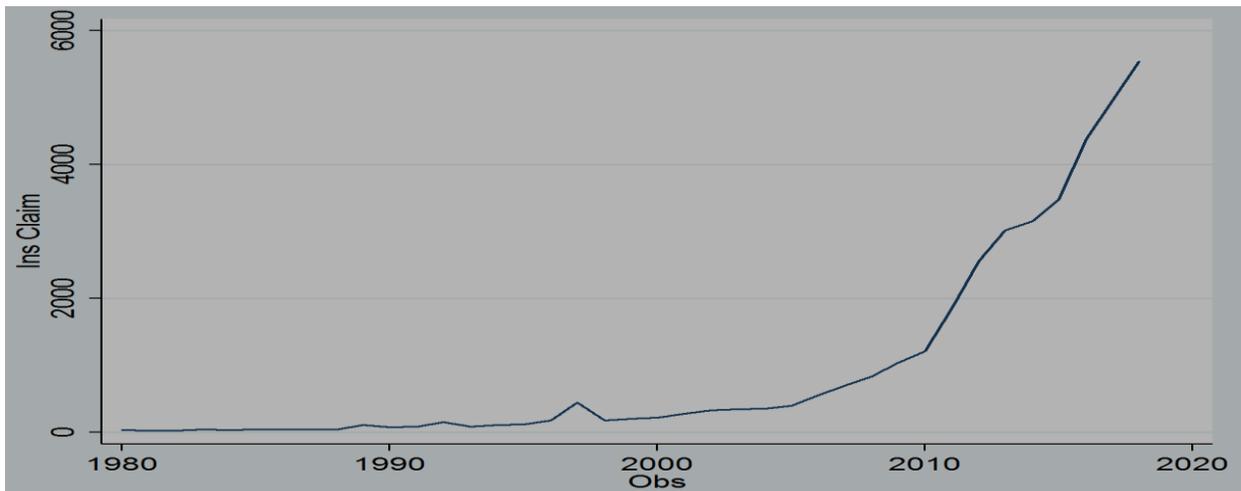


Figure 6 Trend of Insurance claim in Ethiopia from 1980-2018

Source: Model result

#### 4.1.3.6. Trends of Insurance profit and its growth in Ethiopia from 1980-2018

The trend and growth rate of insurance profit in Ethiopia shows ups and down from 1980 to 2004. In this period, within fifteen years the insurance premium grows from birr 30.2 million to birr 59.2 million. Although the profit becomes double, the profit amount and growth rate is very low. It shows basic improvement on growth rate after 2005. The growth improvement is the effect of economic reform in 1994 and the existence of private insurance in the industry. In this period from 2005 to 2018, the insurance profit growth rate is raised from birr 59.2 million to birr 1,453.7 million. It is fourteen times more than the base amount. This significant growth is connected with the country's growth and transformation plane of 2010.

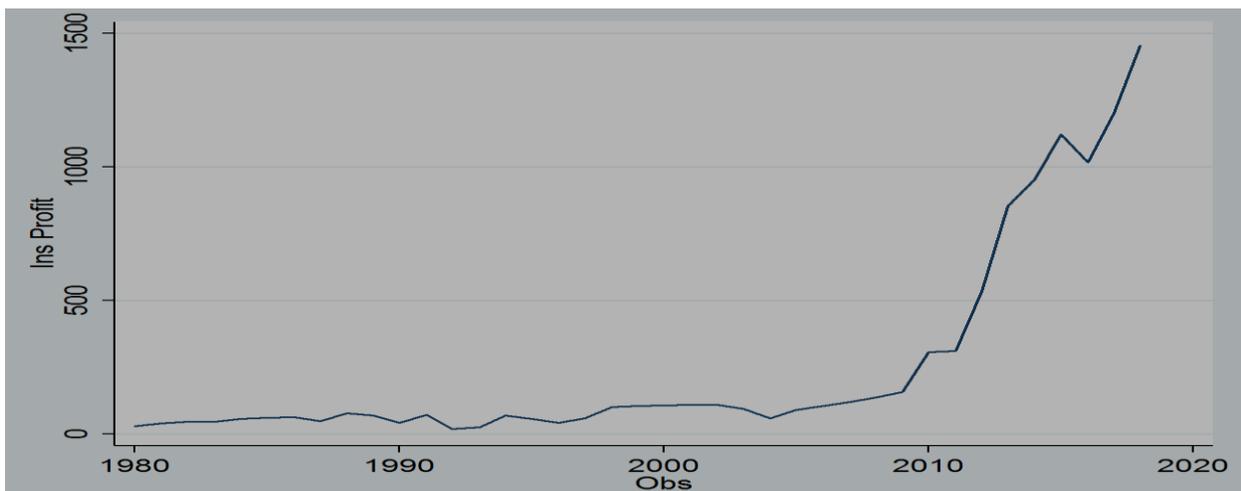


Figure 7 Trend of Insurance profit in Ethiopia from 1980-2018

Source: Model result

#### 4.1.3.7. Trends of Insurance investment and its growth in Ethiopia from 1980-2018

The trend and growth rate of insurance investment in Ethiopia show from the figure is almost no growth rate and constant from 1980 to 1994. The growth rate becomes better and shows continues growth, even if the is some up and downs from 1995 to 2007. In this period, within thirteen years the insurance investment grows from birr 25.1 million to birr 223.4million. From 2008 to 2014 the growth rate is goes constantly with by significant growth rate. Beginning from 2015 to 2018 is a period of dramatic insurance investment period with constantly constant growth rate. In this period, the growth is raised from birr 799 million to birr 2,883.4 million.

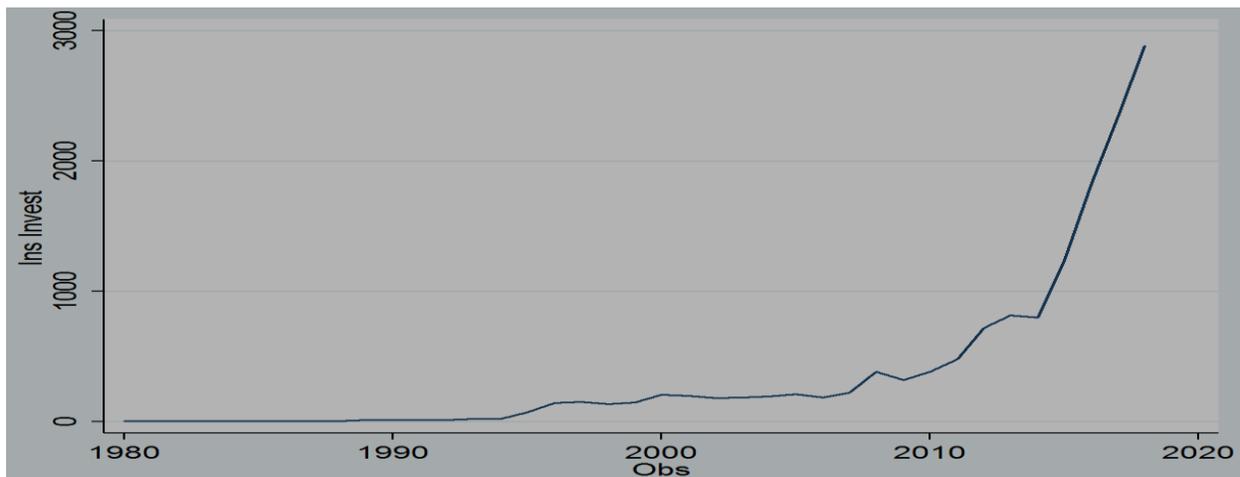


Figure 8 Trend of Insurance investment in Ethiopia from 1980-2018

Source: Model result

#### 4.1.4. Description of variables mean, standard deviation, minimum and maximum

Within the period of 39 years between 1980 and 2018 Ethiopia's real GDP average was birr 340.2 billion per year; where birr 101.8 billion and birr 1.7 trillion was the minimum and maximum real GDP of the country. The maximum real GDP recorded was made in 2018 and the minimum was in 1985. The year 1985 means the year of savor drought in Ethiopia. That why the country's real GDP was highly diminished.

The maximum broad money supply was registered as birr 740.6 billion in 2018 and the minimum was birr 2.1 billion in 1980; within these 39 years the average broad money supply was birr 94.9 billion per year. In Ethiopia the average loan provided to private sector within the period 1980 and 2018 was birr 35.7 billion; where, the minimum loan provision to private sector was appear in 1981 which is birr 465 billion and the maximum was occur in 2018 which is birr 287 billion.

In Ethiopia between 1980 and 2018 the maximum insurance premium was birr 8.6 billion which was registered in the year 2018 and the minimum was birr 93.6million it recorded in 1981. Within these 39 years the average insurance claim was 958.8 million per year. On average Ethiopian insurance companies generate birr 958.8 billion profit per year; within these 39 years the insurance industry recorded maximum profit of birr 1.5 billion and minimum of 20 million, it records in 2018 and 1992 respectively. The Ethiopian insurance companies invest birr 374.4 million in average per year from 1980 to 2018. The maximum and minimum insurance investment in Ethiopia was birr 2.9 billion and 5 million respectively; it records in the year 2018 and 1886 respectively.

Table 4 Summary of descriptive statistics of model

<b>Variable</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Minimum</b>	<b>Maximum</b>
Real GDP	340,195.5	397567	101,802.60	1,717,795
Broad Money Supply	94,874.37	170022	2,108.80	740,572.9
Loan to Private Sector	35,716.39	64115.04	465.00	287,005.7
Insurance premium	1,492.961	2278.996	93.638	8,574.00
Insurance Claim	958.8215	1494.416	30.159	5,536.16
Insurance Profit	256.5009	383.8479	20.058	1,453.675
Insurance Investment	374.4393	650.4967	5.062	2,882.362

Source: Model result

## **4.2. Econometrics Model Results**

### **4.2.1. 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.

The unit root test result is shown in the following table. Except RGDP all variables are in the form of real GDP ratio.

Table 5 ADF Unit root test results

<b>Variables</b>	<b>Difference level</b>	<b>Test statistics</b>	<b>5% critical value</b>	<b>p-value</b>	<b>Coefficient of L1</b>	<b>Result</b>
RGDP	1st D	-5.515	-3.552	0.0000	-.9415235	Stationary
RBM	1st D	-6.593	-3.552	0.0000	-1.14167	Stationary
RPL	1st D	-7.177	-3.552	0.0000	-1.233539	Stationary
RPRM	1st D	-5.143	-4.270	0.0001	-.8754104	Stationary
RCLM	1st D	-6.444	-3.552	0.0000	-1.098288	Stationary
RPRF	1st D	-6.503	-3.552	0.0000	-1.108686	Stationary
RINV	1st D	-8.015	-3.552	0.0000	-1.315107	Stationary

Source: Model result

R = Represents real for real GDP and real GDP ratio for other variables.

D = Represents Difference level.

#### **4.2.2. Determination of the lag length**

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 6 Lag selection for co-integration model

Sample: 1983 – 2018					Number of observation: 36			
Lag	LL	LR	Df	P	PFE	AIC	HQIC	SBIC
0	736.008				6.1	-40.5	-40.393	-40.19
1	849.48	226.95	49	0.000	1.8*	-44.08	-43.222	-41.619*
2	922.06	145.17*	49	0.000	6.7	-5.39*	-43.78*	-40.77

Source: Model result

\* indicates lag order selected by the criterion

### 4.2.3. Co-integration test

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 numbers of co-integrating vectors are determined with the trace statistics: the trace statistics and the maximum rank. 'r', we proceeded sequentially from 'r = 0' to 'r = k-1' until we fail to reject, where k is the number of endogenous variables. The trace statistic tests the null hypothesis of 'r' co-integrating relations against the alternative of 'k' co-integrating relations, for r = 0, 1... K-1. The result of Johansen Co-integration test presented in the Tables below.

Table 7 Johansen Tests for Co-integration

Trend: constant		Number of obs = 36
Sample: 1983 - 2018		lags = 2
Maximum rank	Trace Statistic	5% critical value
0	192.74	124.24
1	127.45	94.15
2	74.31	68.52
3	42.55*	47.21
4	13.37	29.68

Source: Model result

\* denotes rejection of the null hypothesis at 5% significance level.

Ho: There is co-integration (long run association) between variables if the rank is out of zero.

The above table shows that maximum rank where trace statistic less than 5% critical value at first time is at third rank. It means that the explanatory variables have long run association with the explained variable. Therefore, the estimation was customized by long run model which is vector autoregressive (VECM) model. VEC model is used to estimate both long run and short run relationship between dependent variable and independent variables and the right and left model to estimate this study was vector error correction model.

#### 4.2.4. Causality analysis

According to Granger (1969) the idea of Granger causality is based on the principle that a cause cannot come after its effect. A test for causality is performed on variables of interest to detect the presence and direction of causality between pairs of variables. Following the VAR, causality test is made to identify the presence and direction of causality. In this section, it was employed the Pair-wise granger causality between real GDP and banking and insurance sector development indicators. The estimated F-statistics of the causality test is presented in table 4.7.

Table 8 Granger Causality Test Result

<b>Equation</b>	<b>Excluded</b>	<b>Prob &gt; chi2</b>
RGDP	RBM	0.000***
RGDP	RPL	0.654
RGDP	RPRM	0.000***
RGDP	RCLM	0.890
RGDP	RPRF	0.338
RGDP	RINV	0.033**
RGDP	ALL	0.000***
RBM	RGDP	0.003***
RPL	RGDP	0.002***
RPRM	RGDP	0.000***
RCLM	RGDP	0.133
RPRF	RGDP	0.249
INV	RGDP	0.001***
ALL	RGDP	0.000***

Source: Model result

NB: The causality criterion is 1% and 5% significant level of probability value

As per the result shown broad money supply to RGDP ratio, insurance premium to RGDP ratio and insurance investment does causes real GDP and entire variables jointly cause real GDP. On other hand real GDP does cause broad money supply to RGDP ratio, loan provided to private sector to RGDP ratio, insurance premium to RGDP ratio, insurance investment and real GDP does cause for overall development of banking and insurance sector. Therefore, we can conclude that banking and insurance sector and economic growth have bi-lateral causality. Both banking and insurance sector and economic growth are essential each other. The development of banking and insurance sector is essential and supplementary to economic growth and vice versa. This finding is supported by finding of Luintel and Khan, (1999); Calderón and Liu, (2003); Sanchez et al, (2011); Haile Kibret and Kassahun, (2011) Christina, (2013) and (Sime, 2016).

### **4.3. Long Run and Short Run Model Estimation Results**

After identifying the existence of long-run relationship among the relevant variables, the variables are estimated by vector error correction model estimator. The VECM has co-integration relations built into the specification so that it restricts the long run behavior of the endogenous variables to converge to their co-integrating relationships while allowing for short run adjustment dynamics (Harris, 1995). 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. According to VECM estimation result, co-integration equation (error correction term) is significant and its coefficient is negative; it means that overall explanatory variables which are broad money supply to RGDP ratio, loan provided to private sector to RGDP ratio, insurance premium to RGDP ratio, insurance claim to RGDP ratio, insurance profit to RGDP ratio and insurance investment to RGDP ratio and the explained variable which is real GDP (proxy to economic growth) have a long run association and they affect real GDP positively in the long run. The coefficient of error correction term indicates how quickly variables converge to equilibrium. It measures the adjustment of real GDP towards the long run steady path. Moreover, it should have negative sign a statically significant at standard significant level (i.e. 1% or 5% significant level).

In vector error correction model the signs of the coefficients are reversed; meaning that the coefficient's sign of co-integrated equation and other variables is interpreted inversely. Moreover, the co-integration term determined the long run association of exogenous variables

with endogenous variable and the results disclosed the short run association of the explanatory variables with explained variable.

The result displayed in the table below revealed that, co-integration equation is significant at 1 percent significant level and the sign of its coefficient is negative. It means the entire six explanatory variables jointly have positive association with real GDP in long run. The exogenous variables positively affect real GDP in long run. Holding other things remains constant; when one percent changes in broad money, loan provided to private sector, insurance premium, insurance claim, insurance profit and insurance investment, 43.8 percent change at the same direction in real GDP in long run. When an incident occurs in the system each year, about 43.8 percent of it will be adjusted towards its long run equilibrium. Therefore, banking and insurance sectors development has a vital role on economic growth in long run.

Table 9 Long Run and Short Run Model estimation Results

Sample: 1982 – 2018		Number of observation = 37		
Prob > F = 0.0000		Adj R-Squared = 0.9896		
<b>Variables</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>Z</b>	<b>P &gt;  z </b>
Ce1 at L1.	-.4384896	.1212294	3.62	0.000***
RBM	-.1715320	.194207	-8.83	0.000***
RPL	-.1453968	.583350	-2.49	0.018**
RPRM	.8164413	7719037	1.06	0.299
RCLM	-.5745658	3696155	-1.55	0.131
RPRF	-2.52	1.18	-2.13	0.042**
RINV	.2887134	1.24	0.23	0.818
Constant	-22616	29563	-0.77	0.450

Source: Model result

NB: The significant criterion is 1% and 5% significant level of probability value

As we seen from table 9, both banking sector development indicators (broad money supply to RGDP ratio and loan provided to private sector to RGDP ratio) are significant at 1 percent significant level and one of insurance sector development indicators (insurance profit to RGDP ratio) is significant at 5 percent significant level. Also signs of all variable's coefficient are negative. It means these variables have positive association with real GDP in short run. In other words, these variables have positive effect on economic growth in short run.

Holding other things remain constant, when 1 percent increases in broad money supply, 17 percent increase in real GDP and vice versa in short run.

In short run when 1 percent increases in loan provided to private sector, 14 percent increase in real GDP and vice versa citrus paribus.

Holding other things remain constant, when 1 percent increases in insurance profit, 252 percent increase real GDP and vice versa in short run.

The remaining variables (insurance premium to RGDP ratio, insurance claim to RGDP ratio and insurance investment to RGDP ratio) are insignificant. It means these variables have no association with the explained variable. Individually these three variables have no effect on economic growth. However, as per the result of Granger causality test, entire six variables jointly have causality with real GDP. It means the banking and insurance sectors development has positive effect on economic growth in short run.

The other test that is commonly used for testing the appropriateness and of capacity of the explanatory variables in terms of explaining the explained variable is adjusted  $R^2$ . The model result shows that 98.9 percent of the endogenous variable is explained by exogenous variables in the model.

The real GDP growth equation is given by:

RGDP=	-22616	+ 0.17RBM	+ 0.14RPL	+ 0.82RPRM	+ 0.57RCLM	+ 2.52RPRF	+ 0.29RINV
	(0.45)	(0.000***)	(0.018**)	(0.299)	(0.131)	(0.042**)	(0.818)

\*\*\*, \*\*, represents level of significance at 1% and 5% respectively

Based on long run and short run model estimation result, it can be concluded that banking and insurance sectors development has positive effect on economic growth in Ethiopia in long run and short run. The development of these major financial sectors has an essential role in economic growth in long run and short run. This finding is supported by finding of Schumpeter, (1911); Waqabaca, (2004); Roman, (2012); Meron, (2016); Fozia, (2016); Neway, (2017); Tekilu, et. Al. (2018).

### 4.3.3. Vector error correction diagnostic test

#### 4.3.3.1. Autocorrelation test

Autocorrelation is checked by Durbin-Watson statistics test. The autocorrelation verification criteria is the probability values of the variable at each lag is more than 5%. It means it should be insignificant. In this study, the variables show autocorrelation problem. Because the probability values at lag 1 and lag 2 shows 0.01358 and 0.00035 respectively. However, it was removed the autocorrelation problem by using Prais-Winsten command. After removed the autocorrelation problem, the result of probability value is transformed to 2.184. Therefore, it passes the autocorrelation test.

#### 4.3.3.2. Normality distributed disturbance test

Normality distributed disturbance test is checked by Jarque-Bera test. A verification criterion of normality distributed disturbance test is the probability values of most variables are insignificant (more than 5%). In this test, only one variable (insurance premium) is significant. Other remaining variables are insignificant. Therefore, the test result indicates that residuals are normally distributed.

Table 10 Normality distributed disturbance test

Variable	Prob > chi 2
Real GDP	0.85438
Broad Money Supply/RGDP	0.31236
Loan Provided to Private Sector/RGDP	0.62036
Insurance Premium/RGDP	0.03511
Insurance Claim/RGDP	0.81256
Insurance Profit/RGDP	0.38657
Insurance Investment/RGDP	0.72709
All	0.50705

Source: Model Result

### 4.3.3.3. Stability test

Stability test is checked by stability testing graph. The criterion is entire variables are found within the circle. In this test, all variables are placed within the circle; no variable found outside the circle. Therefore, the variables are stable.

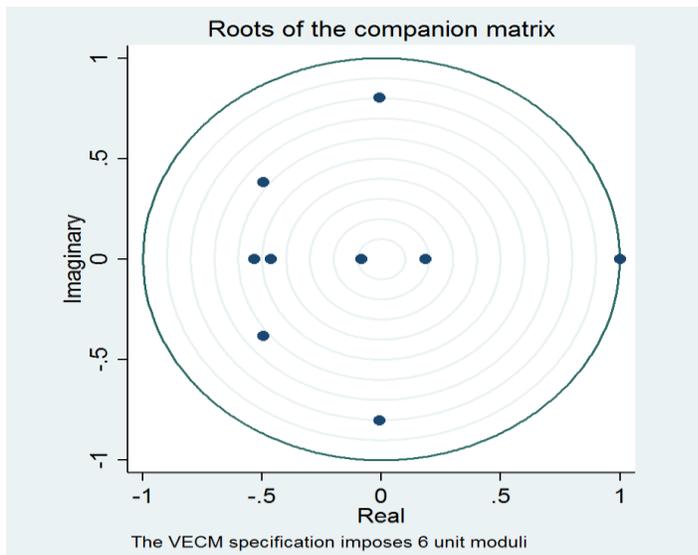


Figure 9 Stability Test

Source: Model result

## **CHAPTER FIVE: SUMMERY, CONCLUSIONS AND RECOMMENDATIONS**

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 and Conclusions**

This study is supported by related theoretical and empirical literature reviews; descriptive statistics is computed and found significant and positive association between the residuals in both long run and short run. Although there are various previous studies done on the topics of nexus between financial sector development and economic growth, entire studies customized banking sector development only; ignored insurance and other financial institutions. It was major research gaps identified by the researcher. The objectives of the study were to assess the status and trend of banking and insurance sector overtime and its relation with economic growth and investigate the effect of banking and insurance sectors development on economic growth of Ethiopia in short run and long run.

The methodology of study employed used a longitudinal research design and used time serious data from 1980 – 2018 and vector error correction model in this study. The data was collected from National Bank of Ethiopia and Ethiopian Insurance Corporation.

The study has tried to develop descriptive analysis and to establish a short run and long run dynamics, causal relationship of explanatory variables with explained variable within the period of 1980-2018. The data was tested for its stationary; primarily the data were unit root and entire variables could transfer to stationary by first difference. That means the variables are integrated of first order I (1) confirmed by augmented Dickey Fuller (ADF) test. Then the co-integration test revealed that the presence of long run association among the variables. Furthermore, post estimation diagnostic tests which are autocorrelation, normality distributed and stability tests were done and the study was passed all tests.

The VECM estimation shows that entire variables jointly affect economic growth positively in the long run and broad money supply, loan provided to private sector and insurance premium has

positive and significant effect on economic growth in short run. According to Granger causality test, banking and insurance sectors have bi-lateral causal relationship with economic growth.

The banking and insurance sectors in Ethiopia is characterized by the dominance of state ownership and the financial sector is basically dominated by the banking system. The banking and insurance development indicators indicate that a substantial gap between financial resource and investment, which the Ethiopian banking and insurance sector is unable to bridge, has led to foreign borrowing to finance investments. However, the development of banking and insurance sectors shows improved from time to time and diminished the dominance of public bank and insurance from time to time. Instated the private sector is going forward to dominate the banking and insurance sectors.

Accordingly, this study examined the long-run and short-run causality analysis between banking and insurance sectors development and economic growth in Ethiopia within the period 1980 to 2018.

The researcher used the VECM estimation model to determine the long-run and short-run association between banking and insurance sector development and economic growth and employed Granger causality test to verify direction of causality between residuals. Furthermore, pre and post estimation tests that unit root test and co-integration test, autocorrelation test, normality test and stability tests are employed.

Empirical result showed that there is a significant at one percent significant level and positive long run relationship between broad money supply, loan provided to private sector, insurance premium, insurance claim, insurance profit & insurance investment jointly with real GDP.

The short run estimation result indicates that three explanatory variables which are broad money supply, loan provided to private sector and insurance profit are significant at one percent significant level and has short run positive association with real GDP. Consequently; the results suggest that banking and insurance sectors development have significant and positive effect on economic growth.

The result of Granger causality test reviled that banking and insurance sectors development has cause to economic growth and vice versa. Both banking and insurance sectors development and economic growth has bi-lateral causality. The progress of banking and insurance sectors is supplement to economic growth and vice versa.

## 5.2. Recommendations

According to descriptive and empirical analysis, it is observed that the banking and insurance sectors have a long-run and short run effect on economic growth in Ethiopia. However, the financial sector of Ethiopia is dominated by the banking sector and the banking sector itself is dominated by commercial bank of Ethiopia. In current scenario the insurance sector is governed by NBE. However, the banking sector is governed at department level and the insurance sector is lead at division level. It leads to less concern to insurance sector and it exerts its own influence on progress of insurance sector. On other hand, the private banks are obligated to purchase great renaissance dam bond equivalent to 27 percent of each disbursed loan by five percent interest rate. It is two percent less from saving interest paid by the banks to the depositors. Also they are obligated to serenade 30 percent of their foreign currency to NBE by buying rate price. In addition entire government finance is hold by public banks and every credit facility provided to government owned companies are financed by public banks. In case of insurance companies, NBE obligated them to hold 65 percent of their collected premium in the form of cash or cash substitute form. It leads the insurance companies to improper utilization of their own asset.

Therefore, primarily, the researcher recommends that the ministry of Finance should be improved the country's monetary policy based on equal opportunity and equal concern of overall financial sectors to bring equivalent progress of entire financial sectors. Parallel to monetary policy modification, it should be established independent governor of insurance sector. Meaning that, ministry of finance should be restructured NBE and stratified in to two in the form of national bank of Ethiopia and national insurance of Ethiopia to improve the insurance sector performance.

Secondly, National Bank of Ethiopia should be bare the obligations of purchasing GRD bond and serenading of foreign currency to NBE from private banks in order to minimize burden of financial shortage of the banks, to encourage investment and stimulate overall business activity of the country. Also NBE should be diminished the cash or cash substitute holding requirement of insurance companies to reduce idle asset and to achieve efficient utilization of their asset.

Thirdly, the research used only two explanatory variables as banking sector development indicators (broad money supply and loan provided to private sector) in connection with unavailability diversified variables; however, these variables may not fully capture the concept of banking sector development. Hence, National Bank of Ethiopia as well as entire banks should be improved their data storage and data accessibility culture.

### **5.3. Further Research Implication**

Financial sector is a huge and essential economic sector. According to its wider concept, it needs further study from different directions and perspectives. The researcher suggested that to conduct further research on “How transfer public owned financial institutions to private sector and how the government removes its visible hand from financial sector?”, “How the country accept foreign financial institutions and how manage their influence & resource inflow and out flow?” “How can involve in stock market and how can control volatility of the market and how to transfer from fixed rate to floating rate?”

## REFERENCES

- Abreha Gezae, (2015). Determinants of banking sector development in Ethiopia. Addis Ababa University, Ethiopia.
- Akinboade, O.A. (2000). The relationship between financial deepening and economic growth in Tanzania. *Journal of international development*, Vol.12, pp.939-950.
- Akinlo, A.E. and Egbetunde, T. (2010). Financial Development and Economic Growth: The Experience of 10 Sub-Saharan African Countries Revisited. *The Review of Finance and Banking*, 2(1), 17-28.
- Alemayehu Geda, (2006). The Structure and Performance of Ethiopia's Financial Sector in the Pre- and Post-reform Period with a Special Focus on Banking. Research paper No-2006/112.
- Alemayehu Geda (2007). Political economy of economic growth in Africa, 1960-2000, chapter four of volume 2 submitted to the University of South Africa.
- Alemayehu, et.al (2011). *Applied Time-Series Econometrics: A Practical Guided for Macroeconomic Researchers with a Focus on Africa*. Central Bank of Kenya, African Economic Research Consortium and Addis Ababa University.
- Aderaw, G. (2012). The Relationship of Insurance Sector Development and Economic growth in Ethiopia: empirical evidence. Faculty of Business and Economics: Management Department. Gondar University, Ethiopia.
- Admas, J. T., Robert, R., & White, D. (2007). *Research Methods for Graduate Business and Social Science Students*.
- AXCO, 2017. Insurance Market Report Ethiopia: Life and benefits. Country Visited: Axco2017. Aug, 2017, Number of pages, 115.
- Barro, R. J (1991), Economic Growth in a Cross Section of Countries', *The Quarterly Journal of Economics*, vol. 106, no. 2, pp. 407-43.
- Beck, T., Levine, R., &Loayza , N. (2002). Finance and Sources of Growth. *Journal of Financial Economics*, 58, 261-300.
- Beck,T. and A. Demirguc-Kunt, (2009). Financial institutions and markets across countries and over time data analysis.
- Beck, T. A. Demirguc-Kunt, and Levine,R. (2007). Finance, inequality and the Poor. *World Bank Economic Review* 14: 597-605.

- Belay, T. (2001). *Medin Special Issue Bulletin: In Amharic version 1976-2001*. Addis Ababa. Ethiopia Insurance Corporation: Marketing & Communication Department.
- Benhabib, J. and M. M. Spiegel (2000). *The Role of Financial Development in Growth and Investment*. *Journal of Economic Growth*, 5: 341-360.
- Brooks, C. (2008). *Introductory Econometrics for Finance (2nd ed.)*. New York: Cambridge University Press.
- Calderon, C. and Liu, L. (2003). *The Direction of Causality between Financial Development and Economic Growth*. *Journal of Development Economics* 72: 321-334.
- Christina T, (2013). *Financial development and economic growth in Tanzania: The University of Nairobi*.
- Costantine R, (2013). *The causal relationship between financial development and economic growth in Tanzania 1980-2010*. University of Tanzania.
- Demirguc-Kunt, A. and Levine, R. (2008). *Finance, Financial Sector Policies, and Longrun Growth*. The World Bank Commission on Growth and Development, Working Paper 11.
- DFID, (2004). *The importance of financial sector development for growth and poverty reduction*.
- Engle, RF & Granger, CWJ (1987), *Co-integration and error correction: representation*.
- Díaz-Alejandro, C.F. (1985). *Good-bye Financial Repression, Hello Financial Crash*. *Journal of Development Economics*, 19(1-2), 1-24.
- Fozia Musema, (2016). *The nexus between economic growth and financial development: The case of Ethiopian economy*, Addis Ababa University.
- Genye, T. (2011). *Currency Devaluation and Economic Growth: the case of Ethiopia*. Unpublished Master's Thesis, Stockholm University.
- Goldsmith, R.W. (1969). *Financial structure and development*. New Haven, CT: Yale University Press.
- Granger, C. W. J., and Newbold, P. 1974. *Spurious Regression in Econometrics*. *Journal of Econometrics*. 2, 111-120.
- Greenwood, J. and Jovanovic, B. (1990). *Financial Development, Growth and the Distribution of Income*. *Journal of Political Economy*, 98 (5), 1076-1108.
- Gujarati, D. N. (2004). *Basic Econometrics (Vol. 4th edition)*. MacGraw-hill Companies.
- Hailmichael, K. (2011). *The Ethiopian Insurance Market: African Reinsurance Corporation*, p.M.B.12765, Loges, Nigeria. Vol.025.

- Hailu, Zeleke, 1.ed. (2007). Insurance In Ethiopia: historical development, present status and future challenges, 1 edition, Addis Ababa, Ethiopia.
- Haiss, P. and Sümegi, K. (2008). 'The relationship between insurance and economic growth in Europe: A theoretical and empirical analysis', *Empirical*, 35(4), Pp.405-431.
- Hanna, M. D. (2015). Determinants of insurance companies profitability in Ethiopia, Master thesis. Addis Ababa University, Ethiopia.
- Harris R. (1995). *Using Co-integration Analysis in Econometric Modeling*, London.
- Henok Tefera, (2016). Internal factors influencing dividend payout of Ethiopian insurance companies, Addis Ababa University, Ethiopia.
- Johansen, S. (1988). Statistical analysis of co integration vectors. *Journal of Economic Dynamics and Control*, 12, 231–254.
- Kahase G/Michael, (2018). Ethiopian Insurance sector and its Contribution to Economic Growth, Addis Ababa University, Ethiopia.
- Kenichi Ohno (2009). *Ethiopia: Political Regime and Development Policies*.
- Kihara, M. 2012. *The Importance of Insurance its challenges and solutions*.
- King, R. G., & Levine, R. (1993). Finance and Growth: Schumpeter Might be Right. *Quarterly Journal of Economics*, 108 (3 ), 717-738.
- Kiyota, K., Peitsch, B., Stern, R., (2007). *Research Seminar in International Economics: The Case of Financial Sector Liberalization in Ethiopia*. University of Michigan, Ann Arbor, Michigan. Discussion Paper No. 565.
- La Porta, R. (1998): "Law and finance", *Journal of Political Economy*, Vol. 106, pp. 1113-1155.
- Levine, R. (2004). *Finance and Growth: Theory and Evidence*. Handbook of Economic Growth.
- Lucas, R. E. (1988). On the mechanics of economic development. *Journal of monetary economics*, 22, 3-42.
- Luintel, K.B. and Khan M., (1999). A quantitative reassessment of the finance growth nexus: evidence from a multivariate VAR. *Journal of Development Economics*, 60 (2): 381-405.
- Majid, M. S. A., Mahrizal., 2007. Does financial development cause economic growth in the Asian -4 countries? *Savings and Development* 31(4), 369-398.
- Mankiw N.G, D. Romer, & D.H. Weil (1992), 'A Contribution to the Empirics of Economic Growth', *The Quarterly Journal of Economics*, vol. 107.

- Mezegebe, M. W., 2010. Assessment of Re-insurance Business in developing countries: In the case of Ethiopia, School of Business Leader University of South Africa, Addis Ababa, Ethiopia.
- McKinnon R. (1973). Money and Capital in Economic Development. Brookings Institution. Washington, DC, USA.
- Mckinnon, R. (1991). The Order of Economic Liberalization .New York: John Hopkins University Press.
- McKinnon, R. I. (1973). Money and capital in economic development. Washington DC: Brooking Institution.
- Meron Edris, (2012). The link between financial development and economic growth in Ethiopia, Addis Ababa University, Ethiopia.
- Mingizem, (2017). Determinants of insurance company profitability in Ethiopia: case study on Nile insurance Diredawa branch, Diredawa University: International Journal of Scientific and Research Publications, Volume 7, Issue 6, June 2017 761 ISSN 2250-3153.
- Mishkin, F. & Eakins,S.G., (2012). Financial Markets and Institutions, Seventh Edition, Prentice hall Pearson.
- MOFED (2010). The Federal Democratic Republic of Ethiopia Growth and Transformation Plan (GTP) 2010/11-2014/15.
- MOFED (2015), the federal democratic republic of Ethiopia growth and transformation plan (GTP) 2015/16-2019/20.
- Mukhopadhyay, B and Pradhan, R. (2010). An Investigation of the Finance-Growth Nexus: Study of Asian Developing Countries Using Multivariate VAR Model. International Research Journal of Finance and Economics, Issue 58.
- Mulu Gebreeyesus (2013), Industrial Policy and Development in Ethiopia: Evolution and Current Performance: Helsinki, Finland.
- Mwanakatwe, P.and Barrow, L. (2010). Ethiopia's Economic Growth Performance: Current Situations and Challenges. Economic Brief, Vol 1, No 5.
- National Bank of Ethiopia, annual report 2017/18.
- Ndalu. C. (2017). 'Financail deepening of insurance and Economic growth in Kenya', International journal of Academic research in accounting, Finance and Management Sciences, 6 (1), Pp.7-14
- Ndebbio, J. E. (2004). Financial deepening, economic growth and development.

- Neway Megersa, (2017). Financial sector development nexus economic growth in Ethiopia: saint Mary's university, Ethiopia.
- Odhiambo, N.M. (2004). Is Financial Development Still a Spur to Economic growth? A Causal Evidence from South Africa. *Savings and Development*, 28(1), 47-62.
- Odhiambo, N. M. (2007). Supply-leading versus demand-following hypothesis: Empirical evidence from three SSA countries. *African Development Review* 19(2), 257-280.
- Odhiambo, N.M. (2011). Financial Deepening, Capital Inflows and Economic Growth Nexus in Tanzania: A Multivariate Model. *Journal of Social Science*, 28(1), 65-71.
- Rahman, H. (2004). Financial Development-Economic Growth Nexus: A Case Study of Bangladesh. *The Bangladesh Development Studies*, Vol.30, No.3/4, pp 113-128.
- Richard, T. Florence M. and Zénon M. (2015). The effects of deposits mobilization on Financial performance in commercial banks in Rwanda: A case of equity bank Rwanda limited, *international journal of small business and entrepreneurship research*, Vol.3, No.6, pp.44-71, November 2015.
- Roman Tesfaye, (2012). The link between financial development and economic growth in Ethiopia. Addis Ababa University, Ethiopia.
- Romer, P.M. (1986). Increasing Returns and Long-run Growth', *Journal of Political Economy*, vol. 94, pp.1002-1037.
- Sanchez, B. Hassan, M.K. and Yu, J. (2011). Financial Development and Economic Growth: New evidence from Panel Data. *The Quarterly Review of Economics and Finance*, 51, 88-104.
- Schumpeter, J. A. (1911). *The theory of economic development*. Cambridge: Harvard University.
- Shaw, E. S. (1973). *Financial deepening in economic development*. Oxford University Press, U.S.A.
- Shrestha, M. B. (2005). *Financial liberalization in Nepal*. New south Wales, Australasia: University of Wollongong.
- Sime Workneh, (2016). *Causality between financial development and economic growth: empirical evidence from Ethiopia*: Ethiopian Civil Service University, school of policy studies.
- Solomon, A. (2015). *Financial sector development and economic growth nexus: an empirical analysis of pacific Melanesian countries*.

- Solow, R.M. (1956), A Contribution to the Theory of Economic Growth', Quarterly Journal of Economics, vol. 70, no. 1.
- Sorensen, P. B., & Whitta, J. H. J. (2005). Introducing advanced macroeconomics: Workingpaper, No.145. Retrieved from <http://papers.ssrn.com/so13/papers.cfm>.
- Swan, T.W. (1956), Economic Growth and Capital Accumulation', Economic Record, vol. 32, no. 2.
- Tekilu, et.al (2018). The link between financial development and sectoral output growth in Ethiopia: the case of agriculture, industry and service sectors, Jimma University.
- Tigabu. M. (2009) Financial Liberalization and Finance-Growth Nexus: An Empirical Assessment of the Ethiopian Economy.
- Ucer, E. (1997). Notes on financial liberalization. A paper presented on 'Macroeconomic Management: New Methods and Current Issues' held in Ankara.
- Waqabaca, C. (2004). Financial Development and Economic Growth in Fiji. Working Paper 2004/03.
- World Bank's Investment Climate Assessment Report, Determinants of Private Sector Growth in Ethiopia's Urban Industry: The Role of Investment Climate. The World Bank, Washington, D.C. January 2016.

## APPENDICES

### Appendices A: Descriptive statistics of variables

Variable	Obs	Mean	Std. Dev.	Min	Max
RealGDP	39	340195.5	397567	101802.6	1717795
BroadMoney	39	94874.37	170022	2108.8	740572.9
Privateloan	39	35716.39	64115.04	465	287005.7
InsPremuim	39	1492.961	2278.996	93.638	8574
InsClaim	39	958.8215	1494.416	30.159	5536.16
InsProfit	39	256.5009	383.8479	20.058	1453.675
InsInvest	39	374.4393	650.4967	5.062	2882.362

### Appendices B: Unit root test

Dickey-Fuller test for unit root		Number of obs = 37			
Test Statistic	Interpolated Dickey-Fuller				
	1% Critical Value	5% Critical Value	10% Critical Value		
Z(t)	-5.515	-4.270	-3.552	-3.211	
MacKinnon approximate p-value for Z(t) = 0.0000					
D.rgdp	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
rgdp					
L1.	-.9415235	.1707244	-5.51	0.000	-1.288477 - .5945698
_trend	4820.025	1965.052	2.45	0.019	826.5589 8813.491
_cons	-50447.97	39757.75	-1.27	0.213	-131245.4 30349.5

Dickey-Fuller test for unit root		Number of obs = 37			
Test Statistic	Interpolated Dickey-Fuller				
	1% Critical Value	5% Critical Value	10% Critical Value		
Z(t)	-5.515	-4.270	-3.552	-3.211	
MacKinnon approximate p-value for Z(t) = 0.0000					
D.rgdp	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
rgdp					
L1.	-.9415235	.1707244	-5.51	0.000	-1.288477 - .5945698
_trend	4820.025	1965.052	2.45	0.019	826.5589 8813.491
_cons	-50447.97	39757.75	-1.27	0.213	-131245.4 30349.5

Dickey-Fuller test for unit root Number of obs = 37

Test Statistic	Interpolated Dickey-Fuller		
	1% Critical Value	5% Critical Value	10% Critical Value
Z(t)	-6.593	-4.270	-3.211

MacKinnon approximate p-value for Z(t) = 0.0000

D.rbm	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
rbm					
L1.	-1.14167	.1731555	-6.59	0.000	-1.493565 - .7897758
_trend	.0006179	.0007162	0.86	0.394	-.0008375 .0020733
_cons	.0006236	.0155648	0.04	0.968	-.031008 .0322551

Dickey-Fuller test for unit root Number of obs = 37

Test Statistic	Interpolated Dickey-Fuller		
	1% Critical Value	5% Critical Value	10% Critical Value
Z(t)	-7.177	-4.270	-3.211

MacKinnon approximate p-value for Z(t) = 0.0000

D.rpl	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
rpl					
L1.	-1.233539	.1718857	-7.18	0.000	-1.582852 - .8842248
_trend	.0002566	.0002542	1.01	0.320	-.00026 .0007731
_cons	.0003544	.0055212	0.06	0.949	-.0108661 .0115749

Dickey-Fuller test for unit root Number of obs = 37

Test Statistic	Interpolated Dickey-Fuller		
	1% Critical Value	5% Critical Value	10% Critical Value
Z(t)	-5.143	-4.270	-3.211

MacKinnon approximate p-value for Z(t) = 0.0001

D.rprm	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
rprm					
L1.	-.8754104	.1702273	-5.14	0.000	-1.221354 - .5294668
_trend	-5.22e-07	.000012	-0.04	0.966	-.000025 .000024
_cons	.0001088	.0002632	0.41	0.682	-.0004261 .0006437

Dickey-Fuller test for unit root Number of obs = 37

Test Statistic	Interpolated Dickey-Fuller			
	1% Critical Value	5% Critical Value	10% Critical Value	
Z(t)	-6.444	-4.270	-3.552	-3.211

MacKinnon approximate p-value for Z(t) = 0.0000

D.rclm	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
rclm						
L1.	-1.098288	.1704474	-6.44	0.000	-1.444678	-.7518968
_trend	-7.93e-07	9.34e-06	-0.08	0.933	-.0000198	.0000182
_cons	.0001019	.000204	0.50	0.621	-.0003126	.0005165

Dickey-Fuller test for unit root Number of obs = 37

Test Statistic	Interpolated Dickey-Fuller			
	1% Critical Value	5% Critical Value	10% Critical Value	
Z(t)	-6.503	-4.270	-3.552	-3.211

MacKinnon approximate p-value for Z(t) = 0.0000

D.rprf	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
rprf						
L1.	-1.108686	.170498	-6.50	0.000	-1.455179	-.762192
_trend	1.83e-07	3.73e-06	0.05	0.961	-7.40e-06	7.76e-06
_cons	.0000107	.0000813	0.13	0.897	-.0001546	.0001759

Dickey-Fuller test for unit root Number of obs = 37

Test Statistic	Interpolated Dickey-Fuller			
	1% Critical Value	5% Critical Value	10% Critical Value	
Z(t)	-8.015	-4.270	-3.552	-3.211

MacKinnon approximate p-value for Z(t) = 0.0000

D.rinv	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
rinv						
L1.	-1.315107	.1640794	-8.02	0.000	-1.648556	-.9816574
_trend	1.90e-06	2.94e-06	0.64	0.524	-4.09e-06	7.88e-06
_cons	.0000196	.0000641	0.31	0.761	-.0001107	.0001499

### Appendices C: Lag selection order

```
. varsoc rgdp rbm rpl rprm rclm rprf rinu, maxlag(2)
```

Selection-order criteria

Sample: 1983 - 2018

Number of obs = 36

lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	736.008				6.1e-27	-40.5004	-40.393	-40.1925
1	849.481	226.95	49	0.000	1.8e-28	-44.0823	-43.2225	-41.619*
2	922.064	145.17*	49	0.000	6.7e-29*	-45.3924*	-43.7804*	-40.7738

Endogenous: rgdp rbm rpl rprm rclm rprf rinu

Exogenous: \_cons

### Appendices D: Co-integration Test

```
. vecrank rgdp rbm rpl rprm rclm rprf rinu, trend(constant)
```

Johansen tests for cointegration

Trend: constant

Number of obs = 36

Sample: 1983 - 2018

Lags = 2

maximum				trace	5%
rank	parms	LL	eigenvalue	statistic	critical
0	56	804.65715	.	192.7420	124.24
1	69	837.30384	0.83695	127.4486	94.15
2	80	863.87267	0.77146	74.3110	68.52
3	89	879.75518	0.58620	42.5459*	47.21
4	96	894.3421	0.55531	13.3721	29.68
5	101	899.56307	0.25178	2.9302	15.41
6	104	900.98296	0.07585	0.0904	3.76
7	105	901.02815	0.00251		

## Appendices E: Granger Causality Test

Granger causality Wald tests

Equation	Excluded	chi2	df	Prob > chi2
rgdp	rbm	19.782	2	0.000
rgdp	rpl	.8508	2	0.654
rgdp	rprm	23.073	2	0.000
rgdp	rclm	.23289	2	0.890
rgdp	rprf	2.1677	2	0.338
rgdp	rinv	6.796	2	0.033
rgdp	ALL	131.95	12	0.000
rbm	rgdp	11.773	2	0.003
rbm	rpl	.81191	2	0.666
rbm	rprm	22.597	2	0.000
rbm	rclm	.12737	2	0.938
rbm	rprf	1.1856	2	0.553
rbm	rinv	9.0587	2	0.011
rbm	ALL	89.598	12	0.000
rpl	rgdp	12.556	2	0.002
rpl	rbm	14.722	2	0.001
rpl	rprm	16.041	2	0.000
rpl	rclm	.02131	2	0.989
rpl	rprf	1.4189	2	0.492
rpl	rinv	5.5137	2	0.063
rpl	ALL	62.231	12	0.000
rprm	rgdp	22.678	2	0.000
rprm	rbm	33.752	2	0.000
rprm	rpl	.28751	2	0.866
rprm	rclm	4.053	2	0.132
rprm	rprf	9.5558	2	0.008
rprm	rinv	18.815	2	0.000
rprm	ALL	115.02	12	0.000
rclm	rgdp	4.0345	2	0.133
rclm	rbm	5.719	2	0.057
rclm	rpl	.95929	2	0.619
rclm	rprm	13.578	2	0.001
rclm	rprf	1.5137	2	0.469
rclm	rinv	1.3726	2	0.503
rclm	ALL	24.982	12	0.015
rprf	rgdp	1.3284	1	0.249
rprf	rbm	7.3501	2	0.025
rprf	rpl	2.6229	2	0.269
rprf	rprm	33.12	2	0.000
rprf	rclm	1.4948	2	0.474
rprf	rinv	23.236	2	0.000
rprf	ALL	79.893	10	0.000
rinv	rgdp	11.835	1	0.001
rinv	rbm	22.763	2	0.000
rinv	rpl	7.981	2	0.018
rinv	rprm	16.965	2	0.000
rinv	rclm	8.4647	2	0.015
rinv	rprf	6.5071	2	0.039
rinv	ALL	42.255	10	0.000

## Appendices F: Vector error correction model estimation

```
. vec rgdp rbm rpl rprm rclm rprf rinv, trend(constant)
Vector error-correction model
Sample: 1983 - 2018
Number of obs = 36
Log likelihood = 837.3038
AIC = -42.68355
Det(Sigma_ml) = 1.48e-29
HQIC = -41.62422
SBIC = -39.64847
```

Equation	Parms	RMSE	R-sq	chi2	P>chi2
D_rgdp	9	97517.3	0.7003	63.10286	0.0000
D_rbm	9	.042757	0.7042	64.27596	0.0000
D_rpl	9	.015316	0.7266	71.76673	0.0000
D_rprm	9	.000638	0.7027	63.83189	0.0000
D_rclm	9	.000797	0.3821	16.69742	0.0537
D_rprf	9	.00023	0.6796	42.74412	0.0000
D_rinv	9	.000235	0.5851	28.51839	0.0008

	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
<b>D_rgdp</b>						
_cel						
L1.	-.4384896	.1212294	-3.62	0.000	-.6760948	-.2008844
rgdp						
LD.	.0667664	1.006707	0.07	0.947	-1.906344	2.039877
rbm						
LD.	-3417429	2128084	-1.61	0.108	-7588397	753539.2
rpl						
LD.	6650773	4199041	1.58	0.113	-1579195	1.49e+07
rprm						
LD.	-1.46e+07	5.35e+07	-0.27	0.784	-1.20e+08	9.03e+07
rclm						
LD.	4.58e+07	2.62e+07	1.75	0.080	-5516127	9.72e+07
rprf						
LD.	7.01e+07	7.77e+07	0.90	0.366	-8.21e+07	2.22e+08
rinv						
LD.	3.68e+08	7.81e+07	4.71	0.000	2.15e+08	5.21e+08
_cons	.0025465	17803.68	0.00	1.000	-34894.58	34894.58

## Appendices G: Autocorrelation test

```
. veclmar
```

Lagrange-multiplier test

lag	chi2	df	Prob > chi2
1	73.3956	49	0.01358
2	89.6246	49	0.00035

H0: no autocorrelation at lag order

Prais-Winsten AR(1) regression -- iterated estimates

Source	SS	df	MS	Number of obs	=	37
Model	9.3133e+11	6	1.5522e+11	F(6, 30)	=	569.23
Residual	8.1806e+09	30	272685240	Prob > F	=	0.0000
				R-squared	=	0.9913
				Adj R-squared	=	0.9896
Total	9.3951e+11	36	2.6097e+10	Root MSE	=	16513

rgdp	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
rbm	-1715320	194206.9	-8.83	0.000	-2111944 -1318697
rpl	-1453968	583350.4	-2.49	0.018	-2645329 -262607.6
rprm	8164413	7719037	1.06	0.299	-7599962 2.39e+07
rclm	-5745658	3696155	-1.55	0.131	-1.33e+07 1802898
rprf	-2.52e+07	1.18e+07	-2.13	0.042	-4.94e+07 -984446.4
rinv	2887134	1.24e+07	0.23	0.818	-2.25e+07 2.82e+07
_cons	-22616.09	29563.52	-0.77	0.450	-82992.85 37760.66

Durbin-Watson statistic (original)	0.271841
Durbin-Watson statistic (transformed)	2.184323

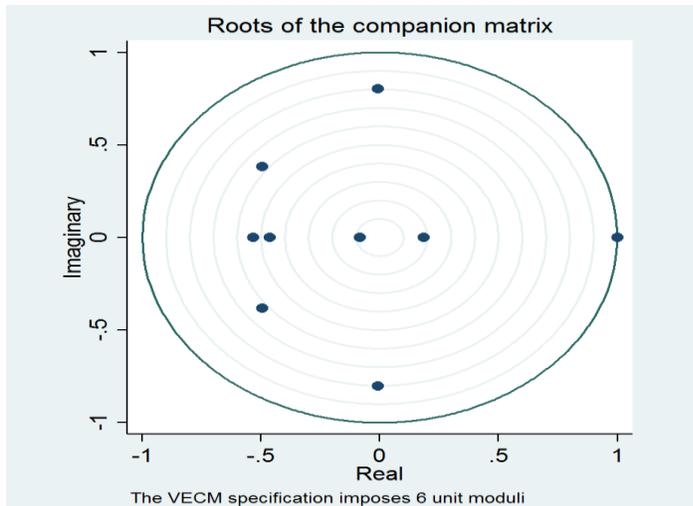
## Appendices H: Normality test

. vecnorm, jbera

Jarque-Bera test

Equation	chi2	df	Prob > chi2
D_rgdp	0.315	2	0.85438
D_rbm	2.327	2	0.31236
D_rpl	0.955	2	0.62036
D_rprm	6.698	2	0.03511
D_rclm	0.415	2	0.81256
D_rprf	1.901	2	0.38657
D_rinv	0.637	2	0.72709
ALL	13.249	14	0.50705

## Appendices I: Stability test



## Appendices J: Branch networks and capital of banking and insurance sectors in Ethiopia

### Branch Network and Capital of the Banking System at the End of June 30, 2018

*(Branch in Number and Capital in Millions of Birr)*

Banks	Branch Network								Capital			
	2016/17				2017/18				2016/17		2017/18	
	Regions	Addis Ababa	Total	% Shar	Regions	Addis Ababa	Total	% Shar	Total Capital	% Shar	Total Capital	% Shar
<b>1. Public Banks</b>												
Commercial Bank of Ethiopia	1028	282	1310	30.8	1051	324	1375	28.9	42,579.6	54.6	43,851.8	51.1
Development Bank of Ethiopia	106	4	110	2.6	103	4	107	2.2	7,595.1	9.7	7,676.5	9.0
<b>Total Public Banks</b>	<b>1134</b>	<b>286</b>	<b>1420</b>	<b>33.4</b>	<b>1154</b>	<b>328</b>	<b>1482</b>	<b>31.2</b>	<b>50174.7</b>	<b>64.4</b>	<b>51,528.3</b>	<b>60.1</b>
<b>2. Private Banks</b>												
Awash International Bank	186	153	339	8.0	213	169	382	8.0	3,807.6	4.9	4,210.0	4.9
Dashen Bank	184	131	315	7.4	238	143	381	8.0	3,420.9	4.4	3,725.6	4.3
Abyssinia Bank	140	113	253	5.9	144	140	284	6.0	2,371.0	3.0	3,265.8	3.8
Wegagen Bank	139	84	223	5.2	174	118	292	6.1	2,824.5	3.6	3,195.7	3.7
United Bank	111	93	204	4.8	116	117	233	4.9	2,221.0	2.8	2,579.9	3.0
Nib International Bank	92	111	203	4.8	101	127	228	4.8	2,570.2	3.3	2,991.4	3.5
Cooperative Bank of Oromiya	232	55	287	6.7	270	62	332	7.0	1,281.7	1.6	1,924.6	2.2
Lion International Bank	110	48	158	3.7	145	65	210	4.4	1,163.5	1.5	1,479.7	1.7
Oromia International Bank	164	73	237	5.6	171	89	260	5.5	1,378.3	1.8	1,890.0	2.2
Zemen Bank	15	7	22	0.5	12	13	25	0.5	1,050.7	1.3	1,391.8	1.6
Buna International Bank	74	69	143	3.4	96	80	176	3.7	1,152.3	1.5	1,667.7	1.9
Berhan International Bank	114	63	177	4.2	76	92	168	3.5	1,536.3	2.0	1,936.5	2.3
Abay Bank	112	40	152	3.6	109	53	162	3.4	1,139.3	1.5	1,514.7	1.8
Addis International Bank	21	32	53	1.2	24	35	59	1.2	688.4	0.9	789.6	0.9
Debut Global Bank	19	19	38	0.9	22	21	43	0.9	373.1	0.5	614.3	0.7
Enat Bank	10	23	33	0.8	15	25	40	0.8	809.3	1.0	1,045.4	1.2
<b>Total Private Banks</b>	<b>1,723</b>	<b>1,114</b>	<b>2,837</b>	<b>66.6</b>	<b>1,926</b>	<b>1,349</b>	<b>3,275</b>	<b>68.8</b>	<b>27,788.1</b>	<b>35.6</b>	<b>34,222.8</b>	<b>39.9</b>
<b>3. Grand Total Banks</b>	<b>2857</b>	<b>1400</b>	<b>4257</b>	<b>100</b>	<b>3,080</b>	<b>1677</b>	<b>4757</b>	<b>100.0</b>	<b>77,962.7</b>	<b>100.0</b>	<b>85,751.2</b>	<b>100.0</b>

Source: Commercial Banks

### Branch Network & Capital of Insurance Companies as at June 30, 2018

*(Branch in Number and Capital in Millions of Birr)*

No.	Insurance Companies	Branch						Capital		
		2016/17			2017/18			2016/17	2017/18	% Change
		A.A	Regions	Total	A.A	Regions	Total	A	B	B/A
1	Ethiopian Ins. Cor.	20	55	75	25	60	85	1,056.0	1,530.0	44.9
2	Awash Ins. Com. S.C.	26	15	41	27	17	44	400.0	439.0	9.7
3	Africa Ins. Com. S.C.	14	13	27	15	13	28	271.0	294.0	8.5
4	National Ins. Co. of Eth.	19	15	34	19	15	34	111.0	166.0	49.5
5	United Ins. Com. S.C	20	11	31	25	12	37	334.0	368.0	10.2
6	Global Ins. Com. S.C	8	7	15	8	8	16	128.0	148.0	15.6
7	Nile Ins. Com. S.C	19	20	39	20	20	40	320.0	436.0	36.3
8	Nyala Ins. Com. S.C	15	15	30	15	16	31	391.0	516.0	32.0
9	Nib Ins. Com. S.C	24	13	37	26	13	39	328.0	313.0	-4.6
10	Lion Ins. Com. S.C	16	15	31	16	15	31	83.0	131.0	57.8
11	Ethio-Life Ins. Com. S.c	15	4	19	15	5	20	100.0	112.0	12.0
12	Oromia Ins. Com. S.c	18	19	37	18	20	38	215.0	295.0	37.2
13	Abay Insurance	12	11	23	13	12	25	217.0	260.0	19.8
14	Berhan insurance S.C	9	2	11	9	4	13	91.0	112.0	23.1
15	Tsehay Insurance S.C	10	5	15	12	7	19	98.0	119.0	21.4
16	Lucy	7	4	11	11	4	15	116.0	129.0	11.2
17	Bumma Insurance S.C.	11	5	16	11	6	17	73.0	108.0	47.9
	<b>Total</b>	<b>263</b>	<b>229</b>	<b>492</b>	<b>285</b>	<b>247</b>	<b>532</b>	<b>4,332</b>	<b>5,476</b>	<b>26.4</b>

Source: Banks and Insurance companies

**Appendices K: Raw data customized in the study (In millions of birr)**

<b>Obs</b>	<b>Real GDP</b>	<b>Broad Money</b>	<b>Private loan</b>	<b>Ins Premium</b>	<b>Ins Claim</b>	<b>Ins Profit</b>	<b>Ins Invest</b>
1980	108,023.09	2,108.80	560.90	96.645	40.819	30.222	7.755
1981	108,920.05	2,377.60	465.00	93.638	30.159	40.878	6.343
1982	109,170.34	2,643.70	800.40	102.756	33.342	47.680	6.538
1983	120,201.80	3,040.50	528.40	112.755	42.631	46.519	5.795
1984	111,615.52	3,383.70	501.60	137.571	38.128	58.663	5.091
1985	101,802.62	3,849.00	497.70	133.699	45.251	62.971	5.065
1986	111,910.16	4,448.20	490.30	149.885	45.789	64.981	5.062
1987	126,610.94	4,808.70	514.70	161.736	48.648	48.982	5.216
1988	125,935.92	5,238.70	579.00	177.857	49.752	78.777	5.483
1989	126,867.76	5,704.40	491.20	159.470	117.576	71.412	13.000
1990	132,336.16	6,708.20	508.70	148.010	81.807	42.274	15.437
1991	128,347.23	7,962.20	535.90	144.468	87.412	73.396	15.493
1992	125,406.28	9,010.90	572.40	128.585	152.494	20.058	14.366
1993	139,411.50	10,136.70	1,185.90	204.497	88.105	26.486	21.115
1994	139,480.16	11,598.70	1,867.40	253.968	111.723	70.819	25.178
1995	147,454.54	14,408.40	3,693.00	300.492	118.295	56.900	74.675
1996	162,373.14	15,654.90	5,589.30	319.355	178.301	43.606	144.051
1997	169,246.88	16,548.80	7,939.60	357.167	446.889	59.805	152.025
1998	167,917.47	18,643.30	10,183.50	377.695	181.984	102.758	137.732
1999	178,512.68	19,399.40	11,998.60	397.603	209.194	105.404	149.225
2000	184,880.72	22,177.80	12,052.09	420.101	219.163	108.347	207.926
2001	198,595.16	24,516.20	13,355.06	469.651	278.093	111.104	199.302
2002	201,840.04	26,292.06	12,897.73	577.557	327.834	110.060	181.970
2003	197,604.40	29,060.16	13,261.36	581.179	352.036	95.277	185.217
2004	220,782.11	33,625.97	14,595.19	597.499	354.573	59.220	194.789
2005	248,698.26	40,211.75	17,152.41	676.316	402.542	91.172	210.257
2006	277,396.49	46,377.38	21,610.00	842.778	562.070	106.459	185.514
2007	310,115.10	56,651.89	25,588.77	1,033.210	698.568	121.706	223.484
2008	344,775.46	68,182.14	29,269.57	1,261.142	839.802	137.059	383.475
2009	379,362.44	82,509.75	34,041.90	1,479.314	1,048.901	157.568	319.975
2010	419,217.78	104,432.40	40,910.67	1,939.632	1,211.531	306.626	384.839
2011	475,647.50	145,376.97	51,893.07	2,583.011	1,865.209	312.114	479.993
2012	517,026.54	189,398.77	68,479.08	3,996.155	2,560.727	534.416	722.089
2013	568,432.35	235,313.59	82,558.20	4,797.180	3,022.321	852.321	816.395
2014	626,977.14	297,746.59	101,920.70	4,961.528	3,156.525	954.628	799.012
2015	692,221.86	371,328.91	133,618.07	5,557.129	3,478.937	1,121.408	1,237.570
2016	1,449,397.00	445,266.25	165,467.43	6,426.685	4,374.471	1,016.399	1,830.842
2017	1,595,316.48	573,384.05	217,758.67	7,493.571	4,956.276	1,201.384	2,343.478
2018	1,717,794.51	740,572.90	287,005.74	8,574.000	5,536.160	1,453.675	2,882.362

Source: National Bank of Ethiopia and Ethiopian Insurance Corporation